Supplemental material for "Multi-label methods extensive experimental comparison focused on ranking performance"

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1. Methods description

In this section, we present a description of the methods used in the experiments. As our focus is on the experimental comparison, we only describe each method briefly. Basic methods are described more in depth, whereas for their derived variants we only describe the main differences with the basic method.

In order to present a better description of the methods, we use a common notation instead of the notation used in the original papers describing the models. The notation is summarized in Table 1. This notation basically follows the one presented by Zhang and Zhou [1].

Symbol	Meaning
$\mathcal{X}$	d-dimensional instance space $\mathcal{R}^d$
$\mathcal{Y}$	q-dimensional label space with q possible class labels $\{y_1, y_2, \ldots, y_q\}$
$\mathbf{x}$	d-dimensional feature vector $\mathbf{x} \in \mathcal{X}$
Y	Label set associated with $\mathbf{x}$, $Y \subseteq \mathcal{Y}$
$\bar{Y}$	Complementary label set of Y, $Y \cup \bar{Y} = \mathcal{Y}$
$\mathcal{D}$	Multilabel training set $\mathcal{D} = \{(\mathbf{x}_i, Y_i) \vert 1 \leq i \leq m\}$
$h(\cdot)$	Multilabel classifier: $h : \mathcal{X} \to 2^{\mathcal{Y}}$, where $h(\mathbf{x})$ returns the set of predicted relevant labels of $\mathbf{x}$
$f(\cdot, \cdot)$	Real-valued function $f : \mathcal{X} \times \mathcal{Y} \to \mathbb{R}$, where $f(\mathbf{x}, y)$ returns the confidence of y being a relevant label of $\mathbf{x}$
$\text{rank}_f(\cdot, \cdot)$	Ranking function, $\text{rank}_f(\mathbf{x}, y)$ returns the rank of y in $\mathcal{Y}$ based on the descending order induced from $f(\mathbf{x}, \cdot)$
$\mathcal{D}_j$	Binary training set $\mathcal{D}_j = \{(\mathbf{x}_i, \phi(Y_i, y_j)) \vert 1 \leq i \leq m\}$ derived from $\mathcal{D}$ for class label y_j
$\mathcal{B}$	Binary learning algorithm
$\mathcal{M}$	Multiclass learning algorithm
$[\![\cdot]\!]$	$[\![\pi]\!]$ returns 1 if predicate π is true and 0 otherwise

Table 1: Summary of the notations used throughout this paper.

Formally, we define a multilabel problem as follows [1]: Let T be a multilabel evaluation dataset consisting of p multilabel instances $\mathbf{x}_i$ and their associated label set y_i, where $T = \{(\mathbf{x}_i, y_i)\}, 1 \leq i \leq p$, $(\mathbf{x}_i \in X, y_i \in \mathcal{Y} = \{0, 1\}^q)$

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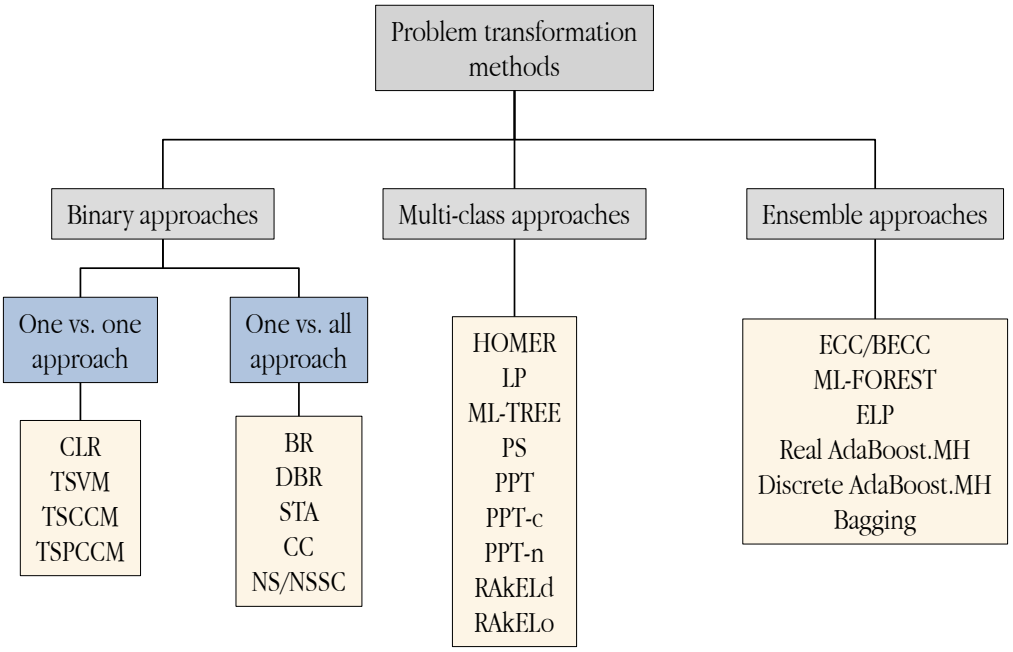


Figure 1: Taxonomy of problem transformation methods.

with a label set L, where $|L| = q$. Let h be a multilabel classifier and $h(\mathbf{x}_i) = \{0,1\}^q$ be the set of labels predicted by h for the instance $\mathbf{x}_i$. Let $f(\mathbf{x}_i, y_i)$, $\mathbf{x}_i \in X$, $y_i \in \mathcal{Y}$ be a real-valued function $f : X \times \mathcal{Y} \to R$. A successful learning system would tend to output larger values from function f for the labels in y_i versus those not in y_i. The real-valued function f can be easily transformed to a ranking function, $rank_f(\mathbf{x}_i, y_i)$, where $rank_f$ is the predicted rank of label y_i, for instance $\mathbf{x}_i$. $h(\mathbf{x}_i)$ can be obtained from $f(\mathbf{x}_i)$ when an appropriate threshold is set.

First, we divide the methods into the two commonly used broad categories of problem transformation methods and algorithm adaptation methods. Second, we group the methods into several subsets for a better comparison. In the following, we present a short description of the used methods. We would like to underline that our paper is devoted to a comparison of methods and is not intended as a review, so an in-depth discussion of every method is outside the purpose of this paper. A summary of all the tested methods is given in Figures **??** and **??** for problem transformation and algorithm adaptation methods, respectively.

1.1. Problem transformation methods

In this section, we provide a brief description of all the problem transformation methods.

1.1.1. One-vs-all approaches

Many methods are based on one-vs-all approaches where binary learners are used to separate one label at a time. The basic method is the binary relevance approach. In this section, we describe this method and the variants used in the experiments.

Binary relevance (BR). The BR method decomposes the q multilabel problem into q independent binary problems. Each binary classifier is trained using the information of one label only [2]. BR constructs a binary training set for every j-th class label y_j as follows:

$$D_j = \{(\mathbf{x}, \phi(Y_i, y_j))|1 \leq i \leq m\} \tag{1}$$

where

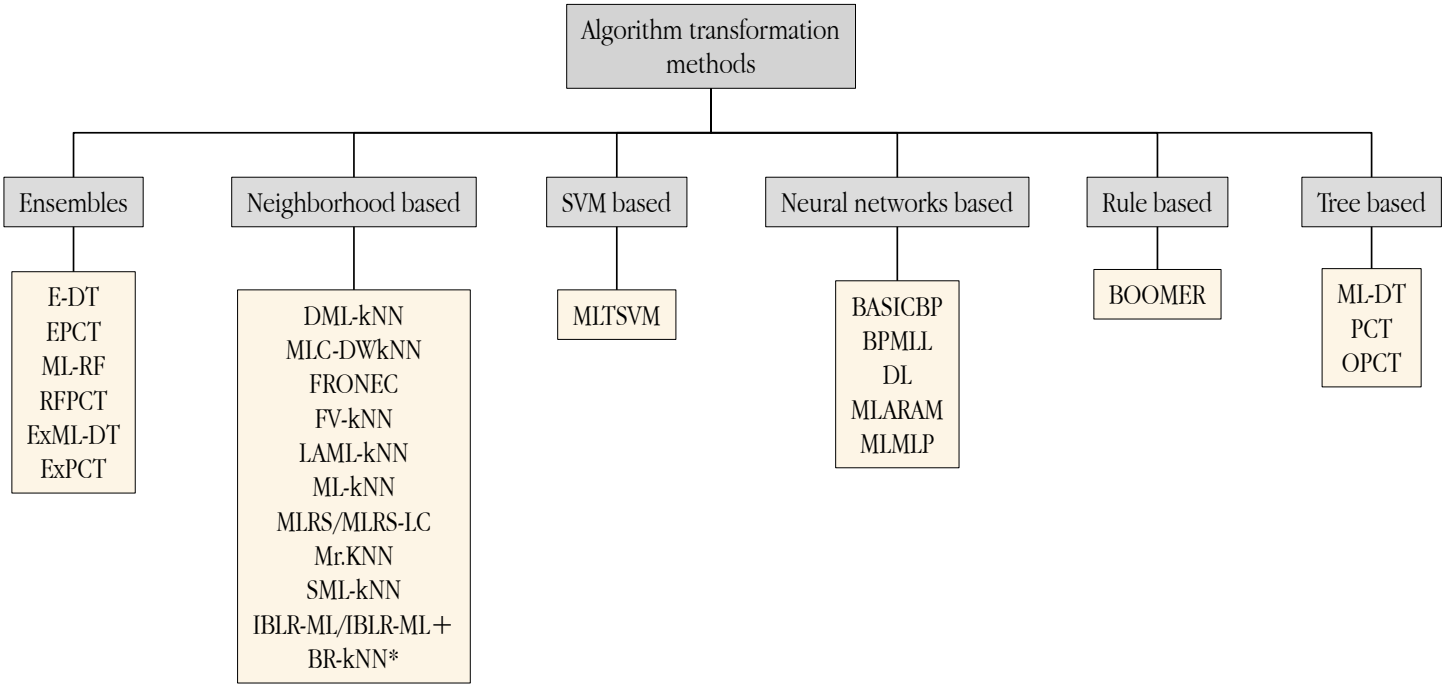


Figure 2: Taxonomy of algorithm adaptation methods.

$$\phi(Y_i, y_j) = \begin{cases} +1, & \text{if } y_j \in Y_i \\ -1, & \text{otherwise.} \end{cases} \tag{2}$$

Then, a binary learning algorithm is used to train a binary classifier: $g_j : \mathcal{X} \to \mathbb{R}$. This means that every training instance $\mathbf{x}_i$ is involved in q binary classifiers where $\mathbf{x}_i$ is a positive instance for inducing $g_j(\cdot)$ if $y_j \in Y_i$ and is a negative instance otherwise. At the time of testing, BR predicts the relevant set, Y, of a query instance $\mathbf{x}$ using the outputs of the q binary classifiers:

$$Y = \{y_j | g_j(\mathbf{x}) > 0, 1 \leq j \leq q\}. \tag{3}$$

In order to avoid predicting an empty Y set, we can modify the definition of Y including the label with the greatest output regardless of the output being positive or negative:

$$Y = \{y_j | g_j(\mathbf{x}) > 0, 1 \leq j \leq q\} \bigcup \{y_{j^*} | j^* = \arg\max_{1 \leq j \leq q} g_j(\mathbf{x})\}. \tag{4}$$

Dependent Binary Relevance (DBR). The DBR [3] method is an extension of the BR approach where additional information is used to train the binary classifiers. The DBR method works as follows: First, it trains a model that is composed of as many binary classifiers as labels:

$$\mathbf{h}(\mathbf{x}, \mathbf{y}) = (g_1(\mathbf{x}, y_2, \ldots, y_q), \ldots, g_q(\mathbf{x}, y_1, \ldots, y_{q-1})), \tag{5}$$

where

$$g_j : \mathcal{X} \times \{0,1\}^{q-1} \longrightarrow \{0,1\}, \tag{6}$$

and is induced from the training data:

$$S_j = \{((\mathbf{x})_i, y_{i,1}, \ldots, y_{i,j-1}, y_{i,j+1}, \ldots, y_{i,q}), y_{i,j}) | i = 1, \ldots, q\}. \quad (7)$$

Thus, the actual information of all labels except j is used as additional features. As the actual values of the labels are not available at testing time, an additional BR model is also trained. This model provides the predicted labels, $\bar{Y}_i$, used for feeding the $h_i(\cdot)$ trained classifiers.

Multilabel stacking (STA). The STA [4, 3] method builds a stack of two groups of classifiers. The first one is formed by the BR classifiers:

$$\mathbf{g}^1(\mathbf{x}) = (g_1^1(\mathbf{x}), \ldots, g_q^1(\mathbf{x})) \quad (8)$$

On a second level, also called the metalevel, another group of binary models is learned, again one for each label. These classifiers consider an augmented feature space that includes the binary outputs of all models of the first level:

$$\mathbf{g}^2(\mathbf{x}, \hat{\mathbf{y}}) = (g_1^2(\mathbf{x}, \hat{\mathbf{y}}), \ldots, g_q^2(\mathbf{x}, \hat{\mathbf{y}})). \quad (9)$$

Obviously, the metalevel classifiers are supposed to induce the dependencies between the labels. At prediction time, the multilabel model returns the outputs of the metalevel classifiers, $\mathbf{h}^2(\mathbf{x})$, while the predictions of $\mathbf{h}^1(\mathbf{x})$ are only used to obtain the attribute values in the extended feature space. Some variants have been developed [3].

Classifier chain (CC). The CC [5] method transforms the problem into a *chain* of binary problems where each binary problem builds upon the predictions of the preceding ones [6]. We define $\tau : \{1, 2, \ldots, q\} \rightarrow \{1, 2, \ldots, q\}$ as a permutation function that specifies an ordering of the labels: $y_{\tau(1)} \succ y_{\tau 2} \succ \cdots y_{\tau(q)}$. For the j-th label in the ordered list, $y_{\tau(j)}$, a training set is constructed appending to every instance $\mathbf{x}_i$ with the relevancy of those labels preceding $y_{\tau(j)}$:

$$D_{\tau(j)} = \left\{ \left([\mathbf{x}, \mathbf{pre}^i_{\tau(j)}], \phi(Y_i, y_{\tau(j)}) \right) | 1 \leq i \leq m \right\}, \quad (10)$$

where

$$\mathbf{pre}^i_{\tau(j)} = (\phi(Y_i, y_{\tau(1)}), \phi(Y_i, y_{\tau(2)}), \ldots, \phi(Y_i, y_{\tau(j-1)}))^T. \quad (11)$$

$[\mathbf{x}, \mathbf{pre}^i_{\tau(j)}]$ concatenates vectors $\mathbf{x}_i$ and $\mathbf{pre}^i_{\tau(j)}$. Then, a binary classifier $\mathcal{B}$ is used to learn $g_{\tau(j)}$ with $D_{\tau(j)}$ as the training set and $y_{\tau(j)}$ as the target label. If $\mathcal{B}$ outputs confidence values, we can use the same classification function as for the BR method:

$$Y = \{y_{\tau(j)} | g_{\tau(j)}(\mathbf{x}) > 0, 1 \leq j \leq q\}, \quad (12)$$

In the other case, the sign function can be used. It is evident that the order of the chain may have a huge impact on the performance of the method.

The CC model can be used to construct an ensemble of classifier chains (ECC) [7], which uses classifier chains as the base classifiers. ECC trains m CC classifiers $C_1, C_2, \ldots, C_m$. Each C_k is trained with a random chain order (of L) and, possibly, a random subset of X. Hence, each C_k model is likely to be unique and able to give different multilabel predictions. These predictions are summed per label so that each label receives a number of votes. A threshold is used to select the most popular labels, which form the final predicted multilabel set. In our experiments, we tried ECCs using the whole dataset for each chain, ECC, and using a bagging sample for each member of the chain, BECC. For the former method, the use of a different random chain for each member of the ensemble is the only source of diversity in the model.

Nested stacking (NS). NS [8] is a modification of the CC method that avoids certain undesired effect of using the actual labels of the training instances to learn the classifiers of the chain. In NS, instead of using the actual true labels, each new classifier is trained with the predictions of the previous ones. Thus, the training set $D_{\tau(j)}$ is given by:

$$D_{\tau(j)} = \left\{ \left([\mathbf{x}, \mathbf{pre}^i_{\tau(j)}], \phi(Y_i, \hat{y}_{\tau(j)}) \right) | 1 \leq i \leq q \right\}, \tag{13}$$

where $\hat{y}_{\tau(j)}$ is the predicted value of label y_j according to the previous members of the chain instead of the ground truth. A further improvement of the method tries to avoid predicting *rare* cases. This modification only allows predicting a set of labels for a query instance that it is already present in the training set. When a new set of relevant labels is obtained, the closest one in the training set is returned. That version is named nested stacking with subset correction (NSSC).

1.1.2. One-vs-one approaches

One-vs-one approaches are also based on training binary classifiers, but in this case, those models are trained to only distinguish between pairs of labels. The basic model is the calibrated label ranking method and there are also a few variants.

Calibrated label ranking (CLR). CLR [9] transforms the multilabel problem into a ranking problem by means of pairwise comparison. For the q possible labels, $q(q-1)/2$ binary classifiers are constructed. Each classifier is trained to distinguish between a pair of classes. In such a way, classifier g_{jk} is trained with set $\mathcal{D}_{jk}$:

$$\mathcal{D}_{jk} = \{(\mathbf{x}_i, \psi(Y_i, y_j, y_K)) | \phi(Y_i, y_j) \neq \phi(Y_i, y_k), 1 \leq i \leq p\}, \tag{14}$$

where

$$\psi(Y_i, y_j, y_k) = \begin{cases} +1, & \text{if } \phi(Y_i, y_j) = +1 \text{ and } \phi(Y_i, y_k) = -1 \\ -1, & \text{if } \phi(Y_i, y_j) = -1 \text{ and } \phi(Y_i, y_k) = +1 \end{cases} \tag{15}$$

This means that only the instances with different relevance for y_j and y_k are included in $\mathcal{D}_{jk}$. Then, a binary learner is used to induce g_{jk} using $\mathcal{D}_{jk}$. After training, classifier g_{jk} casts a vote for label y_j when $g_{jk} > 0$ and for label y_k otherwise. At testing time, a query instance $\mathbf{x}$ is fed into the binary classifiers and each class label receives the votes of the binary classifiers depending of their outcome:

$$\zeta(\mathbf{x}, y_j) = \sum_{k=1}^{j-1} [\![g_{kj} \leq 0]\!] + \sum_{k=j+1}^{q} [\![g_{jk} > 0]\!]. \tag{16}$$

Labels are ranked according to votes. In order to obtain a classification function, a threshold must be set. The CLR method obtains an automatic threshold using the concept of a *virtual label*, y_V. For every label, an additional classifier is constructed using the virtual labels. y_V is considered to be ranked lower than $y_j \in Y_i$ and higher than $y_k \in \bar{Y}_i$. Thus, a dataset $\mathcal{D}_{jV}$ is formed:

$$\mathcal{D}_{jV} = \{(\mathbf{x}_i, \varphi(Y_i, y_j, y_V)), 1 \leq i \leq p\}, \tag{17}$$

where

$$\varphi(Y_i, y_j, y_V) = \begin{cases} +1, & \text{if } y_j \in Y_i \\ -1, & \text{otherwise.} \end{cases} \tag{18}$$

$\mathcal{D}_{jV}$ is used to learn classifier g_{jV}. The voting count of Eq.16 is updated with these classifiers $\zeta^*(\mathbf{x}, y_j) = \zeta(\mathbf{x}, y_j) + [\![g_{jV} > 0]\!]$. The overall votes for the virtual label are also obtained:

$$\zeta^*(\mathbf{x}, y_V) = \sum_{j=1}^{q} [\![g_{jV} \leq 0]\!]. \tag{19}$$

This value is used as a threshold to obtain the set of relevant labels, Y, for $\mathbf{x}$:

$$Y = \{y_j | \zeta^*(\mathbf{x}, y_j) > \zeta^*(\mathbf{x}, y_V), 1 \leq j \leq q\}. \tag{20}$$

Two stage methods: TSVM, TSCCM, and TSPCCM. The two-stage voting method (TSVM), two-stage classifier chain method (TSCCM), and two-stage pruned classifier chain method (TSPCCM) [10] are three variations of CLR with the aim of improving its performance and lowering its testing time. TSVM trains the same classifiers as the CLR method, g_{jk} and g_{jV}. At testing time, the classifier g_{jk} casts a vote only if both $g_{jV} > t$ and $g_{kV} > t$, where t is an arbitrary threshold. Otherwise, j receives a vote if $g_{jV} > t$ or k receives a vote if $g_{kV} > t$. The aim of this method is to evaluate as few classifiers as possible in the testing stage.

TSCCM operates in the same way at testing time. The only difference is when training pairwise classifiers j_{jk}. For these classifiers, the instances $\mathbf{x}_i$ are enriched with the outputs of the classifiers g_{kV}. Thus, instead of using $\mathbf{x}_i$ as the training instance, $\mathbf{x}'_i = (\mathbf{x}_i, g_{1V}(\mathbf{x}_i), \ldots, g_{qV}(\mathbf{x}_i))$ is used. Finally, TSPCCM uses a similar approach but with the difference that only the outputs of g_{jV} and g_{kV} are used as inputs to train classifier g_{jk}. Thus, for TSPCCM to train classifier g_{jk}, a training set $\mathcal{D}_{jk} = \{(\mathbf{x}_i, g_{jV}(\mathbf{x}_i), g_{kV}(\mathbf{x}_i)), 1 \leq i \leq p\}$ is used.

1.1.3. Multiclass approaches

Another method to convert a multilabel problem into a problem with a known solution is the multiclass approach. In this case, one or more multiclass classifiers are learned to address the multilabel problem. The label powerset method is the basic approach.

Label powerset (LP). LP [11] is a straightforward technique to convert the multilabel problem into a multiclass single label problem. First, a mapping, $\delta_{\mathcal{Y}}$, is created to transform every label power set into a natural number: $\delta_{\mathcal{Y}} : 2^{\mathcal{Y}} \to \mathbb{N}$. In the training stage, LP transforms the multilabel dataset $\mathcal{D}$ into a multiclass dataset $\mathcal{D}^{\dagger}_{\mathcal{Y}}$:

$$\mathcal{D}^{\dagger}_{\mathcal{Y}} = \{(\mathbf{x}_i, \delta_{\mathcal{Y}}(Y_i)) | 1 \leq i \leq p\}. \tag{21}$$

The set of classes in $\mathcal{D}^{\dagger}_{\mathcal{Y}}$, $\Gamma(\mathcal{D}^{\dagger}_{\mathcal{Y}})$ is bounded by the number of instances and labels: $|\Gamma(\mathcal{D}^{\dagger}_{\mathcal{Y}})| \leq \min(p, 2^q)$. A multiclass method is used to construct a classifier $g^{\dagger}_{\mathcal{Y}} : \mathcal{X} \to \Gamma(\mathcal{D}^{\dagger}_{\mathcal{Y}})$. A query instance, $\mathbf{x}$, is fed into this classifier and its prediction, $g^{\dagger}_{\mathcal{Y}}(\mathbf{x})$, is decodified to obtain the final relevant label set:

$$Y = \delta^{-1}_{\mathcal{Y}} \left(g^{\dagger}_{\mathcal{Y}}(\mathbf{x}) \right). \tag{22}$$

Pruned sets and pruned sets with a threshold (PS and PPT). The previous method has two major problems. Firstly, the number of classes grows exponentially with the number of labels. Secondly, at testing time, it cannot predict a combination of labels that is not already present in the training set. The pruned sets method (PS) [12] addresses these problems. It removes examples with P-infrequent labelsets from the training data, and then subsamples these labelsets N times to produce N new examples with P-frequent labelsets. Then, it trains a standard LP classifier. The idea is to reduce the number of unique class values that would otherwise need to be learned by LP. The method was also proposed by the authors to be used as an ensemble member, constructing ensembles of pruned sets (EPS) where the final prediction is obtained by voting with a certain threshold instead of majority voting.

There are also three proposed variants of this method [13], which are called pruned problem transformation (PPT) methods. In the basic PPT method, the powersets that are not frequent enough, i.e., below a threshold x, are just discarded. A second version, PPT-n (PPT with no information loss), splits the removed combination subset, S_i, into n sub-subsets $S_{i0}, S_{i1}, \ldots, S_{in}$, where these sub-subsets occur more than x times in the training

data. The method first takes the largest possible subset S_{i1}, and then the largest subset S_{i2} which does not contain any elements of S_{i1}, until we are left with an empty set. This method is similar to PS but uses a different method for using discarded instances. Finally, PPT-c was proposed wherein instead of using just the powerset predicted by the single label label classifier, the top k predictions are combined using a voting scheme.

Random k-labelsets (RAkEL). RAkEL [11] algorithm is to transform the multilabel learning problem into an ensemble of multiclass classification problems, where each component in the ensemble targets a random subset of labels using the label powerset technique. The method tries to avoid the large number of classes when using LP by addressing small random subsets of labels. The key strategy is to invoke LP only on random k-labelsets ($k \ll |Y|$) to guarantee computational efficiency, and then ensemble a number of LP classifiers to achieve predictive completeness. In this way, multiclass problems of 2^k classes are learned instead of problems with $2^{|Y|}$ classes.

Two versions of RAkEL are described. The first version does not allow for an overlap between the groups when creating the label sets and is called RAkEL disjoint (RAkELd). The second version allows for overlapping between the labels in the created labelsets and it is called RAkEL overlapping (RAkELo). This gives the advantage for the same label to be included by different LP models. There are two hyperparameters to be tuned: the size of the labelsets k and the number of models m.

Hierarchy Of multilabel classifiERs (HOMER). HOMER [14] is an algorithm for effective and computationally efficient multilabel learning in domains with a large number of labels. HOMER constructs a hierarchy of multilabel classifiers, each one dealing with a much smaller set of labels compared to q (the total number of labels) and a more balanced example distribution. One of the main processes within HOMER is the even distribution of a set of labels into k disjoint subsets, so that similar labels are placed together and dissimilar apart.

HOMER follows the divide-and-conquer paradigm of algorithm design. The main idea is the transformation of a multilabel classification task with a large set of labels L into a tree-shaped hierarchy of simpler multilabel classification tasks, each one dealing with a small number $k \ll |L|$ of labels. Each node n of this tree contains a set of labels $L_n \subseteq L$. There are $|L|$ leaves, each one containing a singleton (single element set) $\{\lambda_j\}$ with a different label λ_j of L. Each internal node n contains the union of the labelsets of its children. The root contains all labels. The method defines the concept of a metalabel of a node n, μ_n, as the disjunction of the labels contained in that node, $\mu_n \bigvee \equiv \lambda_j, \lambda_j \in L_n$. Metalabels have the following semantics: a training example can be considered annotated with metalabel μ_n if it is annotated with at least one of the labels in L_n. Each internal node of the hierarchy also contains a multilabel classifier h_n. The task of h_n is the prediction of one or more of the metalabels of its children. Therefore, the set of labels for h_n is $M_n = \{\mu_c | c \in \text{children}(n)\}$.

The main issue in this process is how to distribute the labels of L_n to the k children. The authors argue that labels should be evenly distributed to k subsets in a way such that labels belonging to the same subset are as similar as possible. Such a task can be thought of as clustering with the additional constraint of equal cluster size. Thus, three versions of HOMER were defined: HOMER-R uses a random partitions of labels, HOMER-K uses a k-means algorithm where the labels are represented as a point defined by their presence/absence in the relevant set of each instance, and HOMER-B where the standard k-means algorithm is modified to force an even distribution of points in the clusters.

ML-TREE and ML-FOREST. ML-TREE and ML-FOREST [15] explicitly exploit label dependency for multilabel classification. In ML-TREE, a set of hierarchical trees are constructed to learn the label dependency, and then they are combined as an ensemble to perform multilabel prediction. The algorithm aims to find a hierarchical structure so that two relevant instances with strong label dependency will be located in the same node of the tree. To achieve that, a tree generation algorithm to partition the learning data into smaller subsets is designed.

The algorithm trains multiclass classifiers at each node to divide the data into child nodes. Here, each data instance is partitioned into one child node according to the classifier prediction results, and the class label with highest probability given at the node is considered as its relevant label. For the second task of the algorithm, a label transfer mechanism is involved to recursively propagate the relevant labels from the root down to the leaf nodes.

This is an ML-TREE. A combination of ML-TREEs trained on bootstrapped samples of the dataset constitutes an ML-FOREST. The prediction of an ML-FOREST is carried out using a voting mechanism combined with a set threshold. However, the authors also proposed a *maximum cut (MCut)* method to automatically set the threshold from the data. We named the version that uses the MCut algorithm ML-FOREST(MC).

1.2. Algorithm adaptation methods

In this section, we provide a brief description of all the algorithm adaptation methods used in the comparison. This approach adapts known single label methods to address the multilabel problem without modifying the problems being solved.

1.2.1. Nearest neighbor-based approaches

Several methods have been developed based on the concept of the nearest neighbors rule.

Multilabel k-nearest neighbor (ML-kNN). The ML-kNN method [16] adapts the well-known k-nearest neighbor method to ML problems. A maximum a posteriori rule is used to predict the relevant labels of an unseen instance and perform label ranking. For a query instance, $\mathbf{x}$, the set of k nearest neighbors, $N(\mathbf{x})$, is obtained. For each class label j, C_j represents the number of neighbors with label y_j:

$$C_j = \sum_{(\mathbf{x}^*,Y^*)\in N(\mathbf{x})} [\![y_j \in Y^*]\!]. \tag{23}$$

Let H_j be the event in which y_j labels belong to the set of relevant labels of $\mathbf{x}$. $\mathbb{P}(H_j|C_j)$ represents the posterior probability that H_j holds under the condition that $\mathbf{x}$ has exactly C_j neighbors with label y_j. The MAP rule states that y_j is relevant if $\mathbb{P}(H_j|C_j) > \mathbb{P}(\neg H_j|C_j)$. Using the Bayes theorem, we need to estimate the prior probability of H_j, $\mathbb{P}(H_j)$:

$$\mathbb{P}(H_j) = \frac{s + \sum_{i_1}^{p} [\![y_j \in Y_i}{s \times 2 + p}, (1 \leq j \leq q). \tag{24}$$

s is a smoothing parameters usually set to 1 for Laplace smoothing. The method calculates the number of neighbors of $\mathbf{x}$ with label y_j, $\delta_j(\mathbf{x})$. With this value, two frequency arrays are obtained:

$$\begin{aligned} \kappa_j[r] &= \sum_{i=1}^{p} [\![y_j \in Y_i]\!] \cdot [\![\delta_j(\mathbf{x}) = r]\!] (0 \leq r \leq k) \\ \tilde{\kappa}_j[r] &= \sum_{i=1}^{p} [\![y_j \notin Y_i]\!] \cdot [\![\delta_j(\mathbf{x}) = r]\!] (0 \leq r \leq k). \end{aligned} \tag{25}$$

With this, we can estimate the likelihood that $\mathbf{x}$ has exactly C_j neighbors with label y_j, $\mathbb{P}(C_j|H_j)$, and conversely $\mathbb{P}(C_j|\neg H_j)$:

$$\begin{aligned} \mathbb{P}(C_j|H_j) &= \frac{s + \kappa_j[C_j]}{s \times (k+1) + \sum_{r=0}^{k} \kappa_j[r]}, (1 \leq j \leq k, 0 \leq C_j \leq k) \\ \mathbb{P}(C_j|\neg H_j) &= \frac{s + \tilde{\kappa}_j[C_j]}{s \times (k+1) + \sum_{r=0}^{k} \tilde{\kappa}_j[r]}, (1 \leq j \leq k, 0 \leq C_j \leq k) \end{aligned} \tag{26}$$

Finally, using Bayes theorem, we can obtain $\mathbb{P}(H_j|C_j)$ and $\mathbb{P}(H_j|\neg C_j)$.

Locally adaptive multilabel k-nearest neighbor (LAML-kNN). LAML-kNN [17] is a simple modification of the ML-kNN method. The algorithm modifies the expression for the posterior probability to account for the fact that in real world datasets, the instances with (or without) label l from different locations may have different numbers of neighbors with the label l. LAML-kNN separates the training instances into m clusters. These clusters are subsequently used for obtaining the number of neighbors with the label l and the posterior probability.

Fuzzy ROugh NEighborhood Consensus (FRONEC). To classify an instance, FRONEC [18] derives a consensus among the labelsets of the nearest neighbors based on fuzzy rough set theory. This mathematical framework captures data uncertainty and offers a way to extract a labelset from the dataset that summarizes the information contained in the labelsets of the neighbors.

Multilabel classification using rough sets (MLRS) and MLRS using local correlation (MLRS-LC). MLRS and MLRS-LC [19] algorithms are based on variable-precision neighborhood rough sets. The algorithms consider two important factors that affect the Ranking-loss of prediction, namely, the correlation among the labels and the uncertainty that exists within the mapping between the feature space and the label space. MLRS provides a global view at the label correlation, while MLRS-LC deals with the label correlation at the local level. Given a new instance, MLRS determines its location and then computes the probabilities of labels according to its location. MLRS-LC first determines its topic and then the probabilities of a new instance belonging to each class is calculated in the related topic.

Dependent multilabel k-Nearest neighbor (DML-kNN). DML-kNN [20] is derived from a Bayesian version of the k-nearest neighbor rule that takes into account the dependencies between labels. The ML-kNN approach assigns a set of labels to a new instance with a decision that is made separately for each label. Thus, this method fails to take into account the possible dependencies between labels. DML-kNN is a generalization of the ML-kNN-based approach to multilabel classification problems where the dependencies between classes are considered. For each unseen instance, it identifies its k nearest neighbors in the training set. According to the class membership of neighboring instances, a global maximum a posteriori principle (MAP) is used in order to assign a set of labels to the new unseen instance. In a different manner from ML-kNN, and in order to decide if one should include a label into the set of labels of the instance, the global MAP rule takes into account the numbers of all labels in the neighborhood instead of taking only the number of neighbors of the label to be assigned.

Fuzzy Veristic kNN (FV-kNN). FV-kNN [21] is a fuzzy k-nearest neighbor method for multilabel classification using the veristic variable framework. In multilabel learning tasks, the class label of each instance can be considered as a veristic variable. FV-kNN uses the approximate reasoning framework for veristic variables in order to represent and combine knowledge about an unseen object and predict the corresponding set of labels. Each neighbor gives some information about the object being classified according to the distance between the two patterns. In addition, due to the fact that the veristic framework is based on the fuzzy set theory, and labelsets of commonly multilabeled data are crisp sets, it uses a technique to fuzzify class membership of training data and transform the crisp labelsets into fuzzy ones.

Multilabel concise distance-weighted k-nearest neighbors (MLC-DWkNN). The distance-weighted k-NN method [22] weights the instances nearby more heavily than those farther away. MLC-DWkNN [23] extends the same concept to multilabel classification. MLC-DWkNN uses the majority voting strategy to decide the relevant labels of $\mathbf{x}$:

$$y_j = \begin{cases} +1, & \text{if } f_j(\mathbf{x}) \geq 0 \\ -1, & \text{otherwise.} \end{cases} \tag{27}$$

The method considers all labels independently and defines the following discriminant function:

$$f_j(\mathbf{x}) = \sum_{i=1}^{k} w_i \bar{y}_{ij} = \sum_{i=1,\bar{y}_{ij}=+1}^{k} w_i \bar{y}_{ij} - \sum_{i=1,\bar{y}_{ij}=-1}^{k} -w_i \bar{y}_{ij}. \tag{28}$$

For the classical DWkNN for multiclass classification, several analytical distance-based weighting functions have been constructed, whose basic characteristic is that a neighbor with a small distance should be weighted more heavily that one at a large distance. We consider three different versions of the method depending on the distance function used: the one proposed by Dudani [22]–MLC-DWkNN.D; the one proposed by Macleod *et al.* [24]–MLC-DWkNN.M; and the one proposed by Zavrel [25]–MLC-DWkNN.Z.

Soft Relevance for multilabel Classification (Mr.KNN). Mr.KNN [26] combines a fuzzy c-means algorithm with a voting mechanism based on the k-nearest neighbors of every sample. The method introduces a new strategy called soft relevance, where each multilabel example is assigned a relevance score to the labels it belongs to. This soft relevance is then employed in a voting function used in a k-nearest neighbor classifier. A voting-margin ratio is introduced to the k-nearest neighbor classifier for better performance.

Stacked multilabel k-nearest neighbor (SML-kNN). SML-kNN [27] is a two layer stack-like approach. The first layer predicts the probability of the labels as in ML-kNN, whereas the second layer takes the predicted probabilities of each label from the first layer and revises these predictions to take into account associations with predictions for other labels.

The original dataset, $\mathcal{D}^{(1)} = \{(\mathbf{x}_i, Y_i)|1 \leq i \leq p\}$, is used in the first layer. A dataset $\mathcal{D}^{(2)}$ for the second layer is generated from $\mathcal{D}^{(1)}$ using the first layer. For each instance, $\mathbf{x}_i \in \mathcal{D}^{(1)}$, the predicted probability of relevance, $p(\hat{y}_i)$, for each label is found based on the training set. The second layer dataset is constructed as $\mathcal{D}^{(2)} = \{(p(\hat{y}_i), y_i)|1 \leq i \leq p\}$. Essentially, the predicted probability of the training set based on the training set itself is taken as the input space of the second level. Therefore, in the second level, each target label is made dependent on all the other labels. The second layer also uses ML-kNN to perform the final prediction.

Instance-based logistic regression for multilabel problems (IBLR-ML and IBLR-ML+). IBLR-ML and IBLR-ML+ [28] are based on a framework that unifies instance-based learning and logistic regression, comprising both methods as special cases. This approach allows the capture of interdependencies between labels and, moreover, to combine model-based and similarity-based inference for multilabel classification. The authors proposed using instance-based learning as logistic regression considering the labels of neighbored instances as features of the query instance whose label is to be estimated. A second method, IBLR-ML+, also uses the query instance, $\mathbf{x}$, as input to the model. The method combines an instance-based and binary model-based approach and could be considered almost a hybrid between algorithm adaptation and problem transformation methods.

As an additional instance-based method, in the experiments, we also compared the above methods with binary relevance k-nearest neighbors (BR-kNN) [29], which is a binary relevance approach to multilabel classification that uses a separate k-nearest neighbor (k-NN) model for each label independently. This means running the k-NN process q times, once for each label. Spyromitros *et al.* [29] showed how efficiency can be gained with respect to execution time by using a shared similarity matrix across the different k-NN processes.

1.2.2. Twin multilabel Support Vector Machine (MLTSVM)

MLTSVM [30] tries to fit multiple nonparallel hyperplanes to the data to capture the multilabel information embedded in the data. It follows the Twin SVM concept [31], where (in the binary classification case) one tries to find two nonparallel hyperplanes such that each one is closer to its class, but it is further than the others. In the training phase, this method constructs multiple nonparallel hyperplanes to exploit the multilabel information via solving several quadratic programming problems using fast procedures. The prediction is obtained by calculating the distance of the test sample to the different hyperplanes. The hyperparameters of the method are the threshold above which a label is assigned, the empirical risk penalty (which determines the trade-off between the loss terms in the loss function), and a regularization parameter.

1.2.3. Tree-based approaches

The decision trees have been adapted to multilabel problems in different ways. We consider three versions that are described in the following.

Multilabel decision tree (ML-DT). ML-DTs adapt the decision tree technique used for single label datasets to the multilabel case. The method reported here is based on multilabel entropy [32]. Given a training set T with n samples at a certain node tree, the information gain obtained from dividing the data along l-th feature at the splitting value ϑ is:

$$IG(T, l, \vartheta) = MLEnt(T) - \sum_{\rho \in \{-,+\}} \frac{|T^\rho|}{|T|} MLEnt(T^\rho), \tag{29}$$

where

$$\begin{aligned} T^- &= \{(\mathbf{x}_i, Y_i) | x_{il} \leq \vartheta, 1 \leq i \leq p\}, \\ T^+ &= \{(\mathbf{x}_i, Y_i) | x_{il} > \vartheta, 1 \leq i \leq p\}. \end{aligned} \tag{30}$$

As in the standard single label DT, the method proceeds by identifying for the root node the split that maximizes the information gain and then continuing recursively for each child node until a certain stopping criterion is met. To apply the criterion, we need a way to calculate the multilabel entropy $MLEnt$. The most straightforward approach may use same philosophy of the label powerset. Every subset $Y \in \mathcal{Y}$ is treated as a new class and single label entropy is used:

$$\widehat{MLEnt}(T) = -\sum_{Y \subseteq \mathcal{Y}} \mathbb{P}(Y) \cdot \log_2(\mathbb{P}(Y)), \tag{31}$$

where $\mathbb{P}(Y) = \frac{\sum_{i=1}^{p} [\![Y_i = Y]\!]}{p}$. However, as was the case for LP method, the number of new classes grows exponentially with q and many of them may not be present in T; thus, $\mathbb{P}(Y) = 0$ and the estimated entropy has no experimental value. A way to address this problem is assuming independence among labels and decomposing the multilabel entropy:

$$MLEnt(T) = -\sum_{j=1}^{q} -p_j \log_2(p_j) - (1 - p_j) \log_2(1 - p_j), \tag{32}$$

where $p_j = \frac{\sum_{i=1}^{n} [\![y_j \in Y_i]\!]}{n}$. At testing time, for a query instance $\mathbf{x}$, the tree is traversed, and p_j being the probability of label y_i at the leaf node, the following relevant label set is returned:

$$Y = \{y_j | p_j > 0.5, 1 \leq j \leq q\}. \tag{33}$$

Decision tree-based methods are a good target for ensembles of classifiers as they have been repeatedly tested for single label methods. Thus, we also compared multilabel random forest (ML-RF) and extremely randomized forest (ExML-DT) using ML-DTs as the basic element and the standard way of constructing both ensembles of trees.

Predictive clustering trees (PCT). PCTs [33] are decision trees that view the data as a hierarchy of clusters. A predictive clustering tree (PCT) is a nonoverlapping hierarchical clustering of the whole input space. Each node (subtree) corresponds to a clustering of a subspace and prediction functions are placed in the leaves, i.e., the lowest clusters in the hierarchy. At the top node, all data samples belong to the same cluster. This cluster is recursively partitioned into smaller clusters, such that the variance (impurity measure) is reduced. The variance

function and the prototype function are selected for the task at hand. In the case of multilabel classification, the variance function is computed as the sum of the Gini indices of the labels.

We also compared multilabel random forest (RFPCT) and extremely randomized forest (ExPCT) using PCTs as the basic element and the standard way of constructing both ensembles of trees.

Option Predictive Clustering Trees (OPCT). OPCT [34] extends the PCT framework by introducing option nodes into the tree building procedure. Multilabel OPCTs [35] extend this paradigm to the multilabel case. An option tree can be viewed as a compact representation of an ensemble, and used as a pool of candidates from which a single tree can be extracted. An OPCT allows the construction of an overlapping hierarchical clustering. This means that, at each node of the tree, several alternative hierarchical clusterings of the subspace can appear instead of a single one. In standard DTs, all possible splits are evaluated by using a heuristic, and the best split is selected. However, other splits may have very similar heuristic values and the difference between them could be a consequence of noise or sampling that generated the data. In this case, selecting a different split could be optimal; OPCTs proposed the use of option nodes to address this issue.

1.2.4. Neural networks-based approaches

As is the case for single label problems, neural networks can be used for learning multilabel datasets. In this section, we discuss five different approaches that use a neural network as the main tool.

Backpropagation algorithm (BASICBP). The standard backpropagation algorithm (BASICBP) following Zhang and Zhou [36]) can be extended to multilabel problems. Since the goal of multilabel learning is to predict the labelsets of unseen instances, an intuitive way to define the global error of the network on the training set could be

$$E = \sum_{i=1}^{q} E_i \tag{34}$$

where E_i is the error of the network on $\mathbf{x}_i$, which could be defined as:

$$E_i = \sum j = 1^q (c_i^j - d_i^j), \tag{35}$$

where $c_i^j = c_j(\mathbf{x}_i)$ is the actual output of the network on $\mathbf{x}_i$ on the jth class and d_i^j is the desired output of $\mathbf{x}i$ on the j-th class, which takes the value of either +1 ($j \in Y_i$) or -1 ($j \notin Y_i$). The backpropagation algorithm can be used to learn from this intuitive global error function. However, this error function concentrates only on individual label discrimination, i.e., whether a particular label $j \in Y$ belongs to the instance $\mathbf{x}_i$ or not; it does not consider the correlations between the different labels, e.g., labels in Y_i should be ranked higher than those not in Y_i.

Backpropagation for Multilabel Learning (BPMLL). BP-MLL [36] is derived from the popular backpropagation algorithm through employing a novel error function capturing the characteristics of multilabel learning, i.e., the labels belonging to an instance should be ranked higher than those not belonging to that instance. BPMLL is developed as a modification of the standard backpropagation algorithm to take into account label correlations. A detailed description is given by Zhang and Zhao [36]. We also used a deep learning neural network with three layers using cross-entropy as the loss function. This method is termed DL in the experiments.

MultiLabel ARAM network (MLARAM). MLARAM [37, 38] is an extension of adaptive resonance associative map neural fuzzy networks. ARAM networks for supervised learning consist of two self-organizing maps sharing the same output neurons. The first self-organizing map tries to encode the input space into prototypes, while simultaneously trying to characterize the prototypes with a mapping encoding the labels. A parameter called vigilance is used to control the specificity of the prototypes. MLARAM is an extension of ARAM in such a way that it allows flexibility in determining when a particular node is activated, taking into consideration label

dependencies. The output predictions may vary due to the order in which training examples are presented. The flexibility of inclusion depends on a threshold parameter. The parameters to be tuned are vigilance and threshold.

This method aims to increase the classification speed by adding an extra ART layer for clustering learned prototypes into large clusters. In this case, the activation of all prototypes can be replaced by the activation of a small fraction of them, leading to a significant reduction in the classification time.

1.3. Ensembles of classifiers

The term ensemble of classifiers is less clear in multilabel learning, as many methods involve the combination of the output of different classifiers, such as RAkEL or HOMER. However, we consider ensembles of classifiers to be such methods that are closest to bagging and boosting in their standard single label approach. In order to avoid confusion, we use the term ensemble when there is a combination of classifiers and each independent classifier addresses the whole multilabel problem. We do this in order to differentiate ensembles from other combinations of classifiers, such as RAkEL or HOMER.

1.3.1. Bagging

Bagging can be applied to ML learning in a straightforward manner: just by randomly sampling a new training set with a replacement for every new classifier. For a number of steps M at every step m, a new training set $T_m t$ is obtained from T by means of random sampling with replacement, $T_m \subset T$. The new classifier is trained with T_m and added to the ensemble. The combination is made using simple voting where the threshold for considering a label relevant is usually set by resubstitution or cross-validation. In the experiments, we produced results using the bagging method with different multilabel base methods.

1.3.2. Adaboost.MH

The AdaBoost.MH [39] method introduces a set of weights maintained both on the examples (as in the classical AdaBoost method) and on the labels. The formula for calculating the weights incorporates the example-label pairs that are missclassified by the base classifier. At each iteration, the method builds a simple classifier (e.g., decision stump–a decision tree of depth 1). The classifier uses weights to focus more on the examples that are hard to predict. The base classifier should provide confidences, which are used to obtain a prediction. The final prediction is obtained by combining the confidences of each of the base models, weighted by the corresponding model weights. The parameter of the method is the number of boosted decision trees. This method is the same as applying AdaBoost to q binary datasets, as in BR.

The authors present a version of AdaBoost.MH with discrete predictions when the binary methods outputs discrete $\{-1, +1\}$ values: Discreta ADaBoost.MH, and another version when the binary classifier outputs a continuous prediction $c \in [-1, +1]$: Real AdaBoost.MH.

2. Evaluation metrics

The evaluation of multilabel classification methods is relatively difficult because the prediction result for an instance is a set of labels, and the result can be fully correct, partially correct (with different levels of correctness), or fully incorrect [2, 40]. Thus, many different metrics for correctness have been proposed [1]. The metrics can be divided into two major groups: *example-based* (EB) metrics and *label-based* (LB) metrics. The former group evaluates the learning system for each instance (example) separately and then obtains a unique measure for the average value across the test set. The latter group obtains the performance of the learning system for each class label separately and then returns a unique measure by means of macro/microaveraging across all class labels. Furthermore, the metrics can asses classification (using $h(\cdot)$) or ranking (using $f(\cdot)$) results. As stated above, this paper is only devoted to the study of the behavior of the algorithms from the point of view of ranking.

There are many metrics defined in the literature [1]. Among them, we chose the following metrics to compare the results of the studied models. They offer a comprehensive set of measures that evaluate the performance from different points of view.

2.1. Example-based metrics

Four label based metrics can be defined from the ranking function $f(\cdot,\cdot)$, where $f(\mathbf{x},y)$ is the confidence of y being a relevant label of $\mathbf{x}$:

1. *One-error* evaluates the fraction of examples whose top-ranked label is not in the relevant label set:

$$\text{one-error}(f) = \frac{1}{p}\sum_{i=1}^{p}[\,\left[\arg\max_{y\in\mathcal{Y}} f(\mathbf{x}_i,y)\right] \notin Y_i]. \tag{36}$$

   The metric is in the interval $[0,1]$ with an optimum value of 0.
2. *Coverage* evaluates how many steps are needed, on average, to move down the ranked list so as to cover all the relevant labels of a sample:

$$\text{coverage}(f) = \frac{1}{p}\sum_{i=1}^{p}\max_{y\in Y_i} rank_f(\mathbf{x}_i,y) - 1. \tag{37}$$

   The metric is in the interval $[\frac{1}{p}\sum_{i=1}^{p}|Y_i| - 1, q]$, where smaller values are better than larger ones.
3. *Ranking loss* evaluates the fraction of reversely ordered label pairs, i.e. an irrelevant label ranked above a relevant label:

$$\text{rloss}(f) = \frac{1}{p}\sum_{i=1}^{p}\frac{1}{|Y_i||\bar{Y}_i|}\left|\{(y',y'')|f(\mathbf{x}',y') \le f(\mathbf{x}_i,y''),(y',y'')\in Y_i\times\bar{Y}_i\}\right|. \tag{38}$$

   The metric is in the interval $[0,1]$ with an optimum value of 0.
4. *Average precision* evaluates the average fraction of relevant labels ranked higher that a particular lable $y \in Y_i$:

$$\text{avgprec}(f) = \frac{1}{p}\sum_{i=1}^{p}\frac{1}{|Y_i|}\sum_{y\in Y_i}\frac{|\{y'|rank_f(\mathbf{x}_i,y') \le rank_f(\mathbf{x}_i,y), y'\in Y_i\}|}{rank_f(\mathbf{x}_i,y)}. \tag{39}$$

   The metric is in the interval $[0,1]$ with an optimum value of 1.

2.2. Label-based metrics

For label-based metrics we can obtain an AUC metric, either micro or macro-averaged:

- *AUC macro-averaged* is defined as:

$$\text{AUC}_{\text{macro}} = \frac{1}{p}\sum_{j=1}^{p}\text{AUC}_j, \tag{40}$$

  where:

$$\text{AUC}_j = \frac{\left|\{(\mathbf{x}',\mathbf{x}'')|f(\mathbf{x}',y_j) \ge f(\mathbf{x}'',y_j),(\mathbf{x}',\mathbf{x}'')\in\mathcal{Z}_j\times\bar{\mathcal{Z}}_j\}\right|}{|\mathcal{Z}||\bar{\mathcal{Z}}|}, \tag{41}$$

  where $\mathcal{Z}_j = \{\mathbf{x}_i|y_j\in Y_i, 1\le i\le p\}(\bar{\mathcal{Z}}_j = \{\mathbf{x}_i|y_j\notin Y_i, 1\le i\le p\})$ corresponding with the instances with (without) label Y_i.

- *AUC micro-averaged* is defined as:

$$\mathrm{AUC}_{\mathrm{micro}} = \frac{|\{(\mathbf{x}', \mathbf{x}'', y'.y'') | f(\mathbf{x}', y') \geq f(\mathbf{x}'', y''), (\mathbf{x}', y') \in \mathcal{S}^+, (\mathbf{x}'', y'') \in \mathcal{S}^-\}|}{|\mathcal{S}^+||\mathcal{S}^-|}, \tag{42}$$

  where $\mathcal{S}^+ = \{(\mathbf{x}_i, y) | y \in Y_i, 1 \leq i \leq p\} (\mathcal{S}^- = \{(\mathbf{x}_i, y) | y \notin Y_i, 1 \leq i \leq p\})$ corresponds to the set of relevant (irrelevant) instance-label pairs.

Both metrics are defined in $[0, 1]$ with an optimum value of 1.

3. Datasets

Table 2: Description of the datasets.

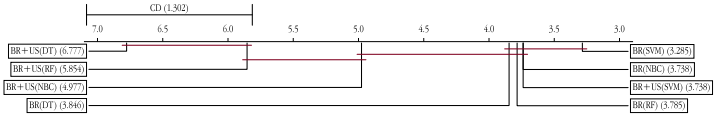
	Dataset	Instances	Inputs	Labels	Cardinality	Density	Diversity	Proportion of distinct labels	MeanIR	CVIR
1	20NG-F	19300	32001	21	1.41	0.0673	337.0	0.0265	64.4169	1.5398
2	3s-bbc1000	352	271	19	1.86	0.0981	132.0	0.3761	5.4070	0.8169
3	3s-guardian1000	302	1836	159	2.40	0.0151	1654.0	0.2237	12.4983	0.4051
4	3s-reuters1000	294	1000	6	1.13	0.1876	14.0	0.0476	1.7891	0.3130
5	bibtex	7395	1024	27	15.32	0.5676	1088.0	0.7624	4.5039	2.5060
6	birds	645	72	6	1.87	0.3114	27.0	0.0455	1.4781	0.1796
7	bookmarks	87856	52350	39	1.28	0.0328	361.0	0.0298	257.7044	2.3431
8	CAL500	502	68	174	26.04	0.1497	495.0	0.9861	20.5778	1.0871
9	corel16k001	13766	21924	30	1.60	0.0533	233.0	0.0208	880.1777	2.8112
10	Corel5k	5000	3091	12	1.08	0.0899	32.0	0.0327	6.6904	0.7123
11	delicious	16105	27534	33	1.46	0.0443	511.0	0.0425	168.1137	1.7756
12	emotions	593	500	983	19.04	0.0194	3936.0	0.2446	71.1338	0.7405
13	enron	1702	294	5	1.24	0.2472	20.0	0.0100	1.1935	0.1457
14	EukaryoteGO	7766	117	27	15.32	0.5676	1088.0	0.7624	4.5039	2.5060
15	EukaryotePseAAC	7766	1079	22	1.18	0.0537	156.0	0.0412	17.6931	2.4155
16	Eurlex-dc	19348	30605	32	1.64	0.0514	335.0	0.0364	653.5306	1.9399
17	Eurlex-sm	19348	30324	22	1.43	0.0650	530.0	0.0413	12.2030	1.3899
18	foodtruck	407	2150	208	2.03	0.0098	6932.0	0.0789	12.3080	0.4935
19	genbase	662	1001	53	3.38	0.0637	753.0	0.4424	73.9528	1.9596
20	GnegativeGO	1392	31	12	2.29	0.1908	116.0	0.2850	7.0945	0.6914
21	GnegativePseAAC	1392	1185	27	1.25	0.0464	32.0	0.0483	37.3146	1.4494
22	GpositivePseAAC	519	500	153	2.86	0.0187	1791.0	0.1301	34.1552	0.8088
23	HumanGO	3106	120	101	4.56	0.0451	3507.0	0.0832	256.4047	1.1749
24	HumanPseAAC	3106	1449	45	1.25	0.0277	94.0	0.0961	89.5014	1.1476
25	Image	2000	1001	28	1.92	0.0687	3449.0	0.0361	26.2919	1.4853
26	IMDB-ECC-F	95424	103	14	4.24	0.3026	198.0	0.0819	7.1968	1.8838
27	IMDB-F	120919	671	5	1.77	0.3539	31.0	0.0031	2.8756	0.9371
28	LLOG-F	1460	9844	14	1.19	0.0847	85.0	0.0274	15.2893	1.0850
29	mediamill	43907	37187	40	1.45	0.0362	457.0	0.0711	52.6318	1.6349
30	medical	978	12689	22	1.15	0.0521	112.0	0.0144	45.0117	1.4070
31	Music	592	499	373	3.52	0.0094	1453.0	0.2906	189.5676	1.5266
32	OHSUMED-F	13929	34096	33	1.51	0.0457	428.0	0.0344	176.6952	1.9062
33	PlantGO	978	440	22	1.15	0.0521	112.0	0.0144	45.0117	1.4070
34	PlantPseAAC	978	5000	412	1.29	0.0031	876.0	0.0453	268.9297	1.7302
35	rcv1subset1	6000	440	12	1.08	0.0899	32.0	0.0327	6.6904	0.7123
36	REUTERS-K500-EX2	6000	47236	101	2.88	0.0285	837.0	0.1395	54.4923	2.0806
37	scene	2407	1001	28	2.00	0.0714	4503.0	0.0372	25.1240	1.5102
38	sider_CDK_ECFP4	1427	1717	8	1.05	0.1307	19.0	0.0136	18.4476	1.3945
39	sider_MordredDesc	1427	440	8	1.05	0.1307	19.0	0.0136	18.4476	1.3945
40	sider_RDKit_desc	1427	440	4	1.01	0.2519	7.0	0.0135	3.8605	1.3310
41	SLASHDOT-F	3782	71	6	1.87	0.3117	27.0	0.0456	1.4796	0.1798
42	Stackex_chemistry	6861	294	6	1.07	0.1790	15.0	0.0062	1.2538	0.1222
43	Stackex_chess	1675	440	14	1.19	0.0847	85.0	0.0274	15.2893	1.0850
44	Stackex_coffee	225	1000	6	1.13	0.1876	14.0	0.0464	1.7733	0.3030
45	Stackex_cooking	10491	842	233	2.28	0.0098	1072.0	0.2708	68.7532	0.7989
46	Stackex_cs	9270	635	274	2.57	0.0094	1489.0	0.1613	85.0023	0.7596
47	Stackex_philosophy	3971	1002	23	1.66	0.0723	1147.0	0.0823	7.8692	0.8920
48	tmc2007-500	28596	39679	33	1.17	0.0356	275.0	0.0343	461.8628	2.0073
49	tox21_CDK_ECFP4	7831	540	175	2.11	0.0121	1452.0	0.2088	56.8779	0.8964
50	tox21_RDKit_desc	7831	585	227	2.42	0.0106	508.0	0.3038	85.7898	0.8167
51	VirusGO	207	1006	20	1.03	0.0514	55.0	0.0029	1.0073	0.0086
52	VirusPseAAC	207	1000	6	1.13	0.1875	15.0	0.0426	1.7182	0.2796
53	Water-quality	1060	5000	201	2.21	0.0110	1386.0	0.0717	536.9761	2.1355
54	Yahoo_Arts	7484	721	27	15.32	0.5676	1088.0	0.7624	4.5039	2.5060
55	Yahoo_Business	11214	1024	12	2.04	0.1701	394.0	0.1372	2.5573	0.5063
56	Yahoo_Computers	12444	440	6	1.22	0.2029	17.0	0.0821	4.0412	0.9068
57	Yahoo_Education	12030	117	12	2.04	0.1701	394.0	0.1372	2.5573	0.5063
58	Yahoo_Entertainment	12730	16	14	5.10	0.3644	824.0	0.7818	1.7671	0.3016
59	Yahoo_Health	9205	577	400	2.25	0.0056	1712.0	0.1653	37.8576	0.6513
60	Yahoo_Recreation	12828	23146	26	1.65	0.0636	599.0	0.0800	94.7379	3.8059
61	Yahoo_Reference	8027	1763	123	1.99	0.0162	149.0	0.6622	27.2415	0.5715
62	Yahoo_Science	6428	500	103	1.46	0.0142	618.0	0.1030	51.9805	1.9707
63	Yahoo_Social	12111	749	6	1.22	0.2029	17.0	0.0821	4.0412	0.9068
64	yeast	2417	1003	75	1.38	0.0183	278.0	0.2219	39.2669	1.3106
65	Yelp	10806	500	22	2.16	0.0981	1341.0	0.0469	15.1567	0.7633

4. Hyperparameters of the algorithms

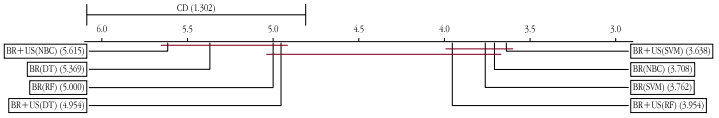
Table 3: Hyperparameters for the tested models.

Method	Hyper-parameter	Value
BASICMP	Hidden nodes	100
	η: learning coefficient	0.5
	α: momentum term	0.1
ECC, BECC	Ensemble size	10
BOOMER, MLARAM, MLTSVM	—	Implementation default
BPMLL	Hidden nodes	1,000
	α: learning coefficient	0.1
BR, CLR, DBR, LP, MCC, ML-DT, PCT, STA	None	
BRkNNa, BRkNNb	k: number of neighbors	10
CC, NS, NSSC, TSCCM, TSPCCM, TSVM	Method for obtaining the chains	Randomly
CDN	I: number of iterations	1,000
	I_c: number of collection iterations	100
CT	H: trellis width	-1 (square trellis)
	L: neighborhood density	1
Discrete AdaBoost.MH, Real AdaBoost.MH	Ensemble size	50
DL	First hidden layer nodes	100
	Second hidden later nodes	50
	Loss function	Binary cross-entropy
DML-kNN, FRONEC, FV-kNN, IBLR-ML, IBLR-ML+, MLC-DWkNN, ML-kNN, SML-kNN	k: Number of neighbors	10
EDT, EPCT, ExMLDT, ExPCT, ML-RF, RFPCT	Number of trees	100
ELP, EPS	Ensemble size	50
HOMER-B, HOMER-K, HOMER-R	k: powerset size	3
LAML-kNN	m: Number of clusters	10
	k: Number of neighbors	10
ML-FOREST	Number of trees	10
MLMLP	Hidden nodes	Inputs
MLRS, MLRS-LC	k: number of neighbors	10
	β	0.9
	s	1.0
ML-TREE	Maximum tree depth	5
	λ	0.5
MR.KNN	k: number of neighbors	10
	f: Minkowski exponent	2
NSR, PPT, PPT-c, PPT-n, SCC	p: minimum frequency	2
	N: maximum number of labalsets to subsample	2
OPCT	ϵ	0.1
	O: maximum number of options	10
	L: maximum level	2
PS	p: minimum frequency	2
RAkELd	m: number of classifiers	$\lceil q/k \rceil$
	k: size of powerset	3
RAkELo	m: number of classifiers	$2q$
	k: size of powerset	3

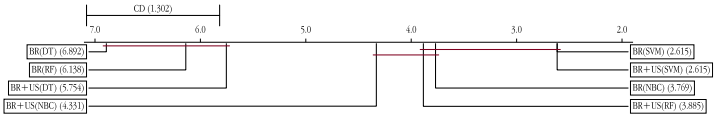
5. Additional figures



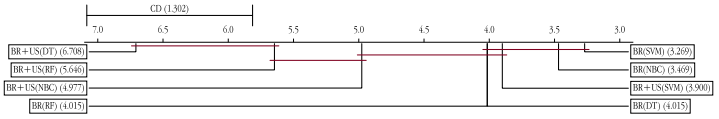
(a) One-error



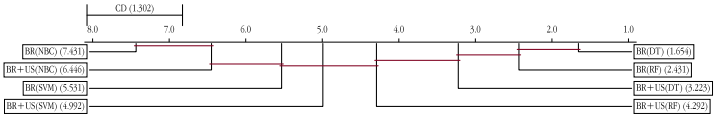
(b) Coverage



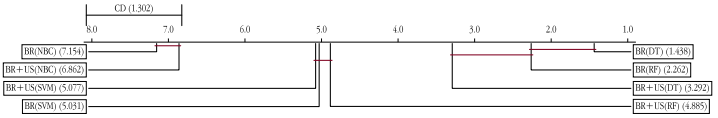
(c) Ranking-loss



(d) Average-precision



(e) AUC-macro

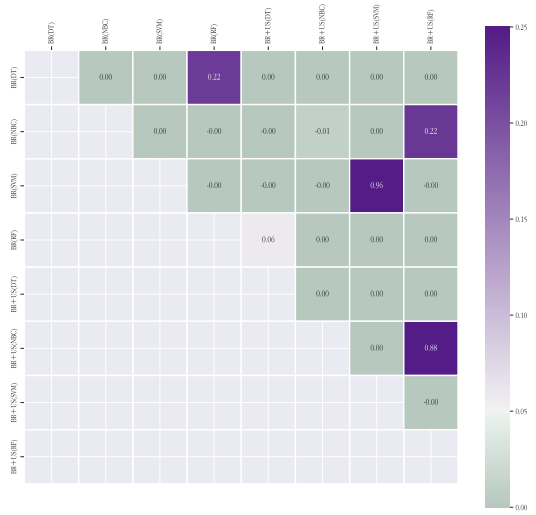


(f) AUC-micro

Figure 3: Nemenyi test for BR with different binary learners.

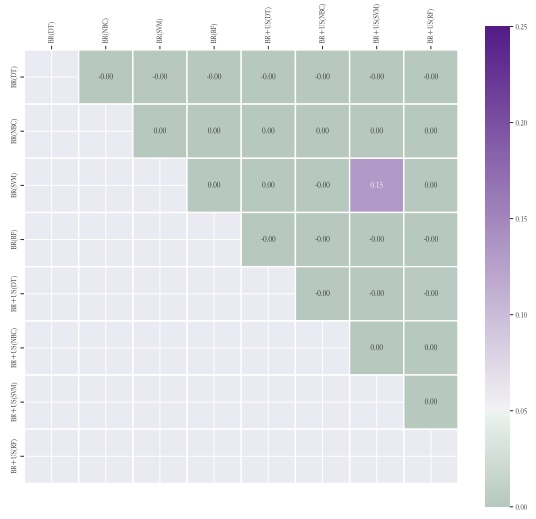
(a) One-error

(b) Coverage

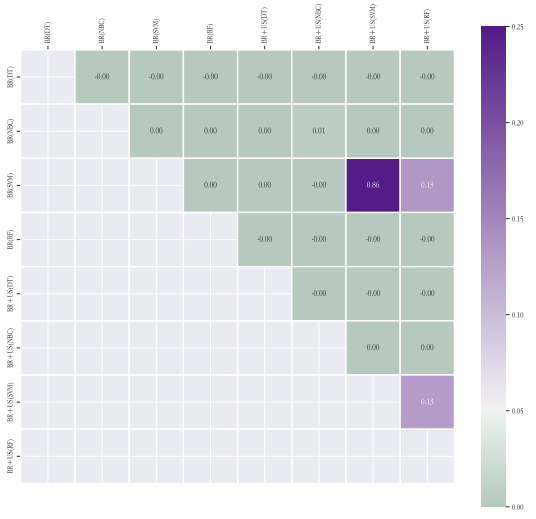


(c) Ranking-loss

(d) Average-precision

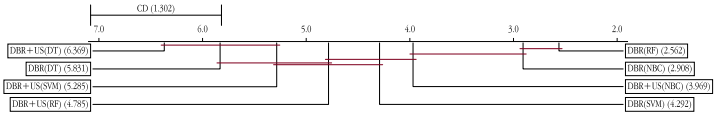


(e) AUC-macro

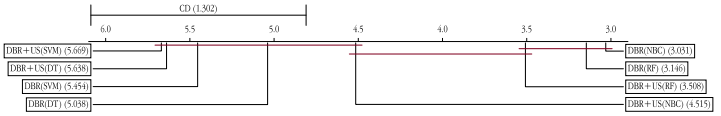


(f) AUC-micro

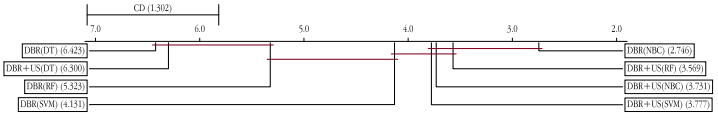
Figure 4: Wilcoxon test for BR with different binary learners.



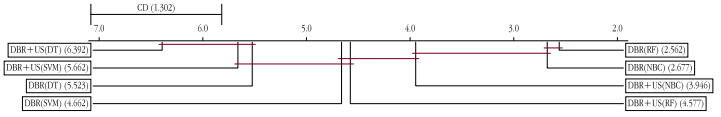
(a) One-error



(b) Coverage



(c) Ranking-loss



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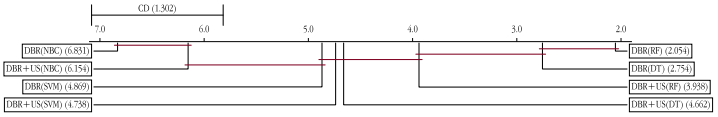
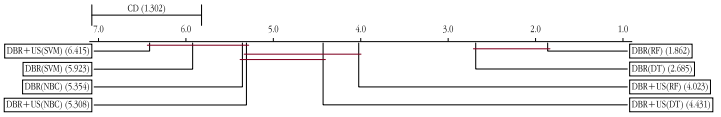


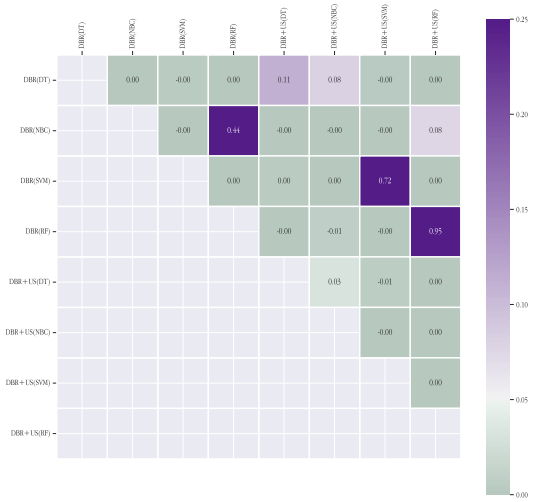
(e) AUC-macro



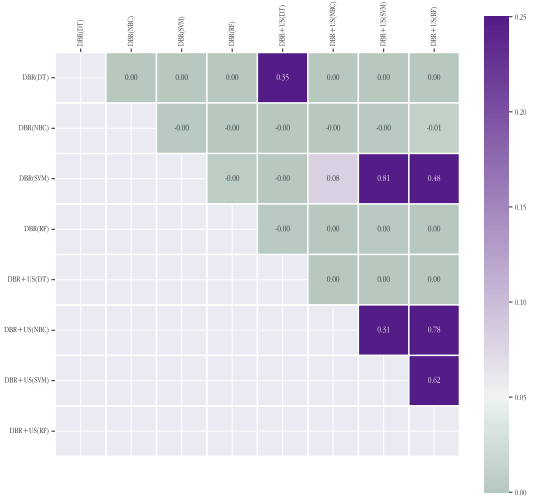
(f) AUC-micro

Figure 5: Nemenyi test for DBR with different binary learners.

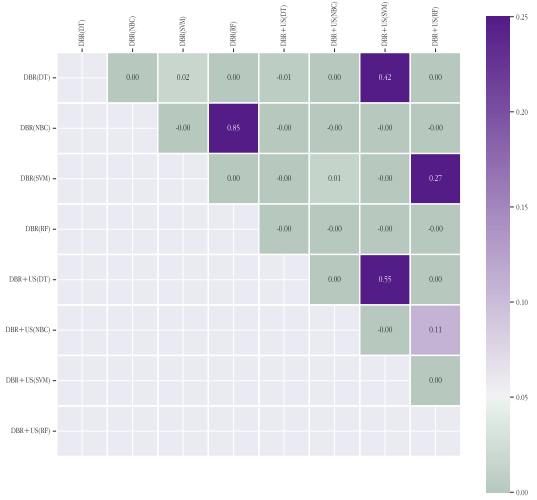
(a) One-error



(b) Coverage



(c) Ranking-loss

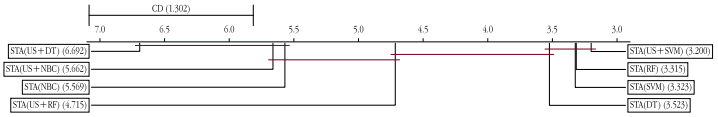


(d) Average-precision

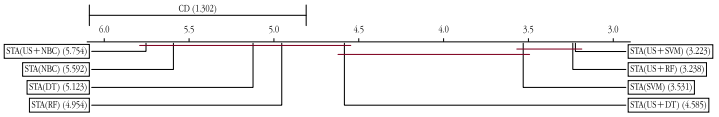
(e) AUC-macro

(f) AUC-micro

Figure 6: Wilcoxon test for DBR with different binary learners.



(a) One-error



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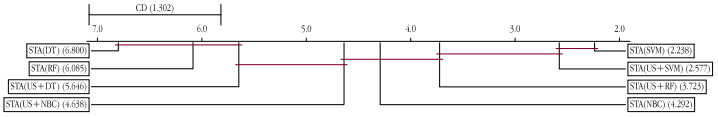
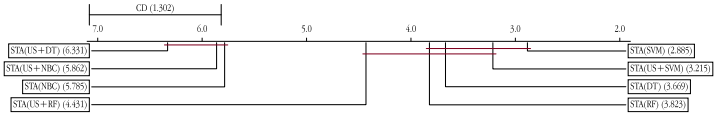
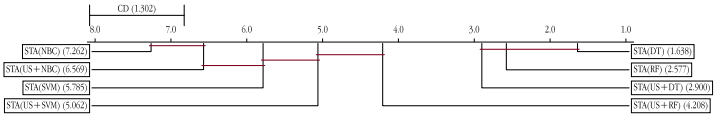


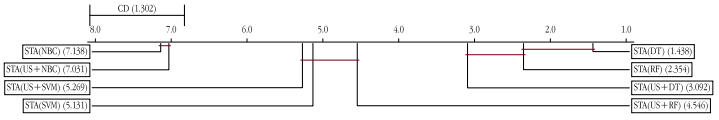
(c) Ranking-loss



(d) Average-precision

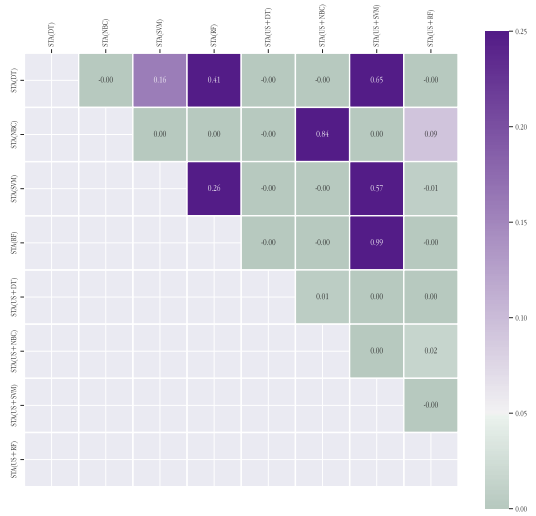


(e) AUC-macro



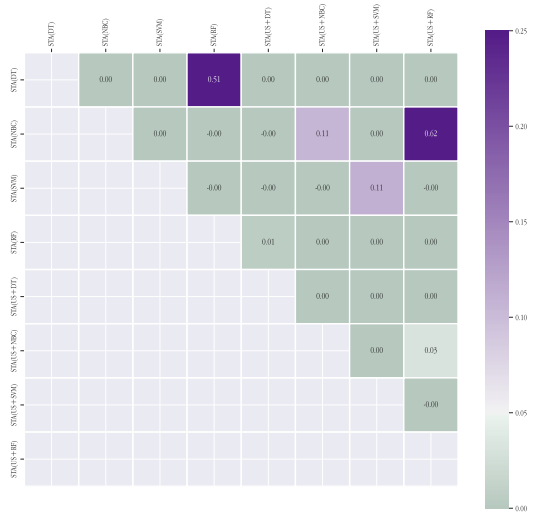
(f) AUC-micro

Figure 7: Nemenyi test for STA with different binary learners.

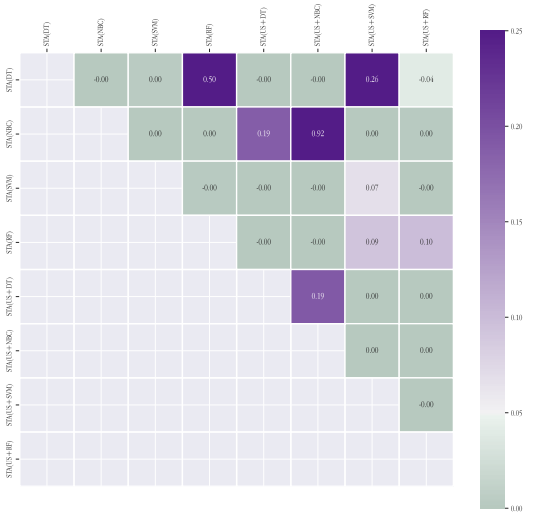


(a) One-error

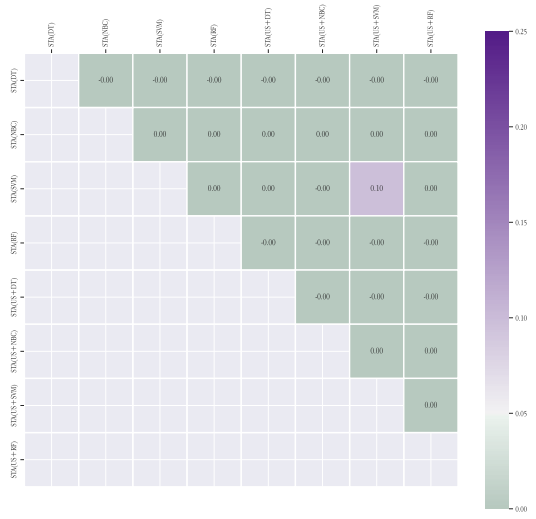
(b) Coverage



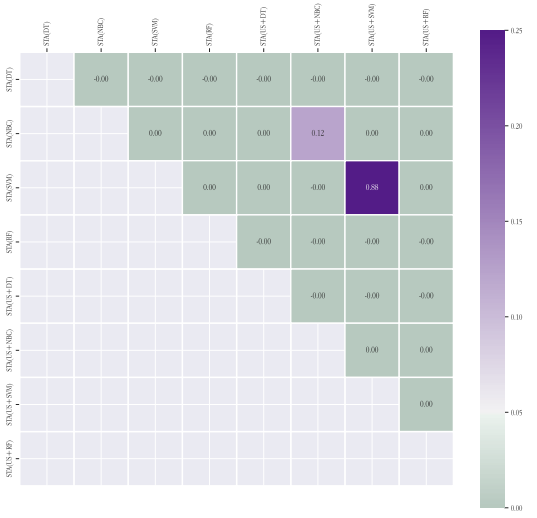
(c) Ranking-loss



(d) Average-precision

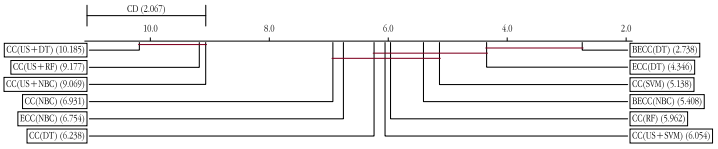


(e) AUC-macro

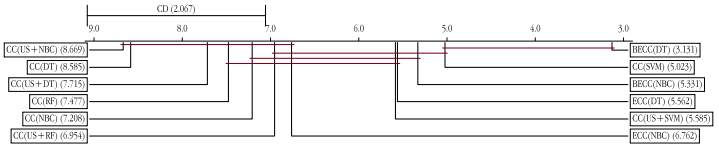


(f) AUC-micro

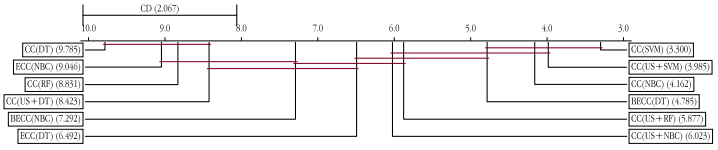
Figure 8: Wilcoxon test for STA with different binary learners.



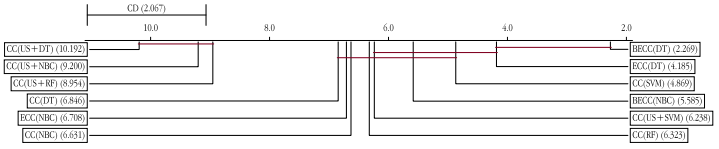
(a) One-error



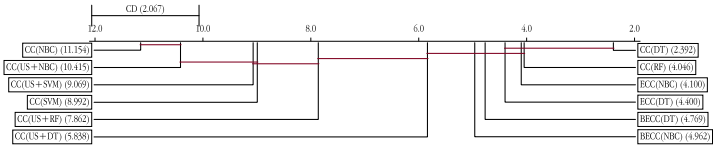
(b) Coverage



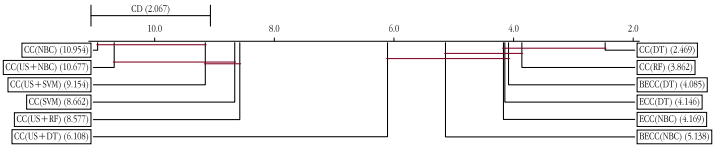
(c) Ranking-loss



(d) Average-precision

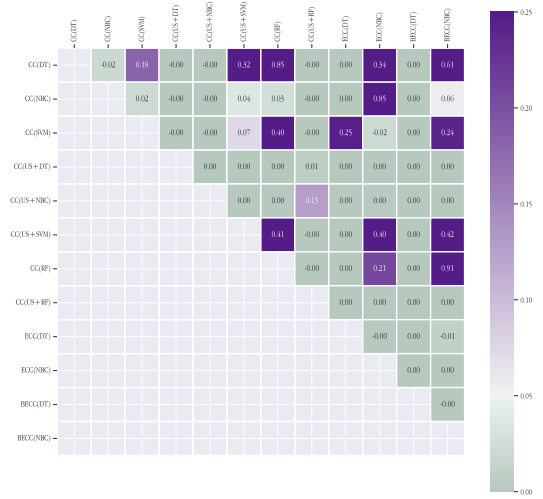


(e) AUC-macro

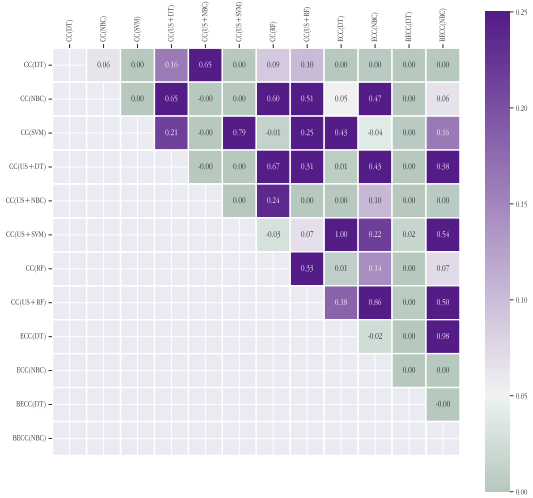


(f) AUC-micro

Figure 9: Nemenyi test for CC and ECC with different binary learners.



(a) One-error



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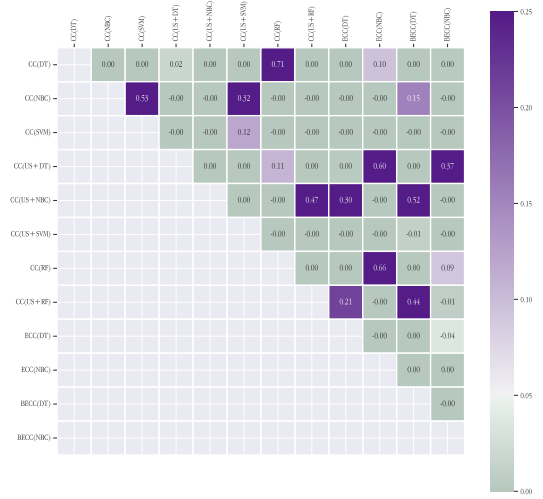
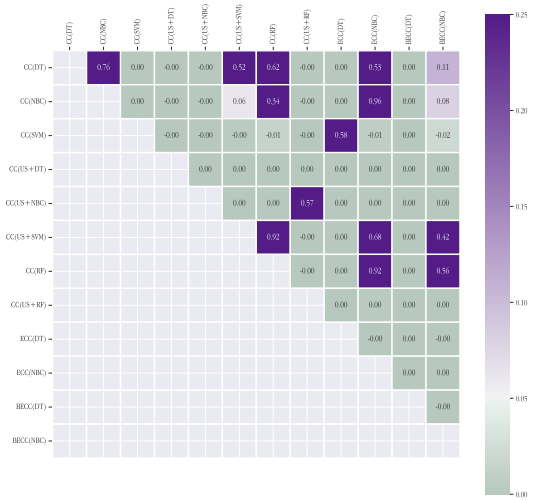
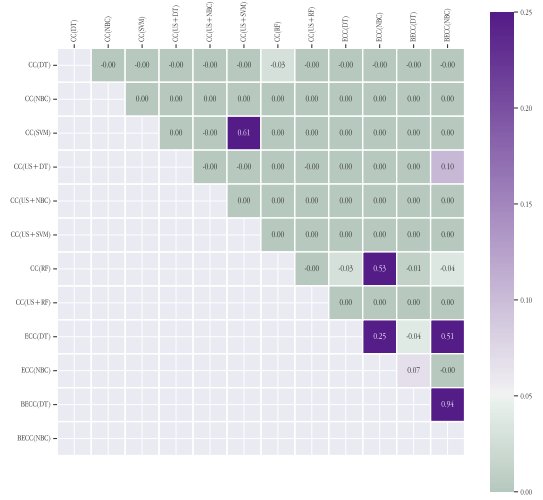


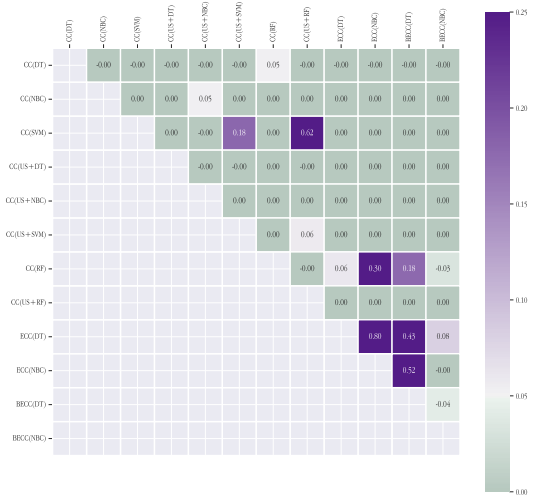
(c) Ranking-loss



(d) Average-precision

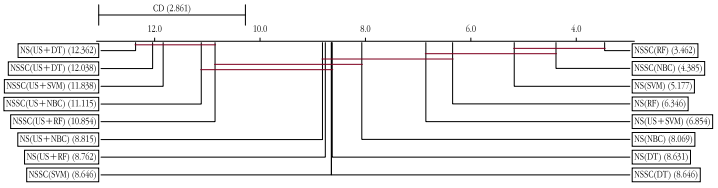


(e) AUC-macro

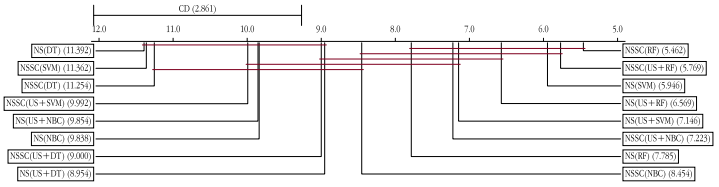


(f) AUC-micro

Figure 10: Wilcoxon test for CC and ECC with different binary learners.



(a) One-error



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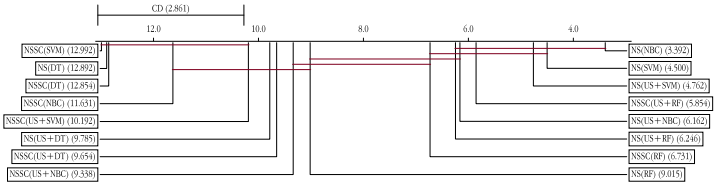
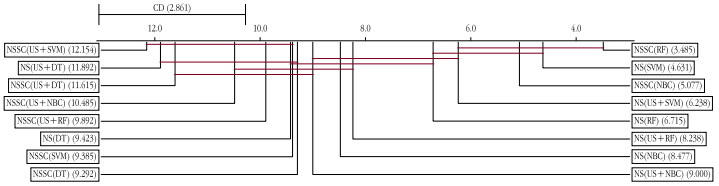
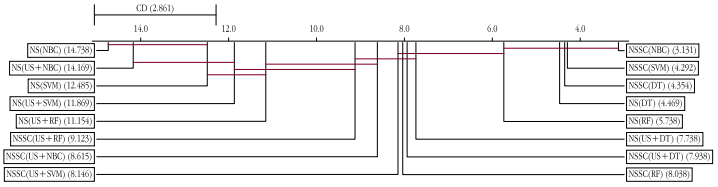


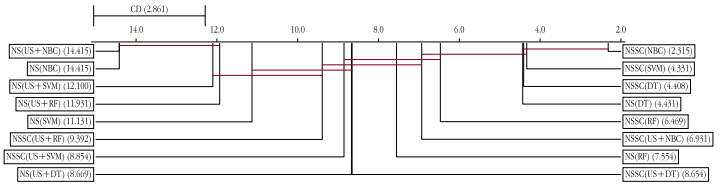
(c) Ranking-loss



(d) Average-precision

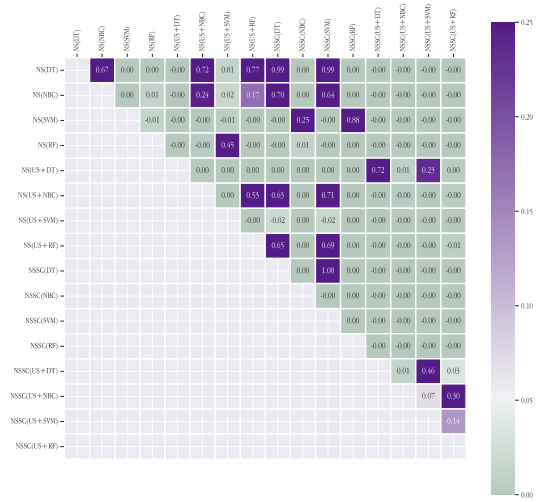


(e) AUC-macro

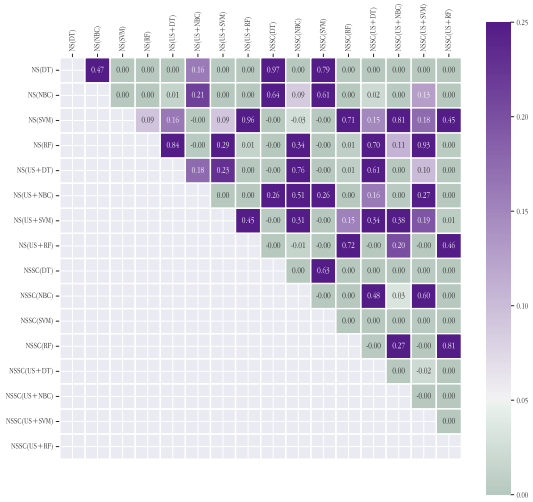


(f) AUC-micro

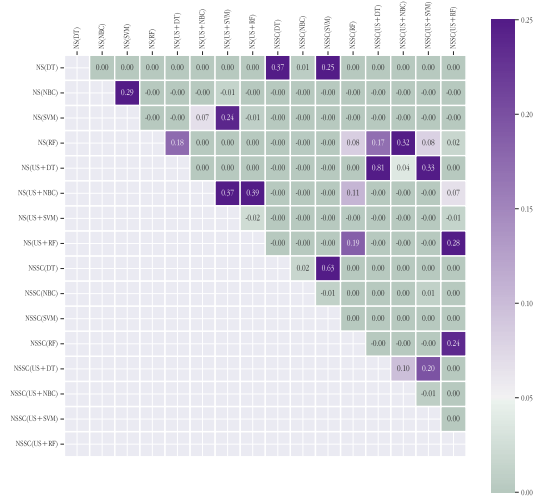
Figure 11: Nemenyi test for NS and NSSC with different binary learners.



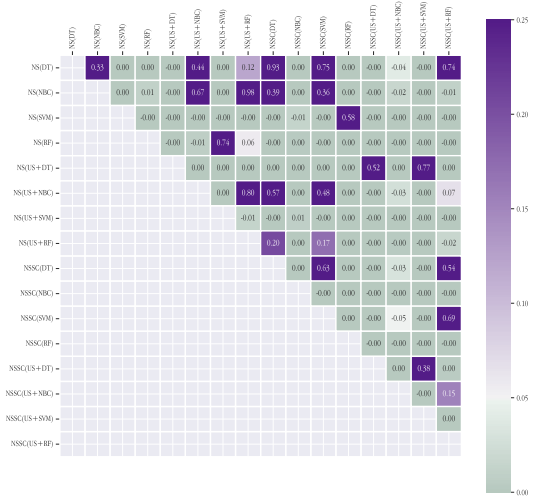
(a) One-error



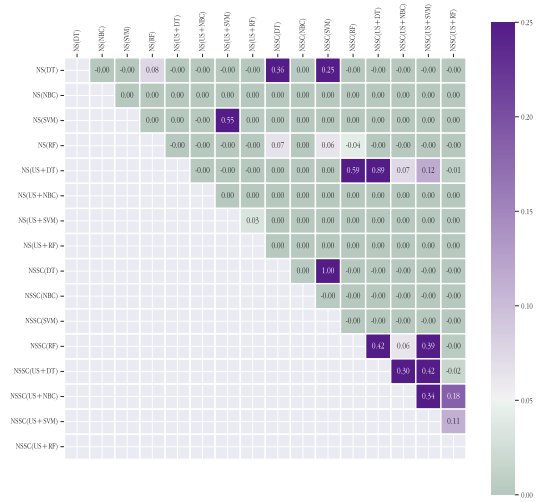
(b) Coverage



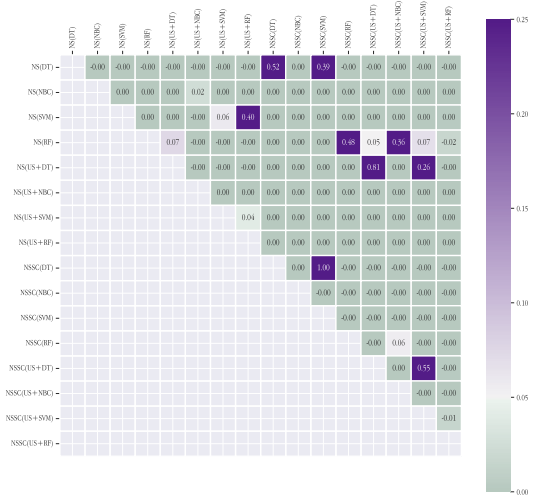
(c) Ranking-loss



(d) Average-precision

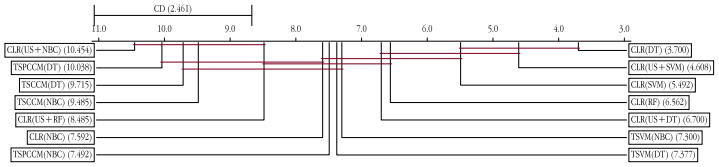


(e) AUC-macro

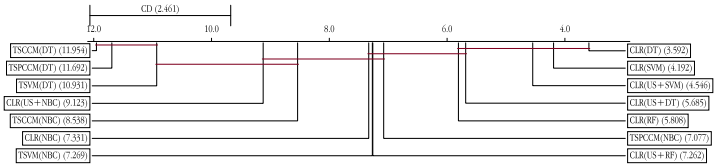


(f) AUC-micro

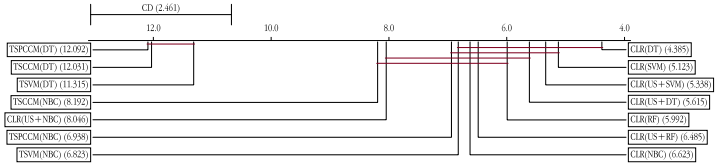
Figure 12: Wilcoxon test for NS and NSSC with different binary learners.



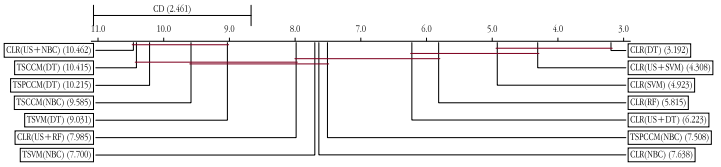
(a) One-error



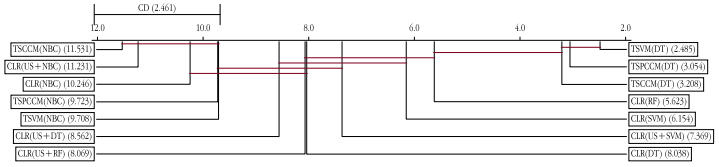
(b) Coverage



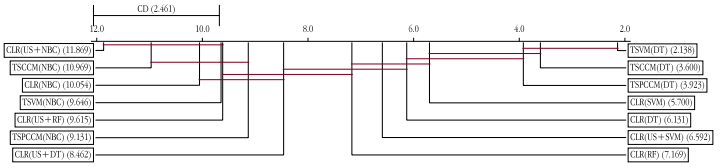
(c) Ranking-loss



(d) Average-precision

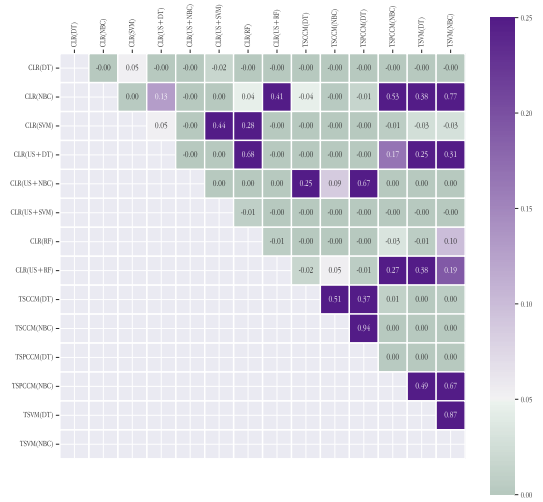


(e) AUC-macro

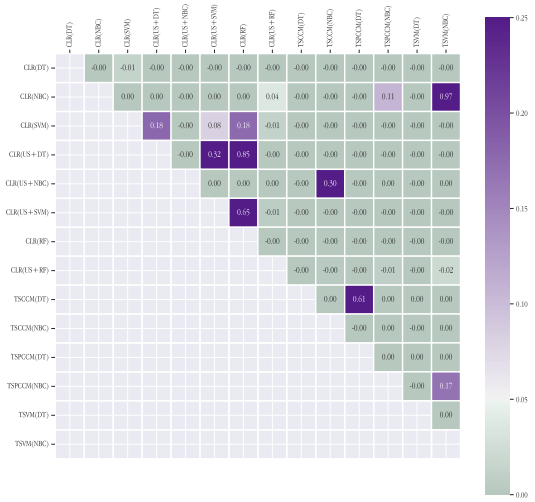


(f) AUC-micro

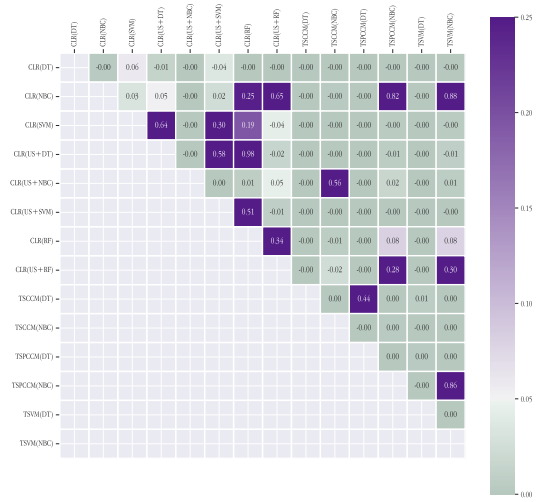
Figure 13: Nemenyi test for OVO approaches with different binary learners.



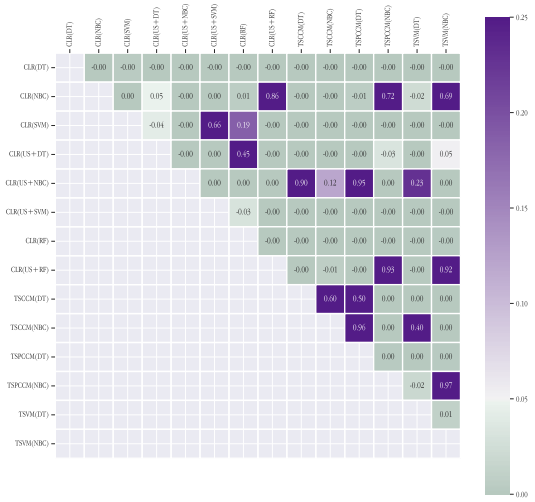
(a) One-error



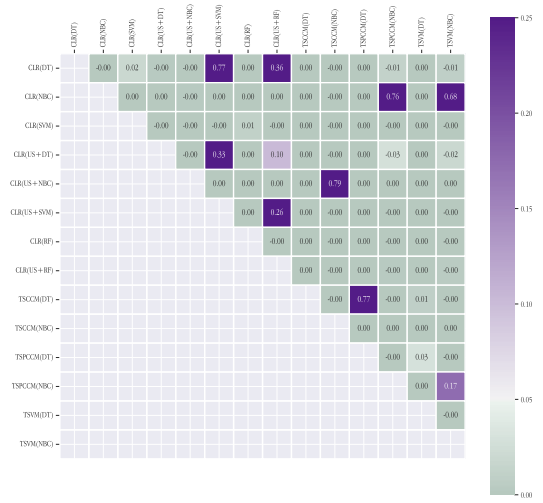
(b) Coverage



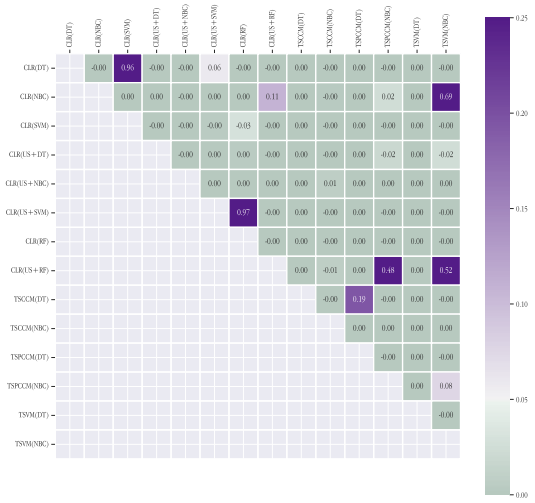
(c) Ranking-loss



(d) Average-precision

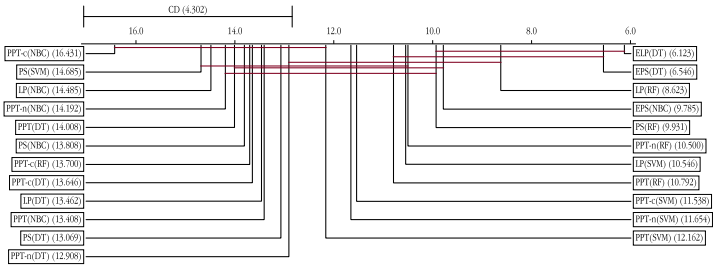


(e) AUC-macro

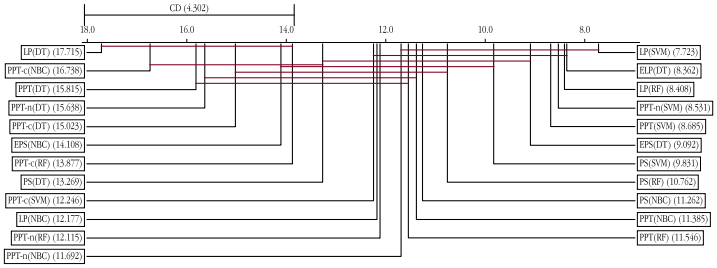


(f) AUC-micro

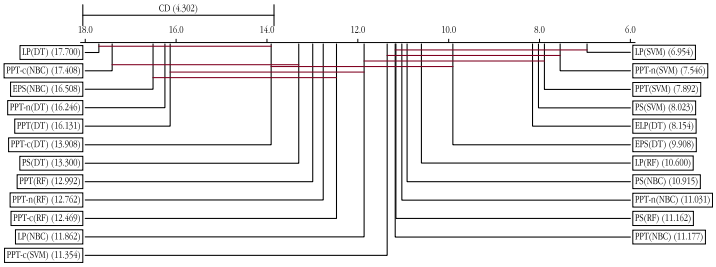
Figure 14: Wilcoxon test for OVO approaches with different binary learners.



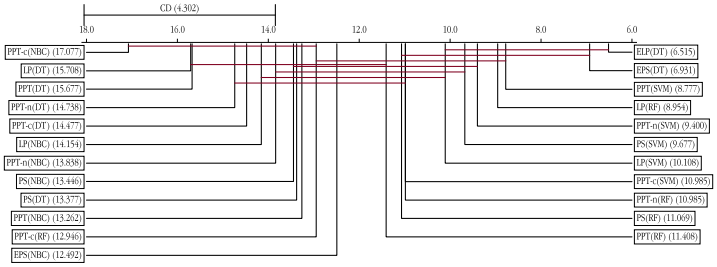
(a) One-error



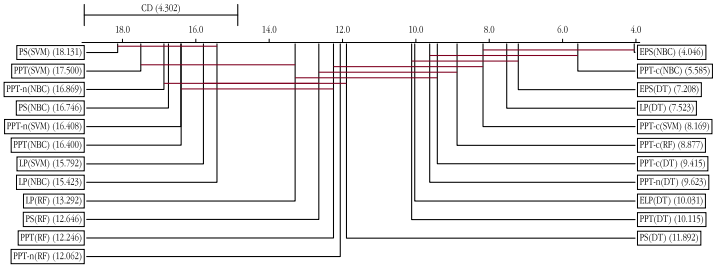
(b) Coverage



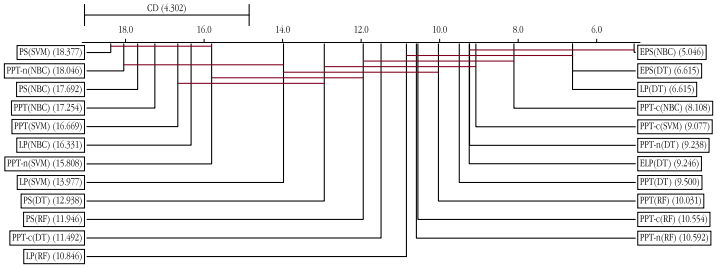
(c) Ranking-loss



(d) Average-precision

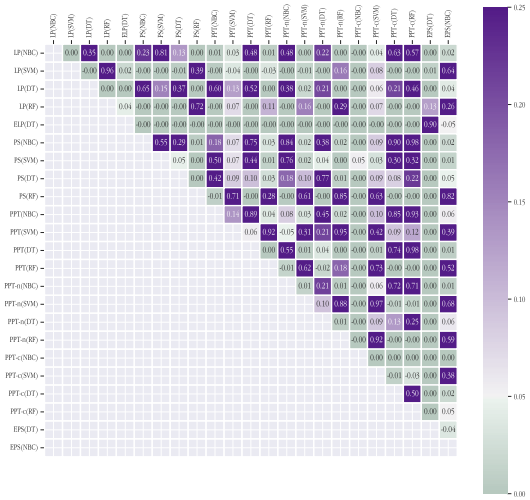


(e) AUC-macro

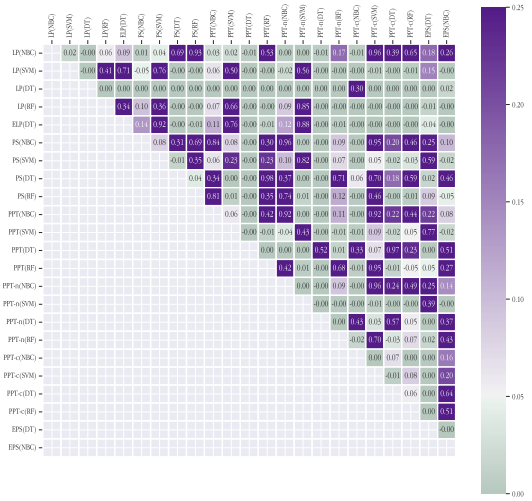


(f) AUC-micro

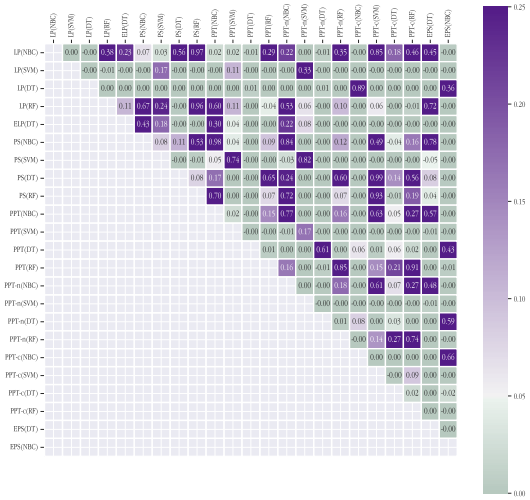
Figure 15: Nemenyi test for powerset based approaches with different binary learners.



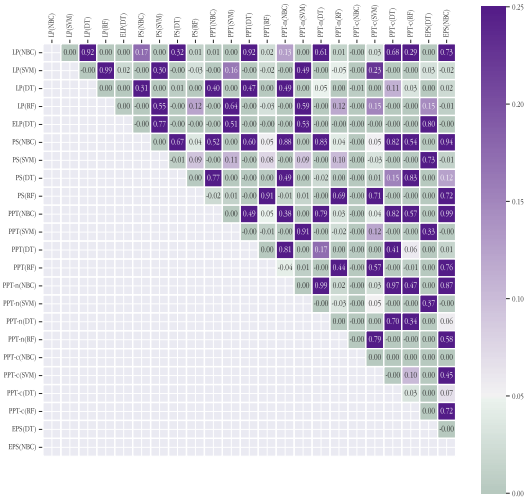
(a) One-error



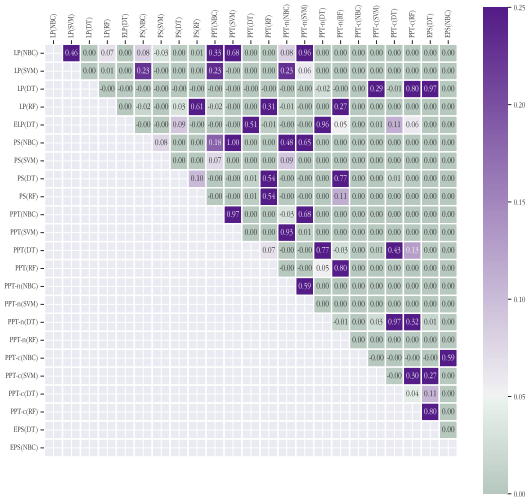
(b) Coverage



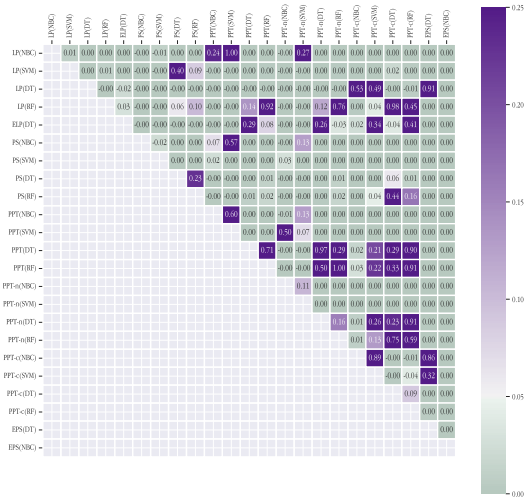
(c) Ranking-loss



(d) Average-precision

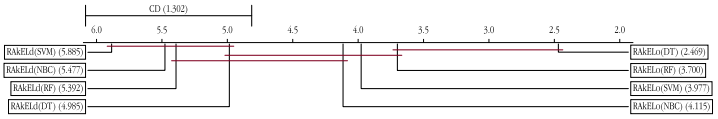


(e) AUC-macro

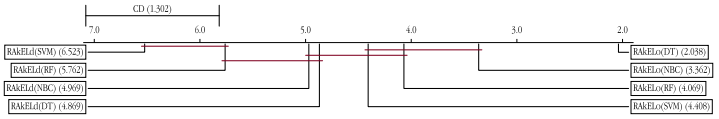


(f) AUC-micro

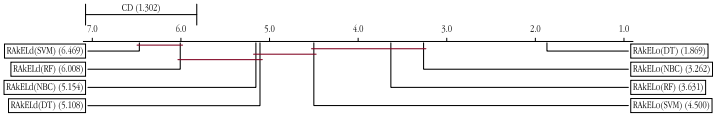
Figure 16: Wilcoxon test for powerset based approaches with different binary learners.



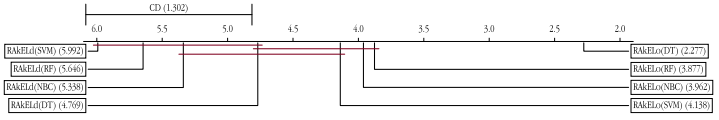
(a) One-error



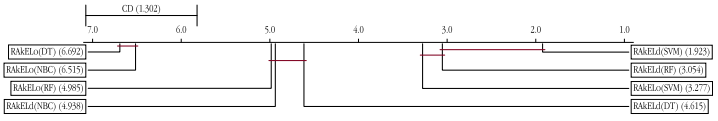
(b) Coverage



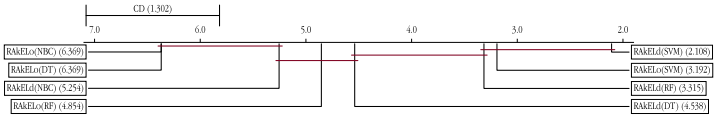
(c) Ranking-loss



(d) Average-precision



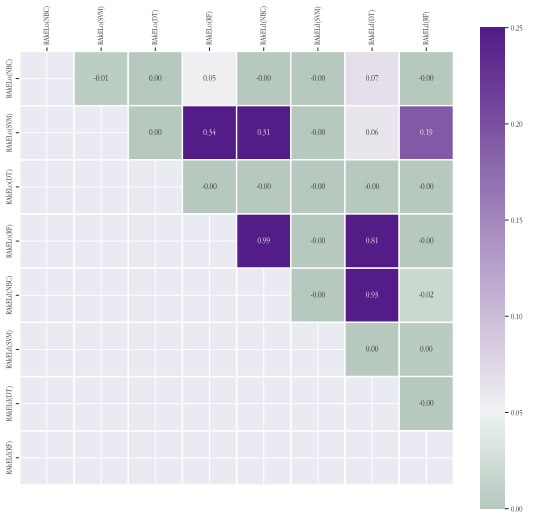
(e) AUC-macro



(f) AUC-micro

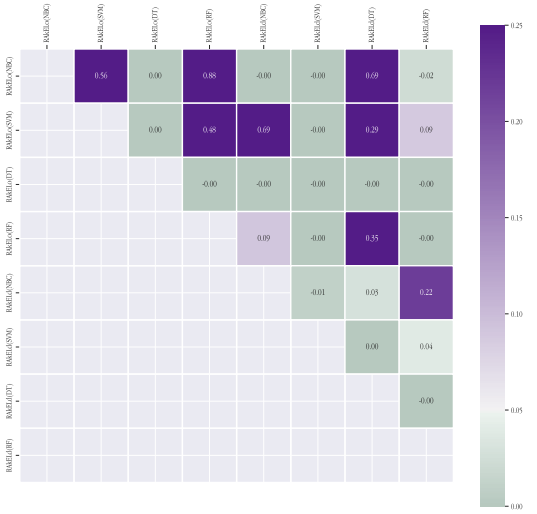
Figure 17: Nemenyi test for RAkEL with different binary learners.

(a) One-error



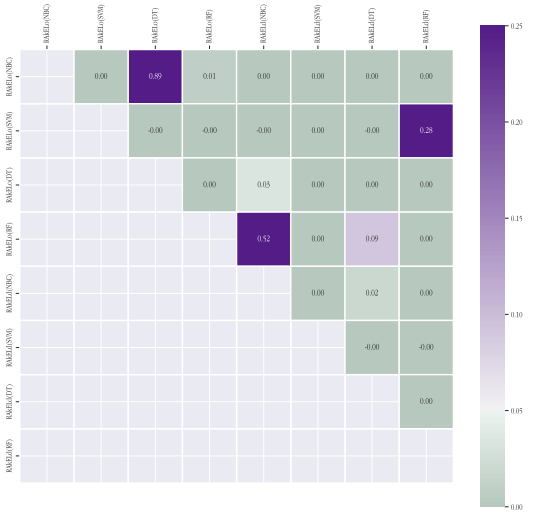
(b) Coverage

(c) Ranking-loss



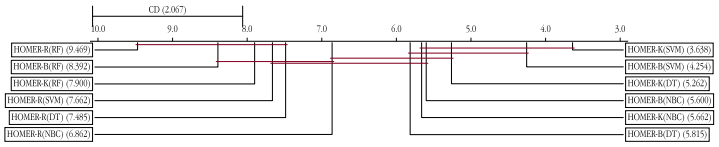
(d) Average-precision

(e) AUC-macro

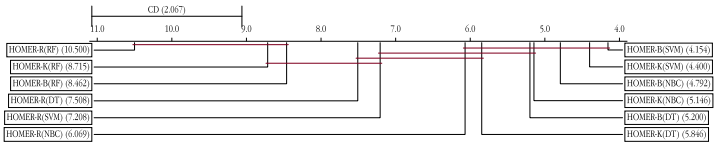


(f) AUC-micro

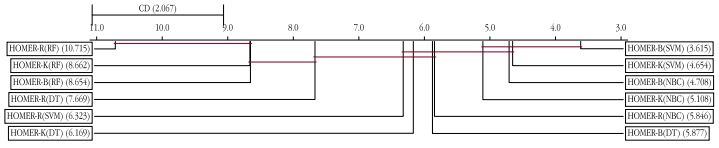
Figure 18: Wilcoxon test for RAkEL with different binary learners.



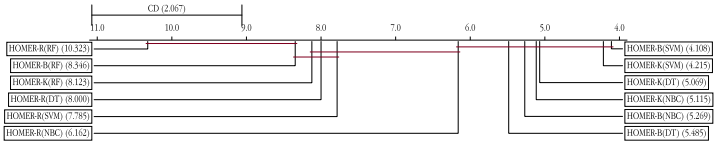
(a) One-error



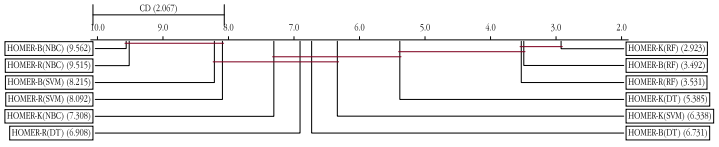
(b) Coverage



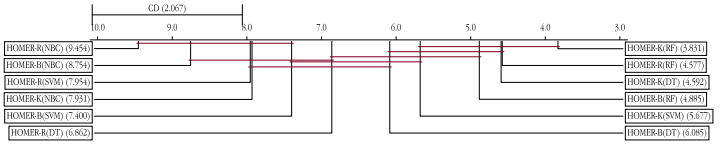
(c) Ranking-loss



(d) Average-precision



(e) AUC-macro

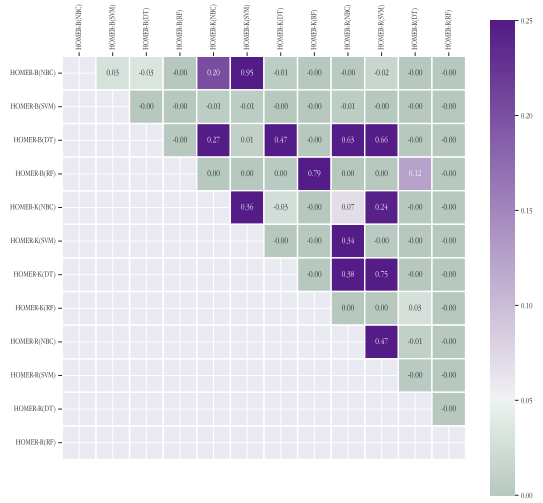


(f) AUC-micro

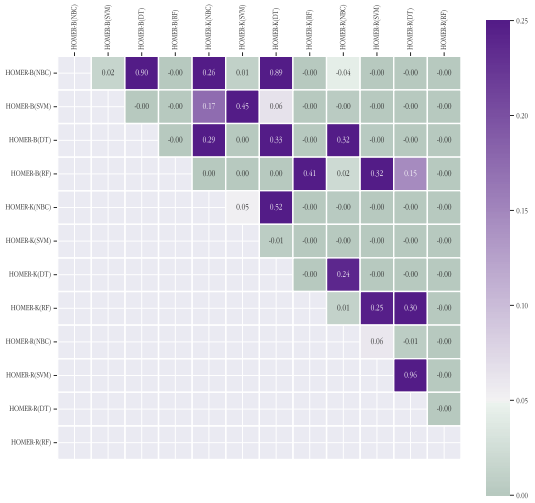
Figure 19: Nemenyi test for HOMER with different binary learners.

(a) One-error

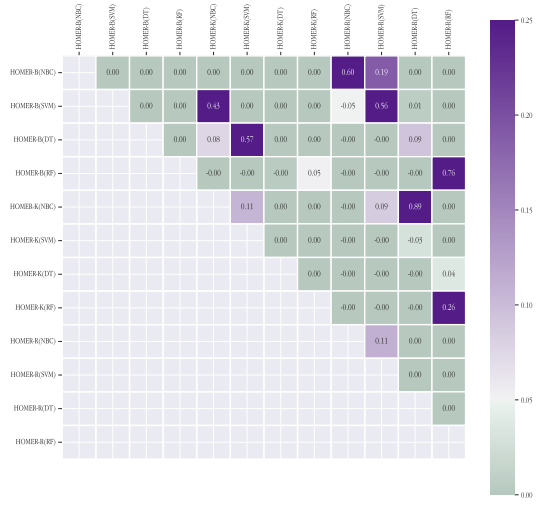
(b) Coverage



(c) Ranking-loss



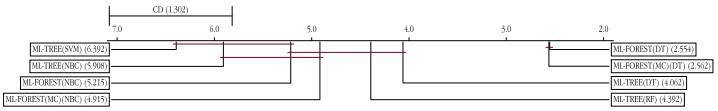
(d) Average-precision



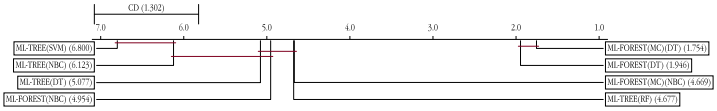
(e) AUC-macro

(f) AUC-micro

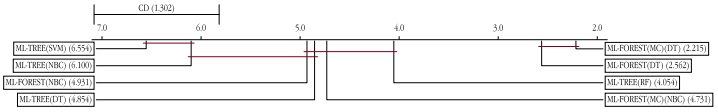
Figure 20: Wilcoxon test for HOMER with different binary learners.



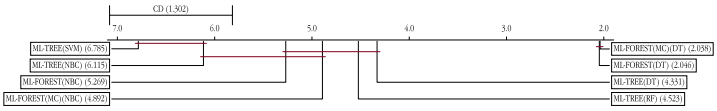
(a) One-error



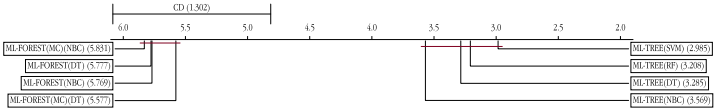
(b) Coverage



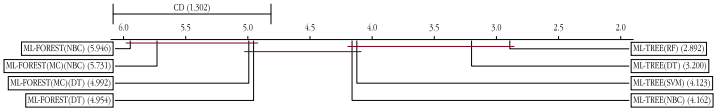
(c) Ranking-loss



(d) Average-precision



(e) AUC-macro



(f) AUC-micro

Figure 21: Nemenyi test for ML-TREE and ML-FOREST with different binary learners.

(a) One-error

(b) Coverage

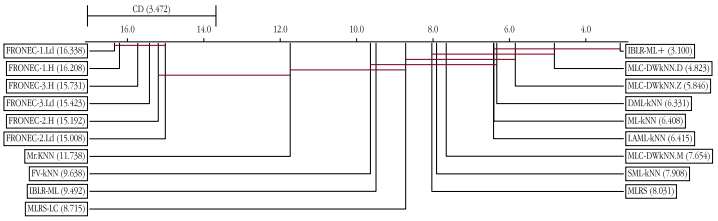
(c) Ranking-loss

(d) Average-precision

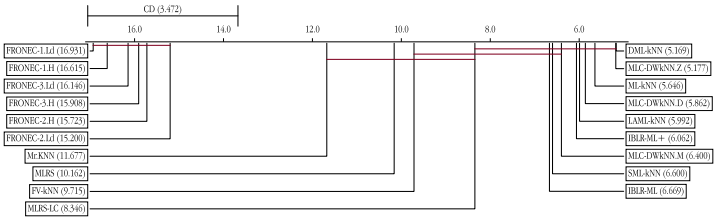
(e) AUC-macro

(f) AUC-micro

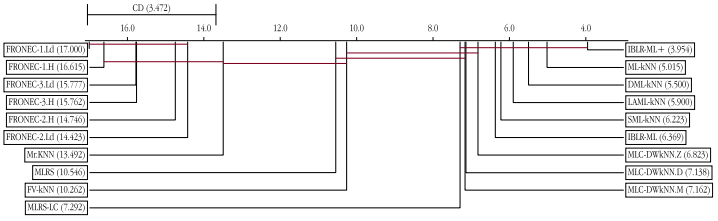
Figure 22: Wilcoxon test for ML-TREE and ML-FOREST with different binary learners.



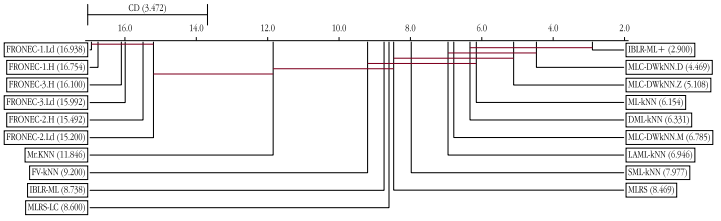
(a) One-error



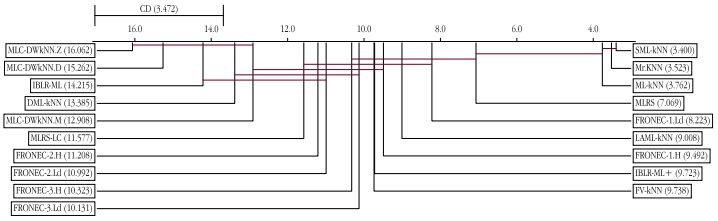
(b) Coverage



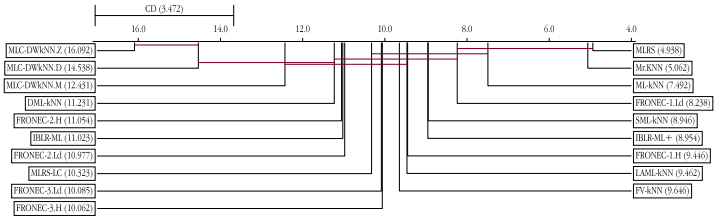
(c) Ranking-loss



(d) Average-precision

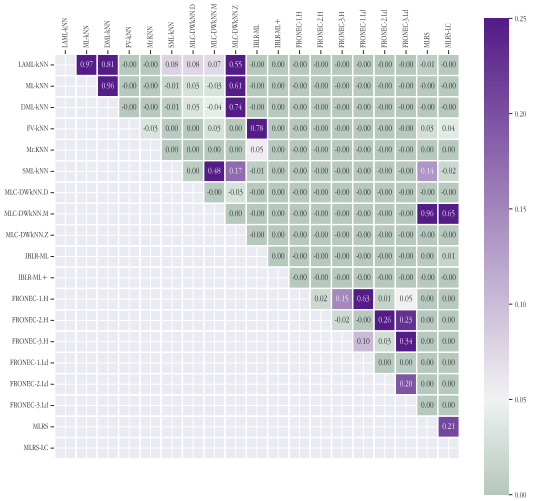


(e) AUC-macro

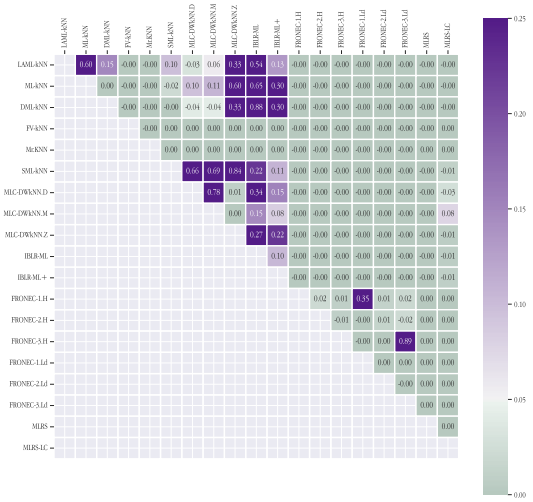


(f) AUC-micro

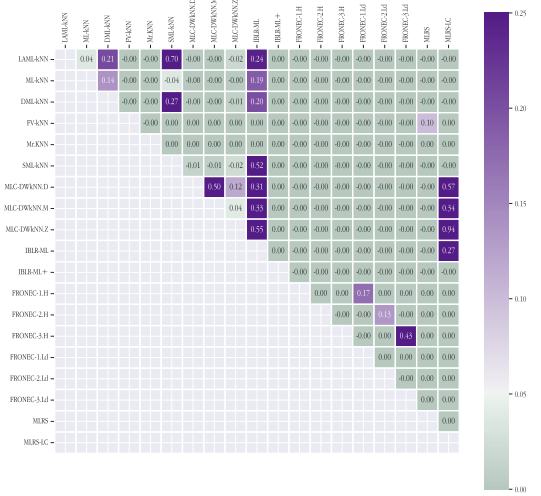
Figure 23: Nemenyi test for nearest neighbors based approaches.



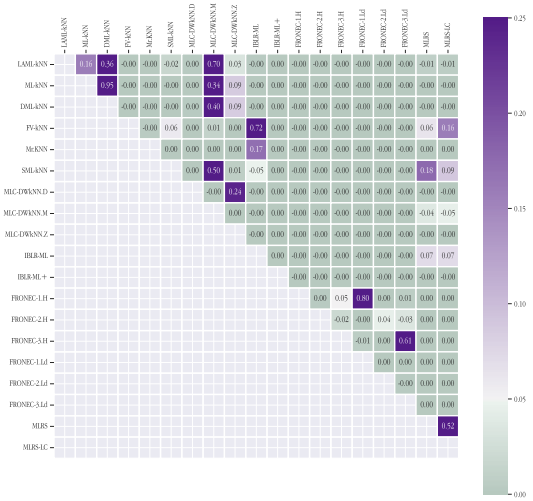
(a) One-error



(b) Coverage

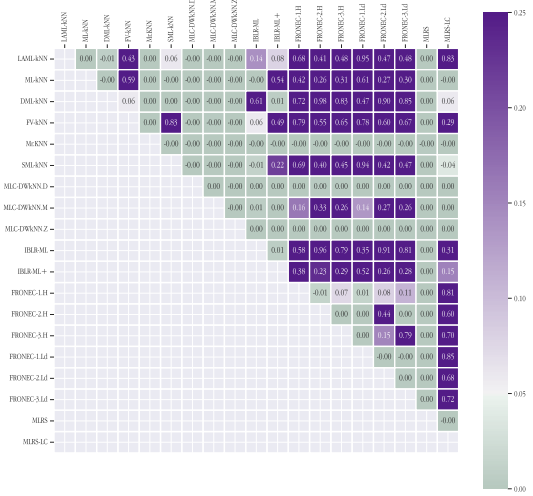


(c) Ranking-loss



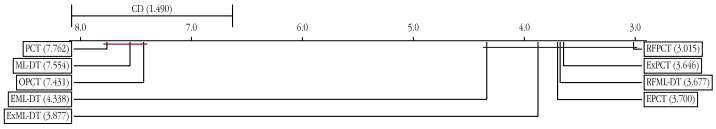
(d) Average-precision

(e) AUC-macro

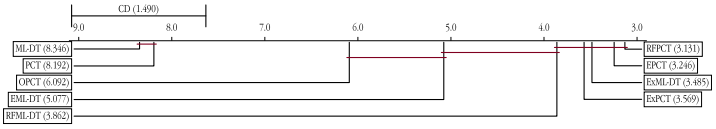


(f) AUC-micro

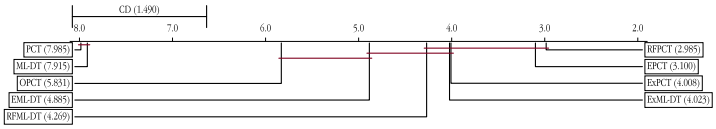
Figure 24: Wilcoxon test for nearest neighbors based approaches.



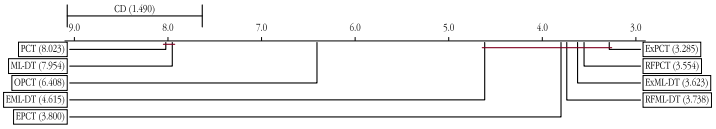
(a) One-error



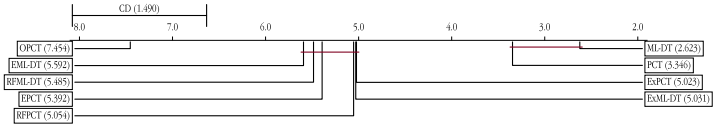
(b) Coverage



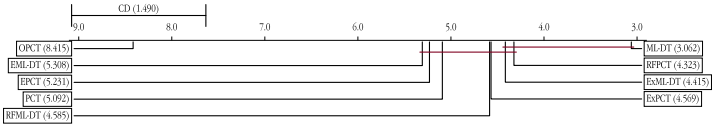
(c) Ranking-loss



(d) Average-precision

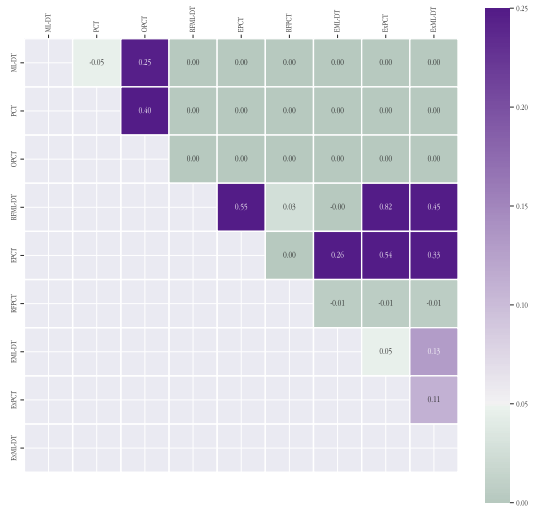


(e) AUC-macro

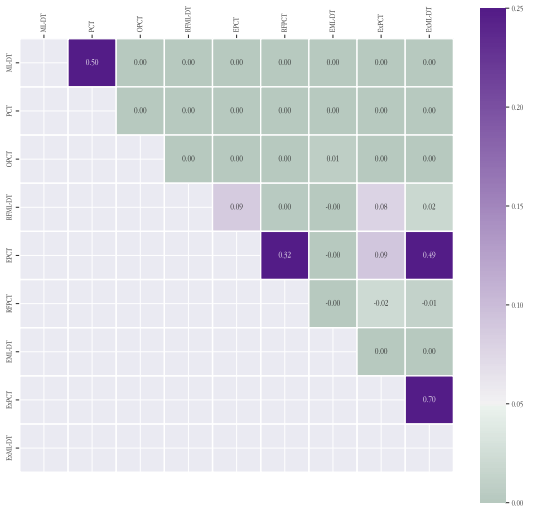


(f) AUC-micro

Figure 25: Nemenyi test for DTs and ensembles of DTs methods.

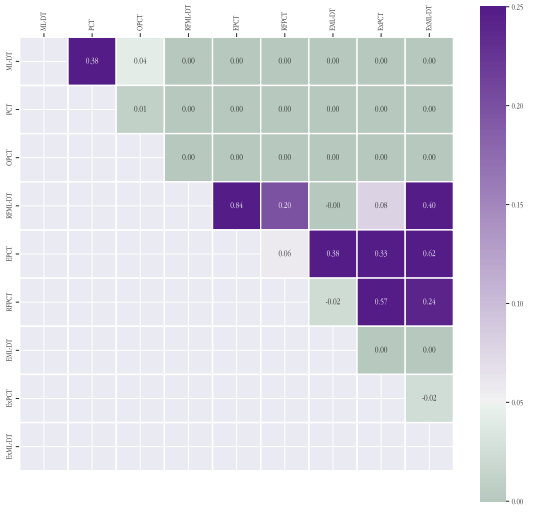


(a) One-error



(b) Coverage

(c) Ranking-loss

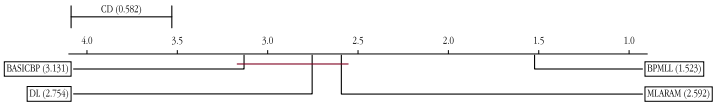


(d) Average-precision

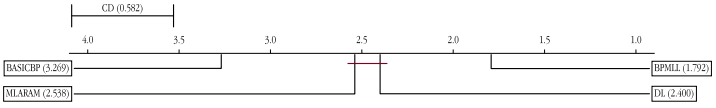
(e) AUC-macro

(f) AUC-micro

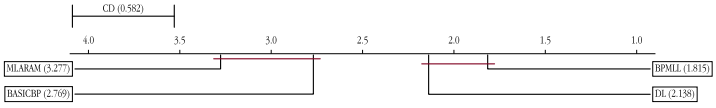
Figure 26: Wilcoxon test for DTs and ensembles of DTs methods.



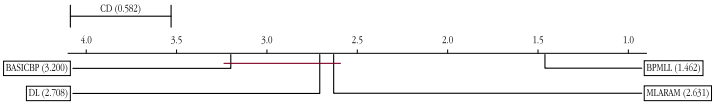
(a) One-error



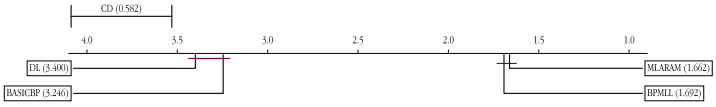
(b) Coverage



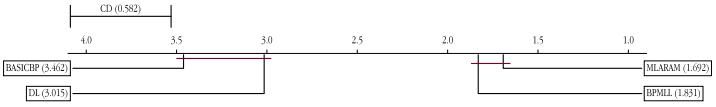
(c) Ranking-loss



(d) Average-precision

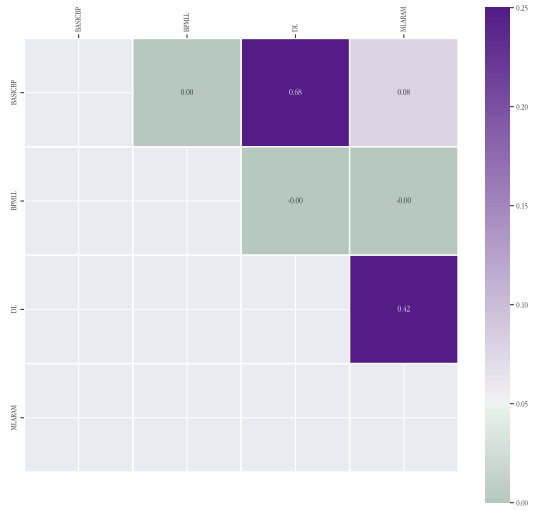


(e) AUC-macro

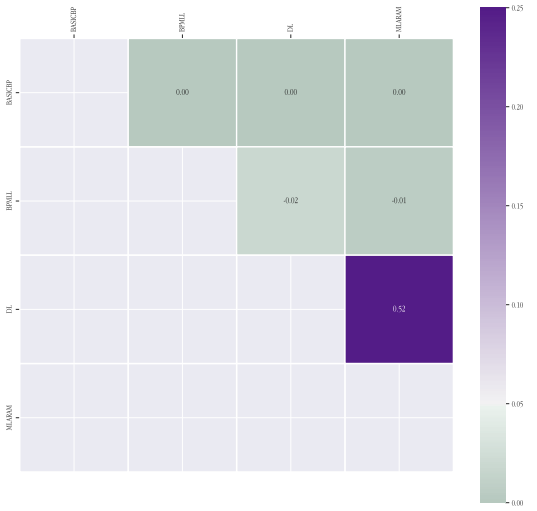


(f) AUC-micro

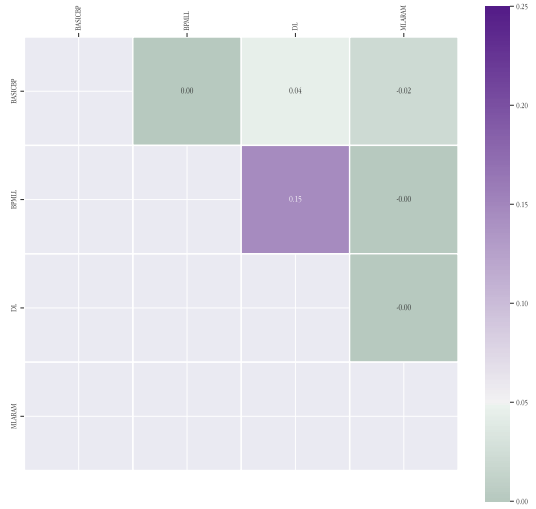
Figure 27: Nemenyi test for neural networks.



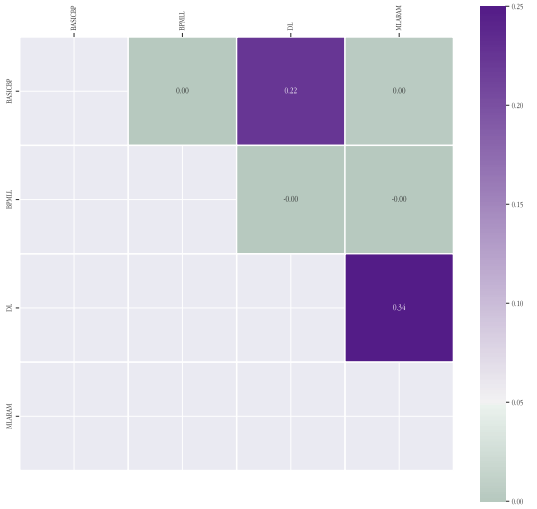
(a) One-error



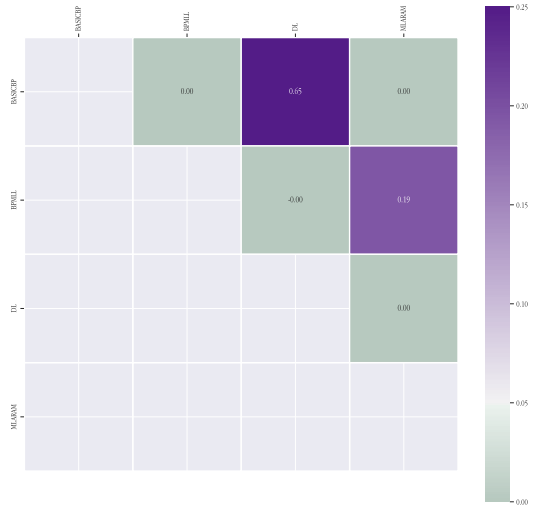
(b) Coverage



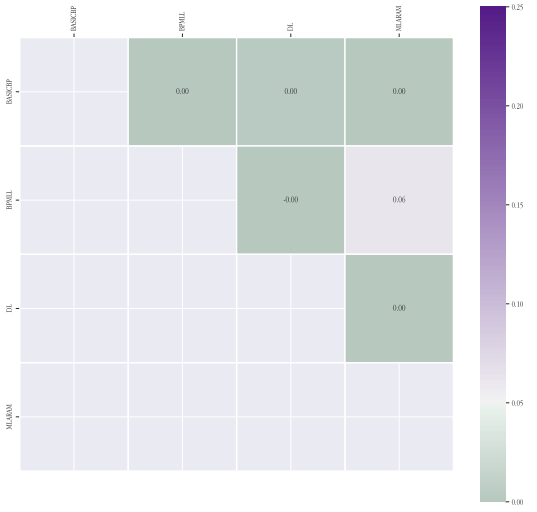
(c) Ranking-loss



(d) Average-precision

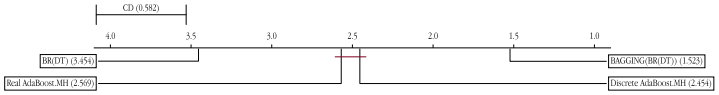


(e) AUC-macro

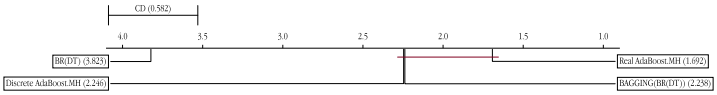


(f) AUC-micro

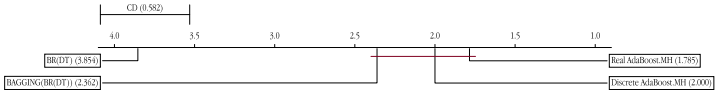
Figure 28: Wilcoxon test for neural networks.



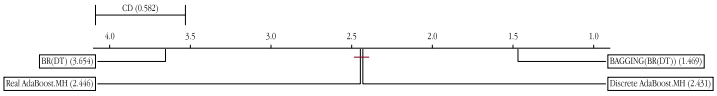
(a) One-error



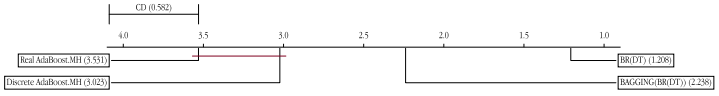
(b) Coverage



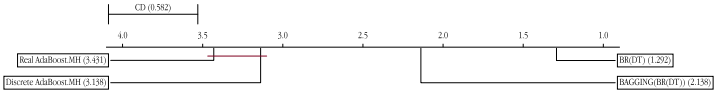
(c) Ranking-loss



(d) Average-precision



(e) AUC-macro



(f) AUC-micro

Figure 29: Nemenyi test ensembles using DTs.

(a) One-error

(b) Coverage

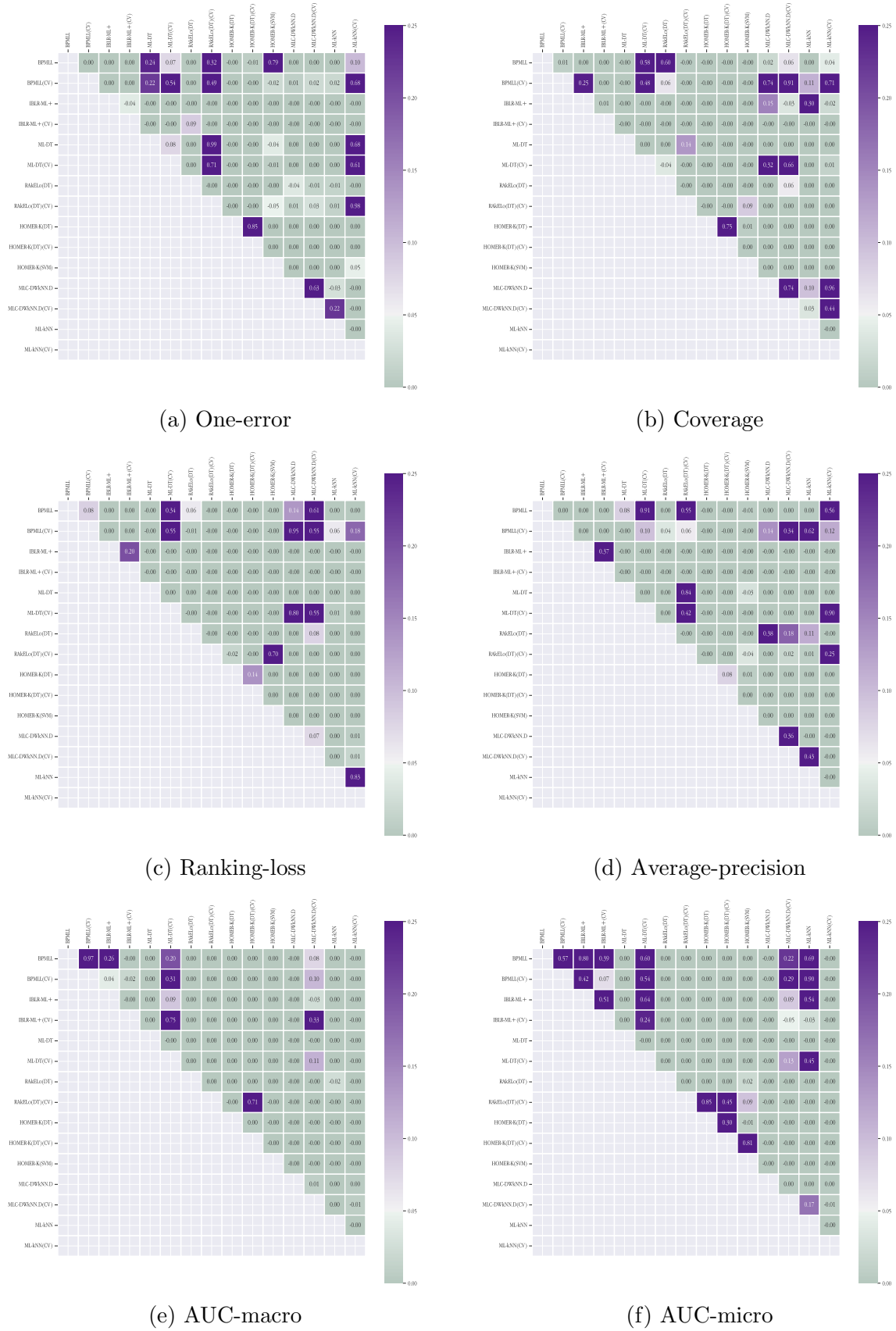
(c) Ranking-loss

(d) Average-precision

(e) AUC-macro

(f) AUC-micro

Figure 30: Wilcoxon test ensembles using DTs.



(a) One-error

(b) Coverage

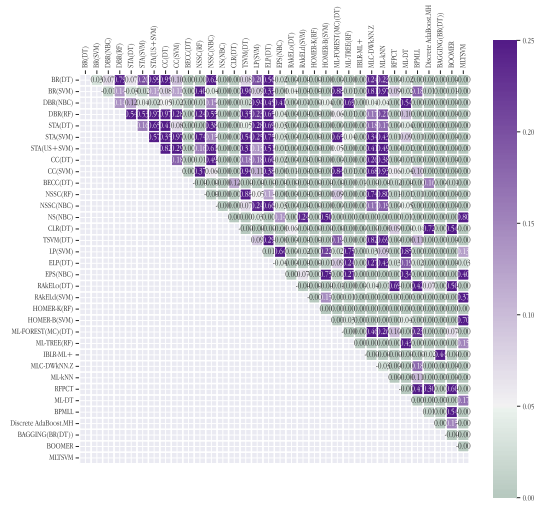
(c) Ranking-loss

(d) Average-precision

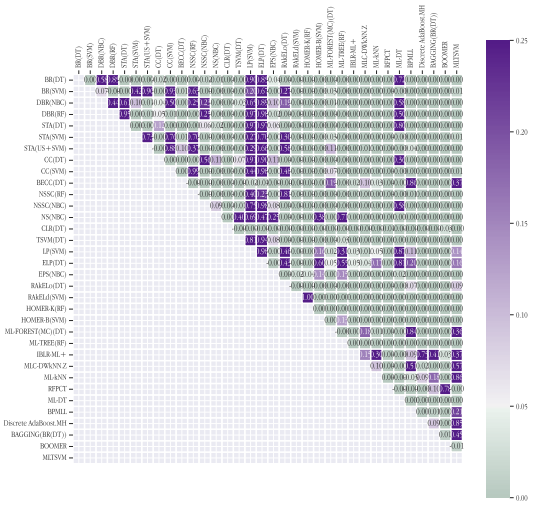
(e) AUC-macro

(f) AUC-micro

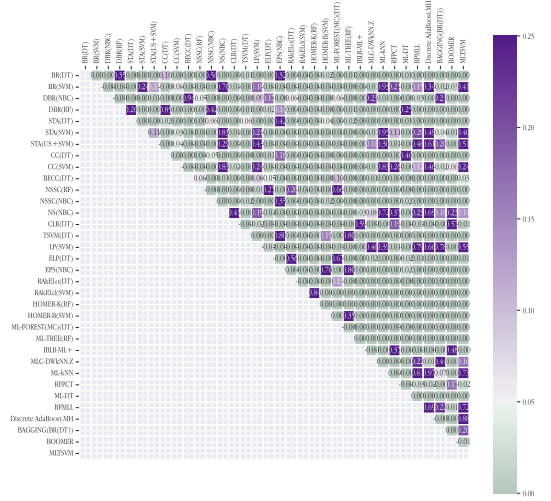
Figure 31: Wilcoxon test for the hyper-parameters cross-validation of different methods.



(a) One-error

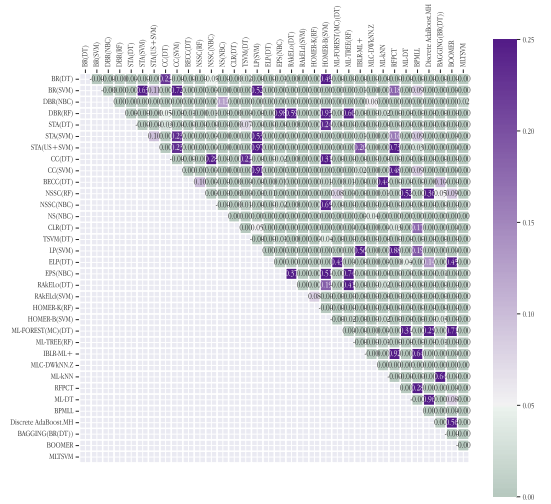


(b) Coverage

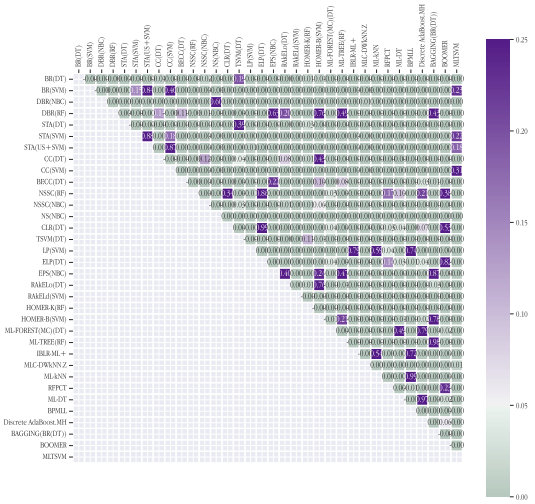


(c) Ranking-loss

(d) Average-precision



(e) AUC-macro



(f) AUC-micro

Figure 32: Wilcoxon test for the best representatives of all methods.

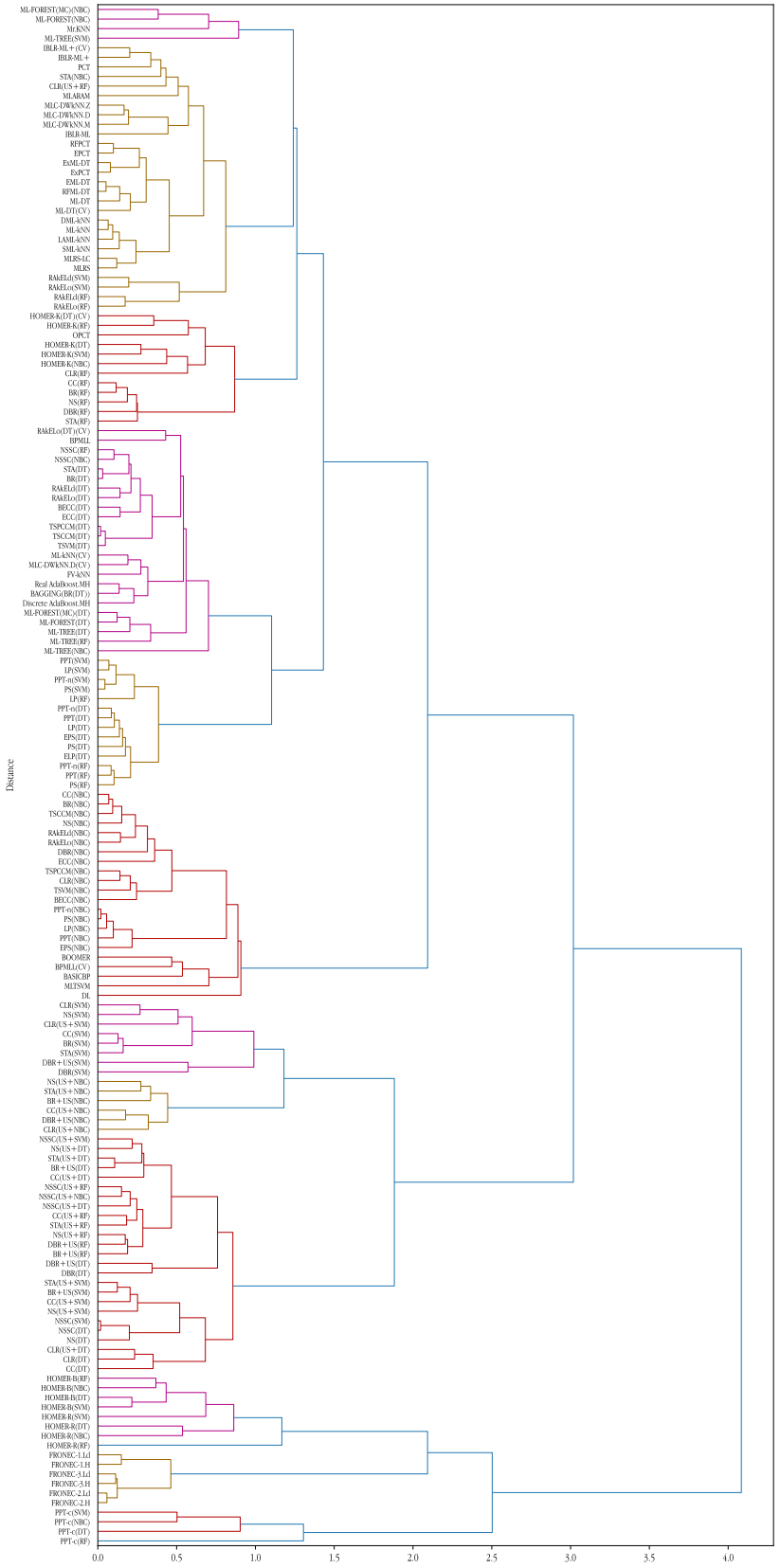


Figure 33: Hierarchical clustering for all methods for the one-error metric.

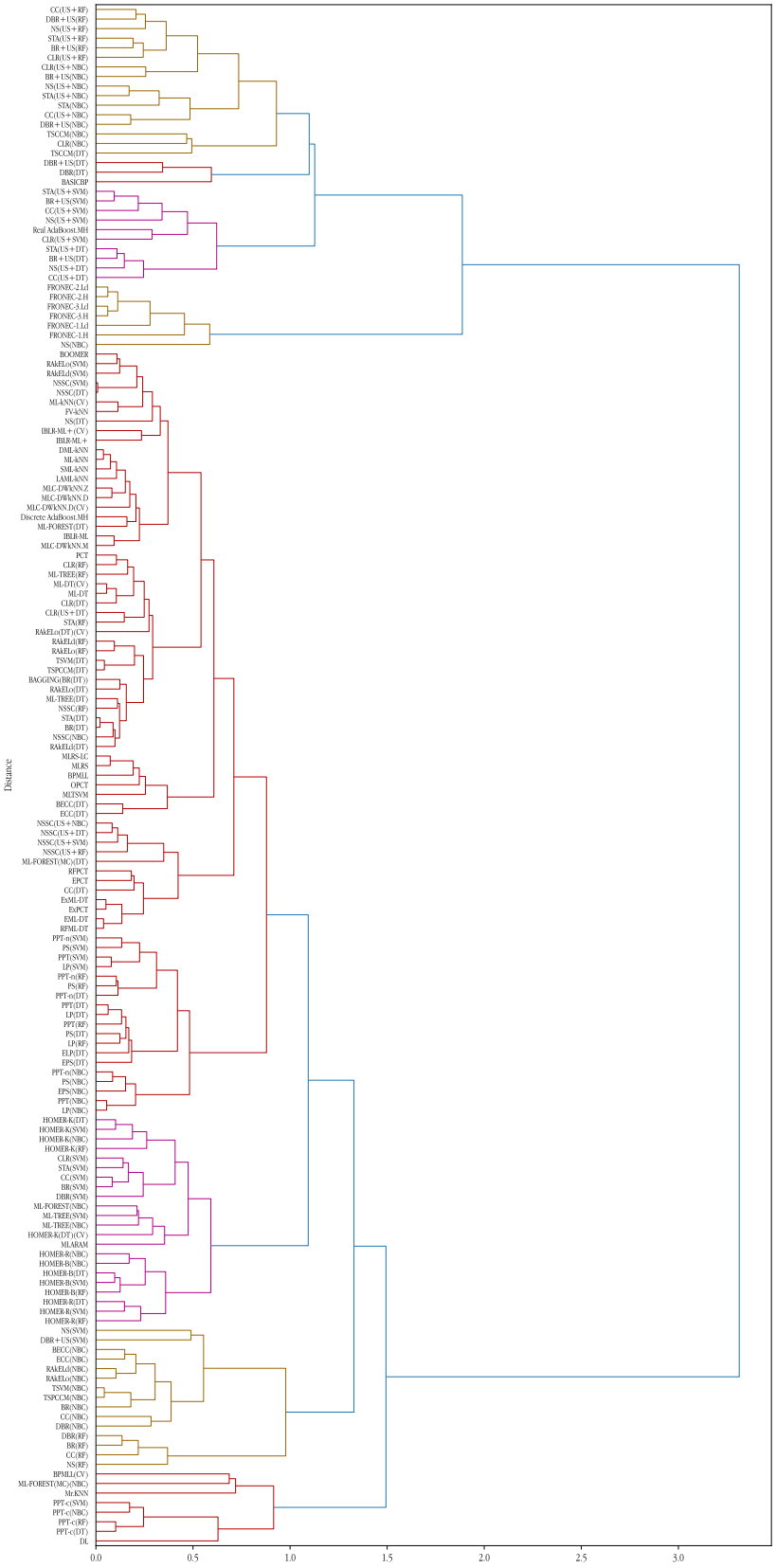


Figure 34: Hierarchical clustering for all methods for the coverage metric.

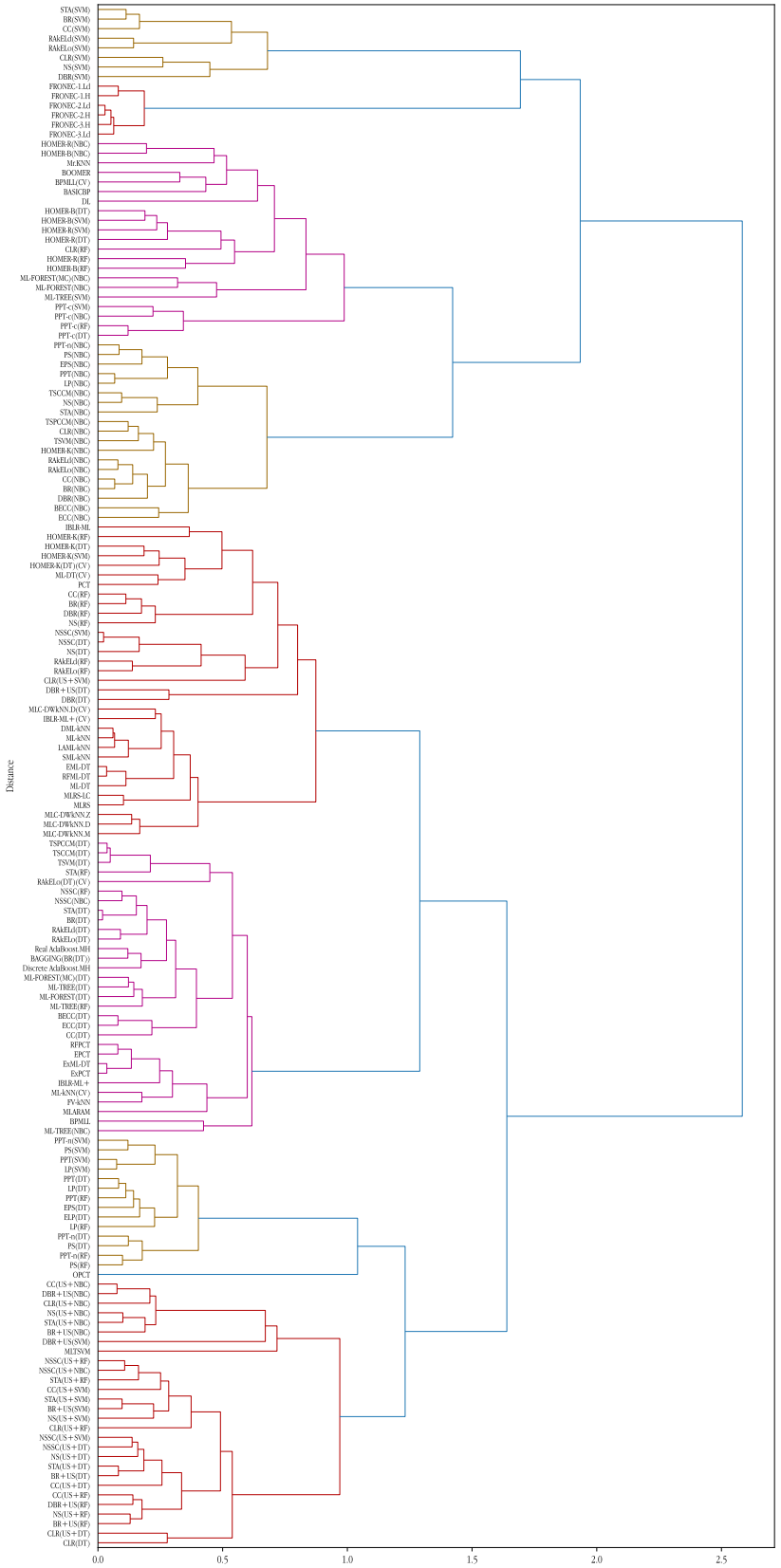


Figure 35: Hierarchical clustering for all methods for the ranking loss metric.

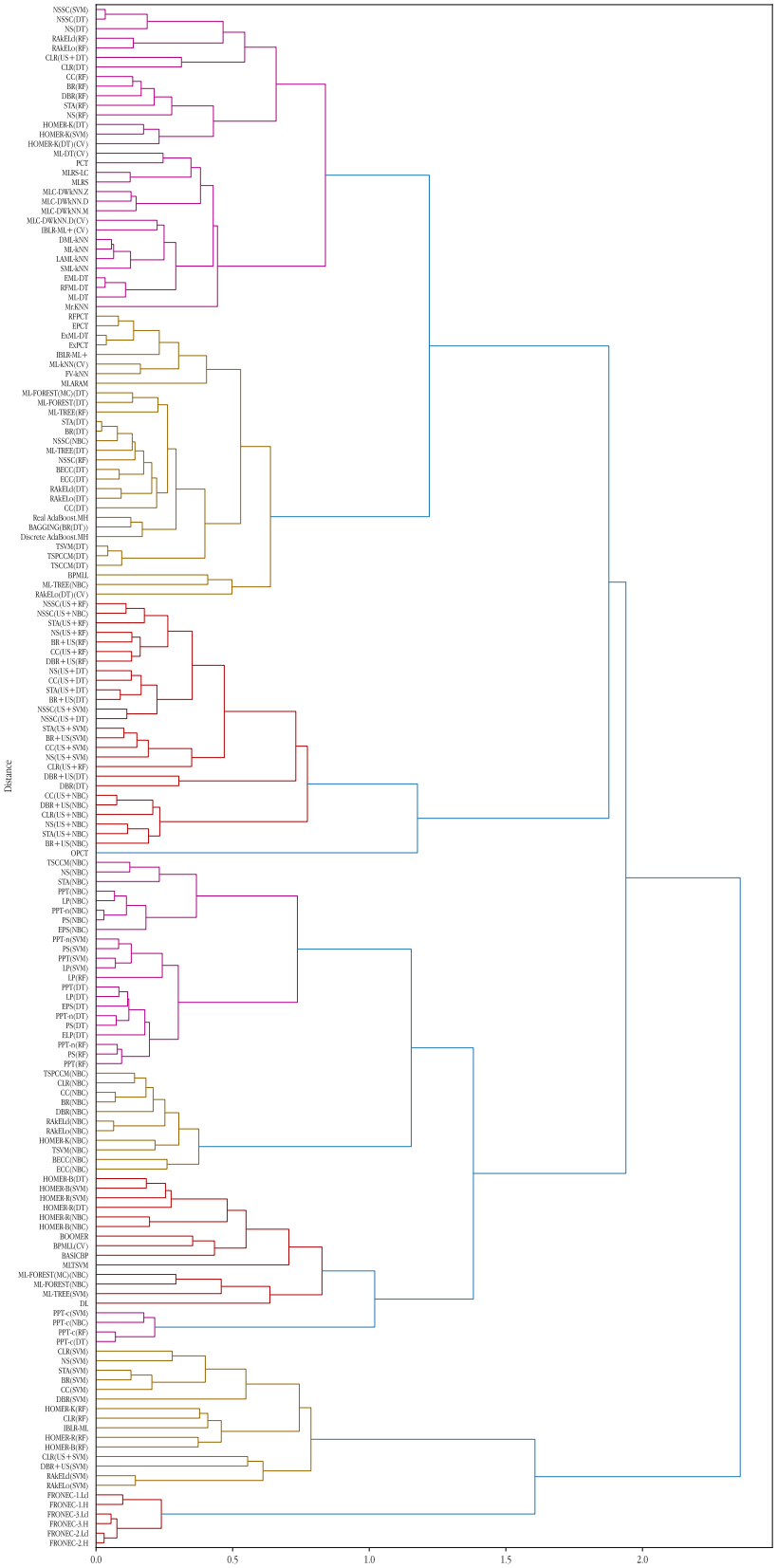


Figure 36: Hierarchical clustering for all methods for the average precision metric.

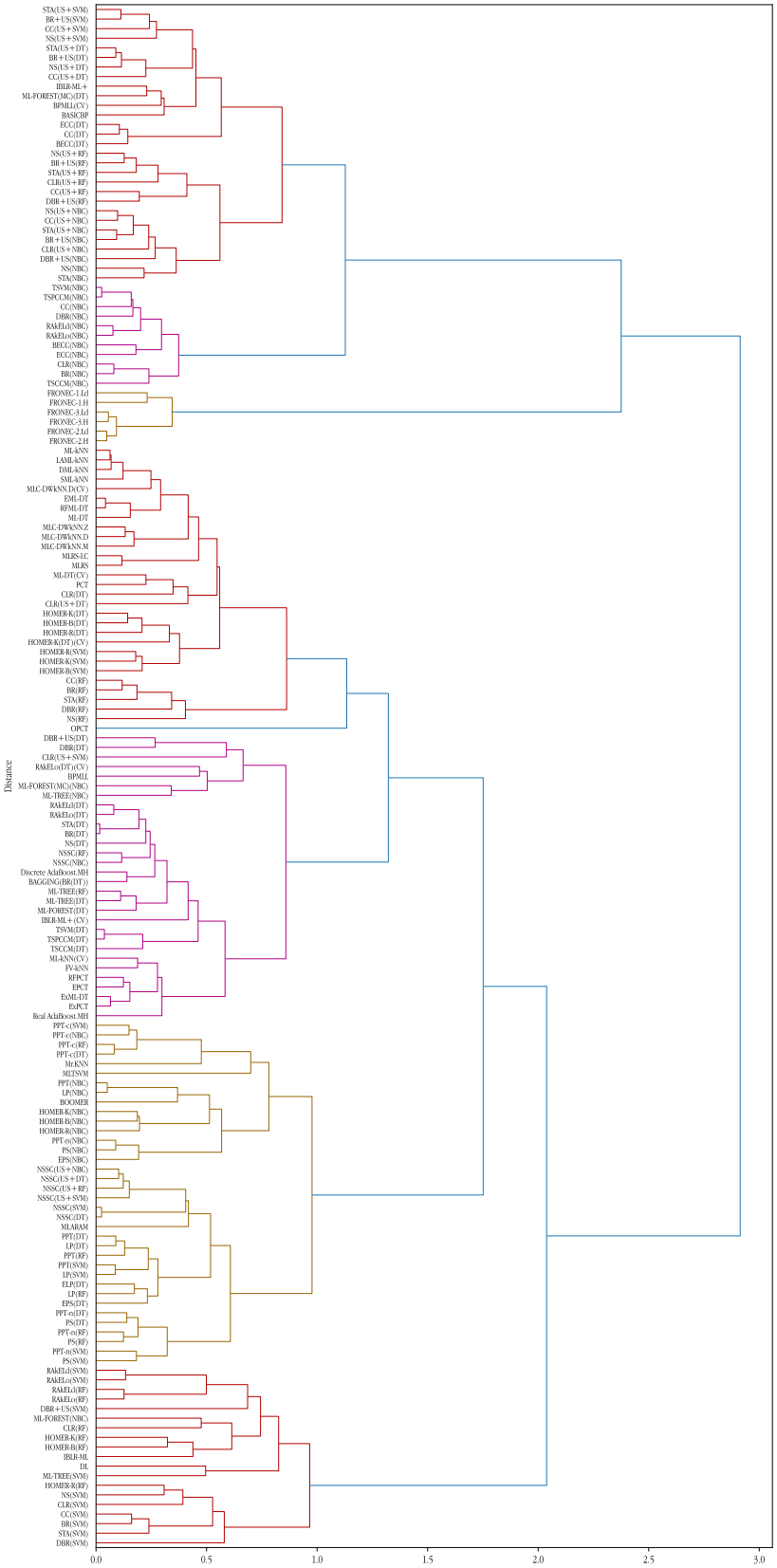


Figure 37: Hierarchical clustering for all methods for the AUC-macro metric.

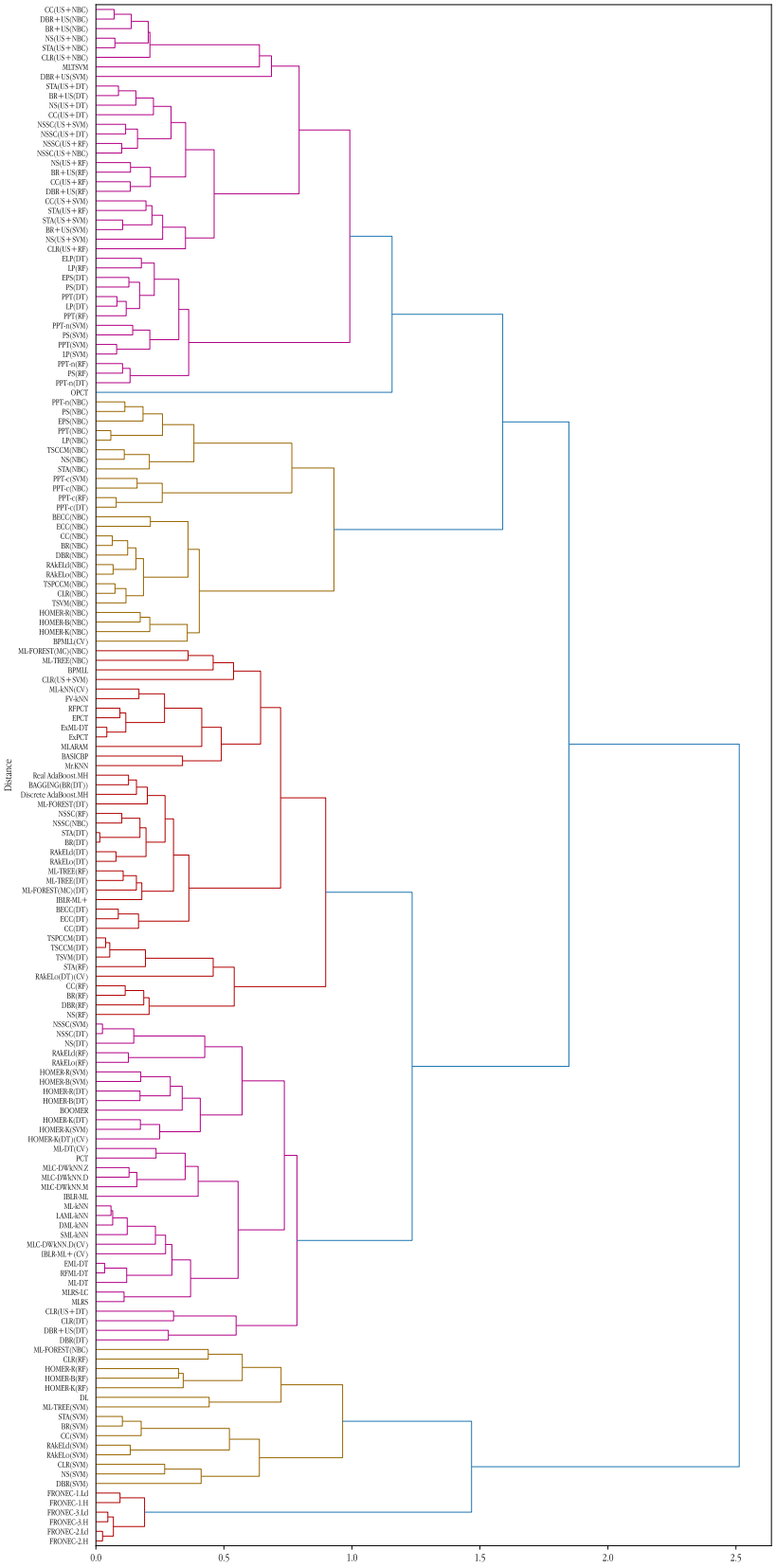


Figure 38: Hierarchical clustering for all methods for the AUC-micro metric.

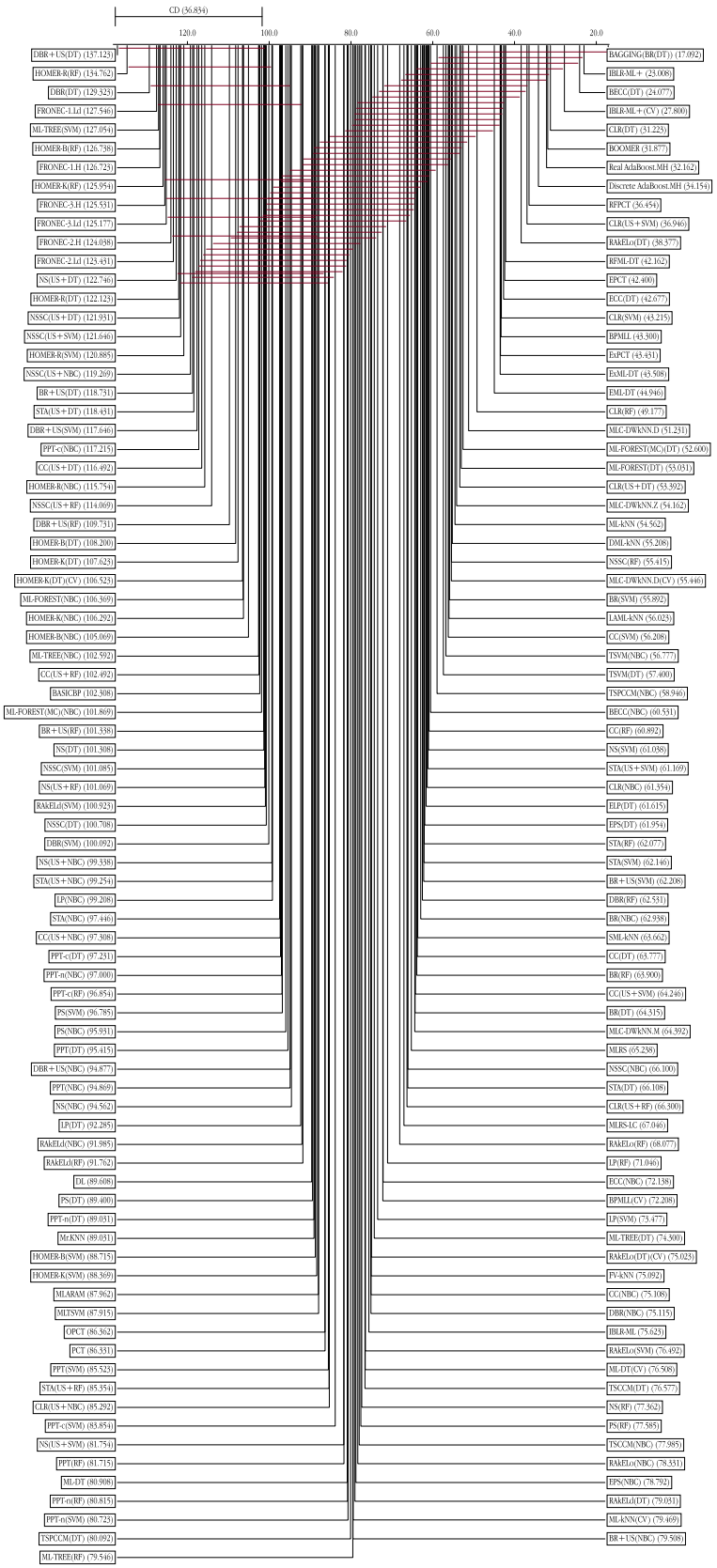


Figure 39: Nemenyi test for all methods for one-error metric

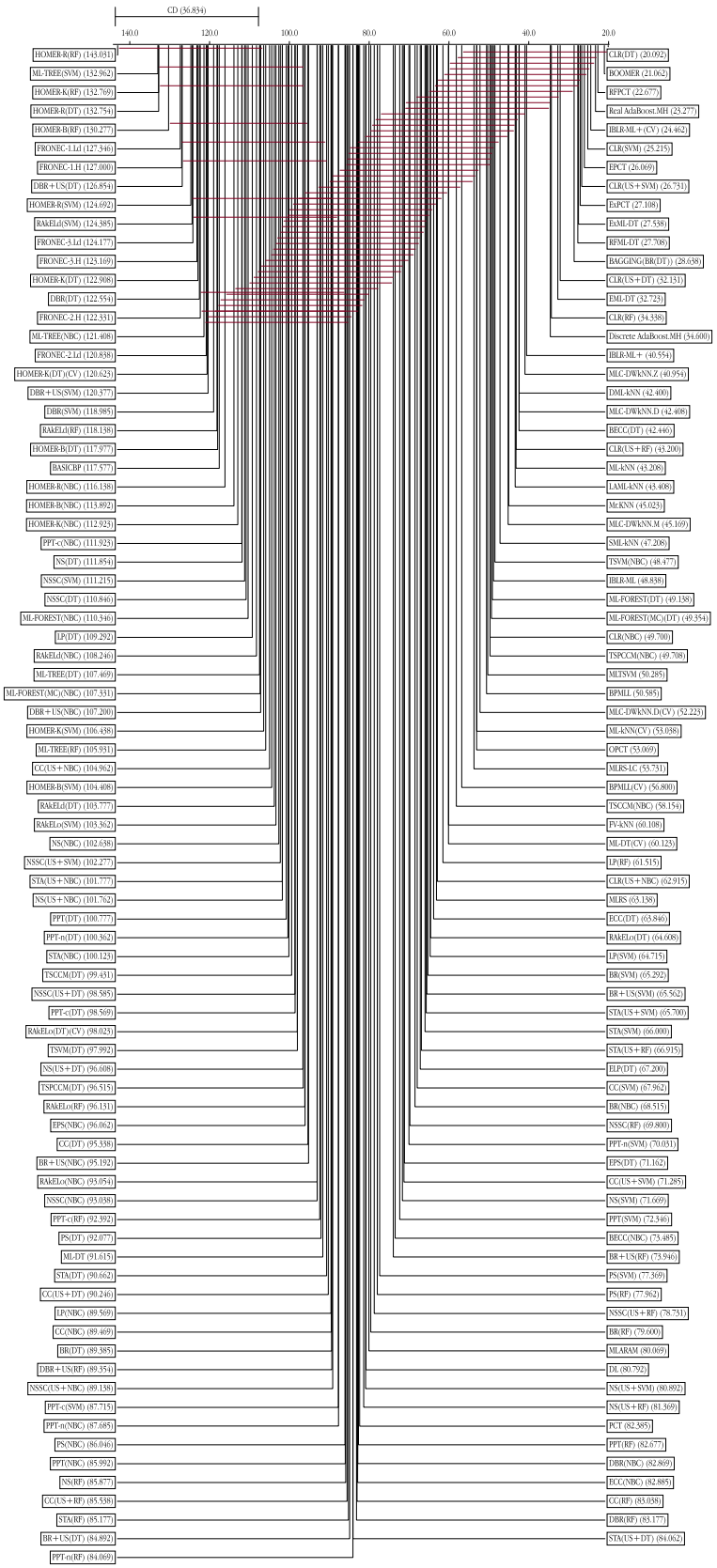


Figure 40: Nemenyi test for all methods for coverage metric

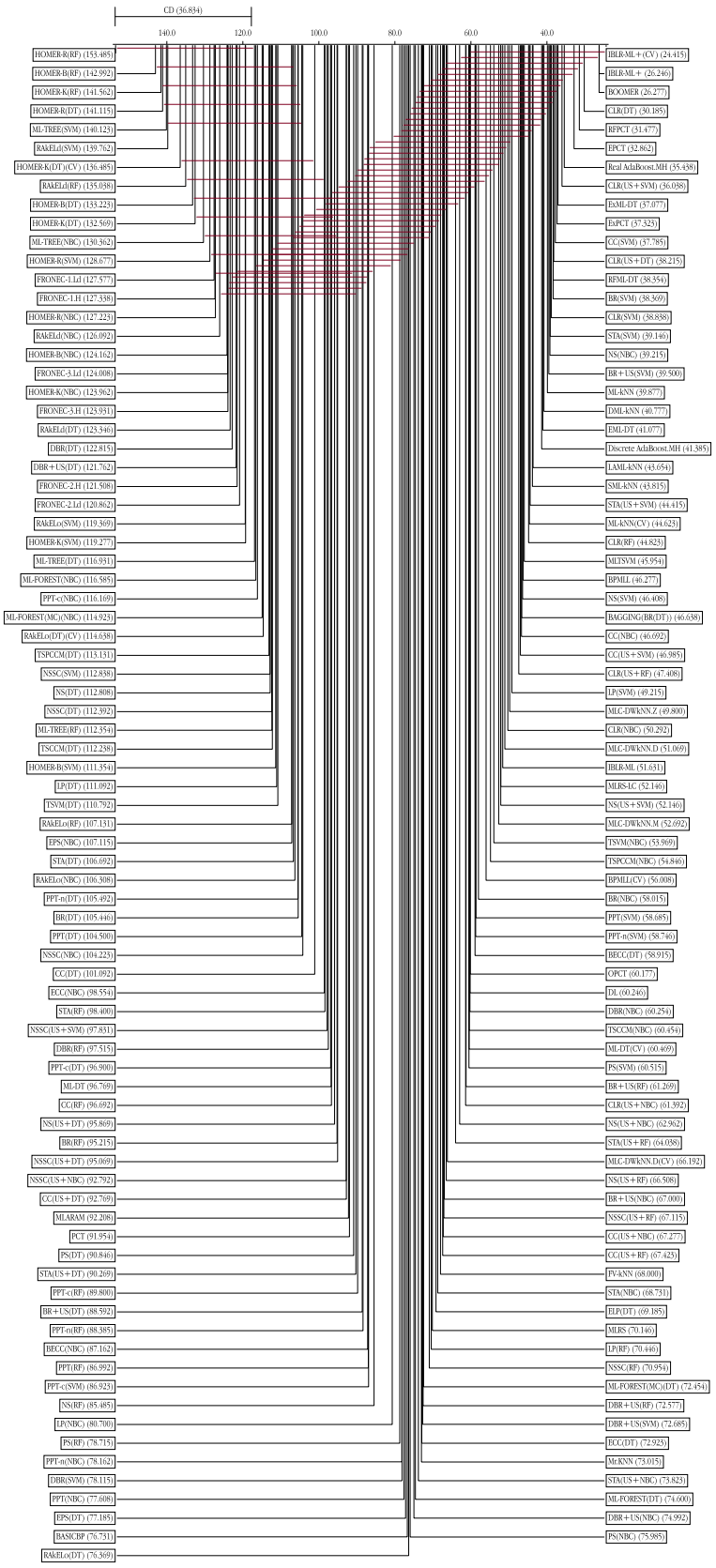


Figure 41: Nemenyi test for all methods for ranking loss metric

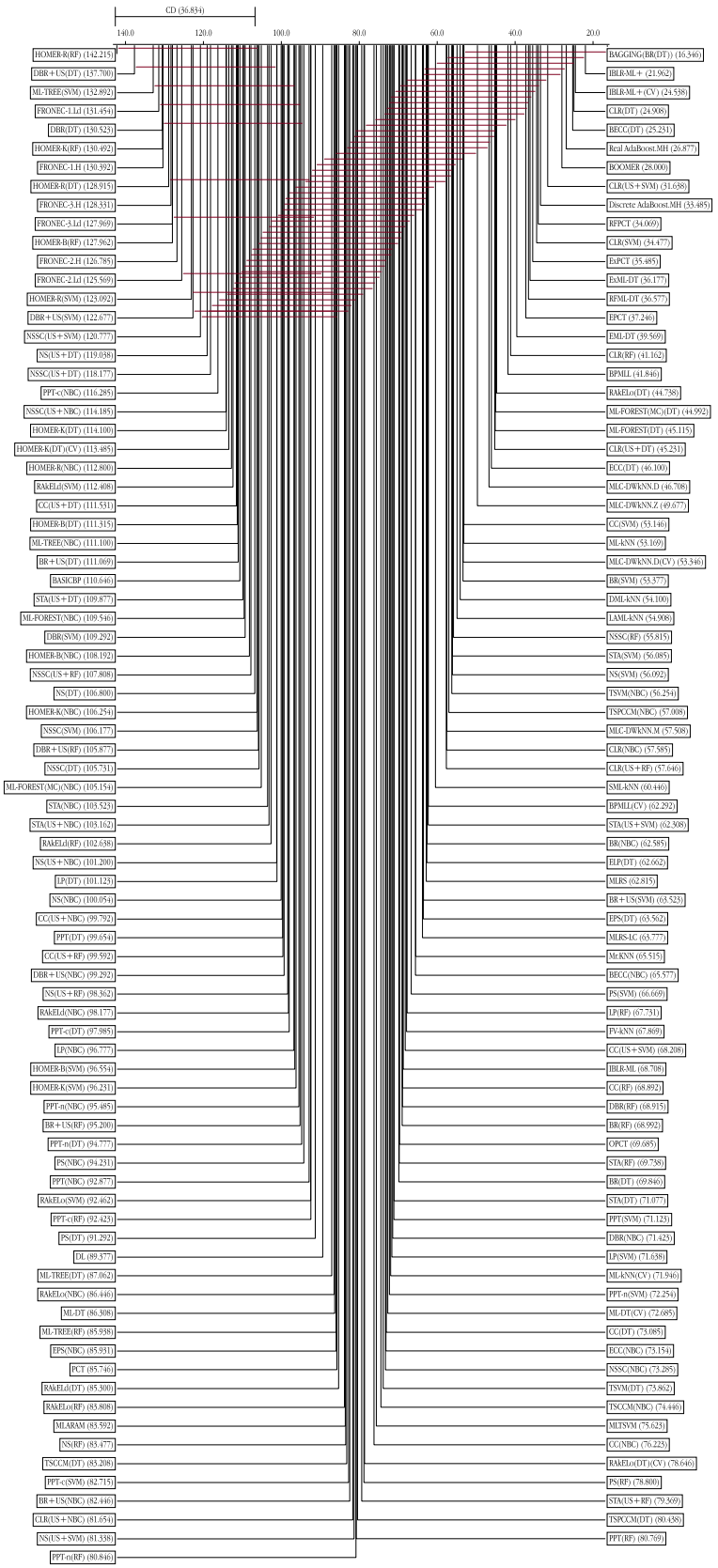


Figure 42: Nemenyi test for all methods for average precision metric

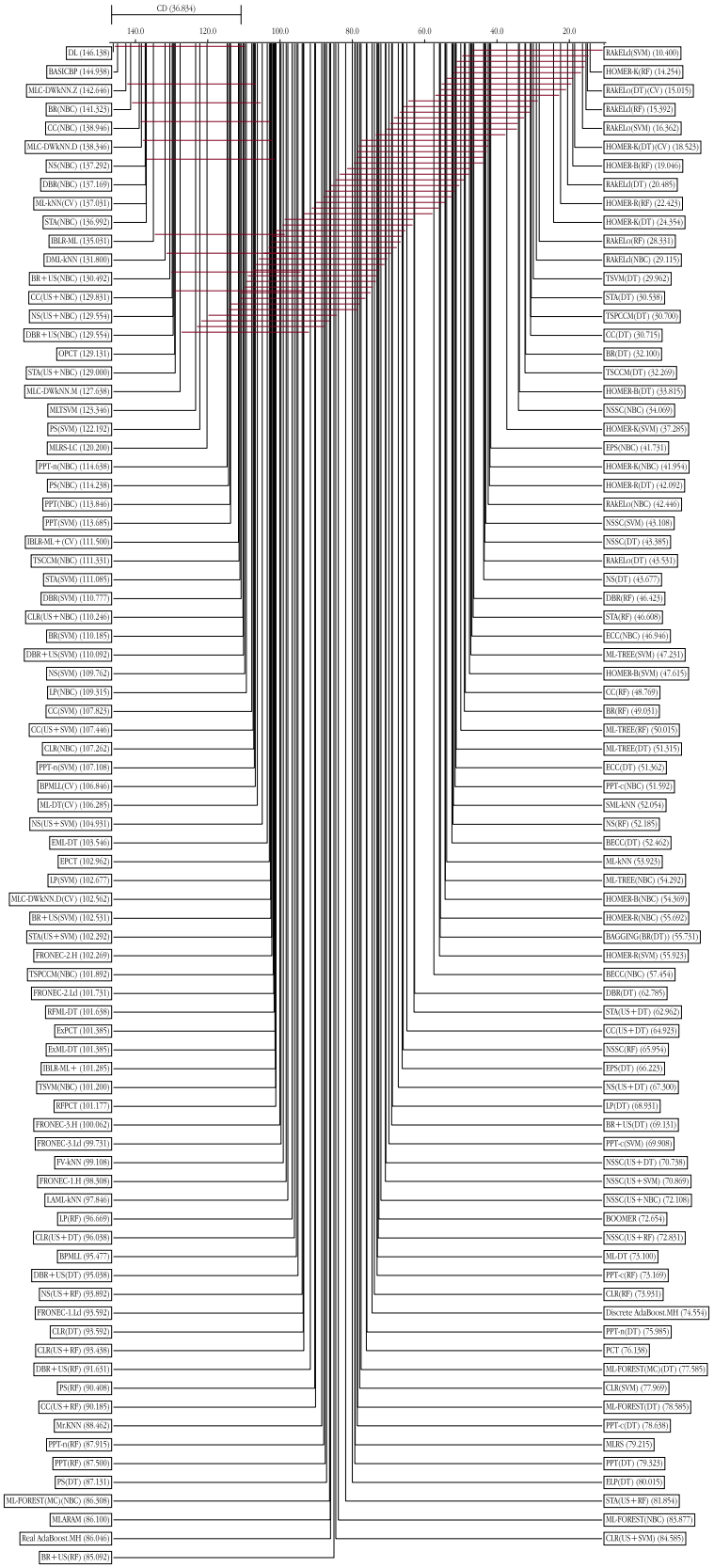


Figure 43: Nemenyi test for all methods for AUC-macro metric

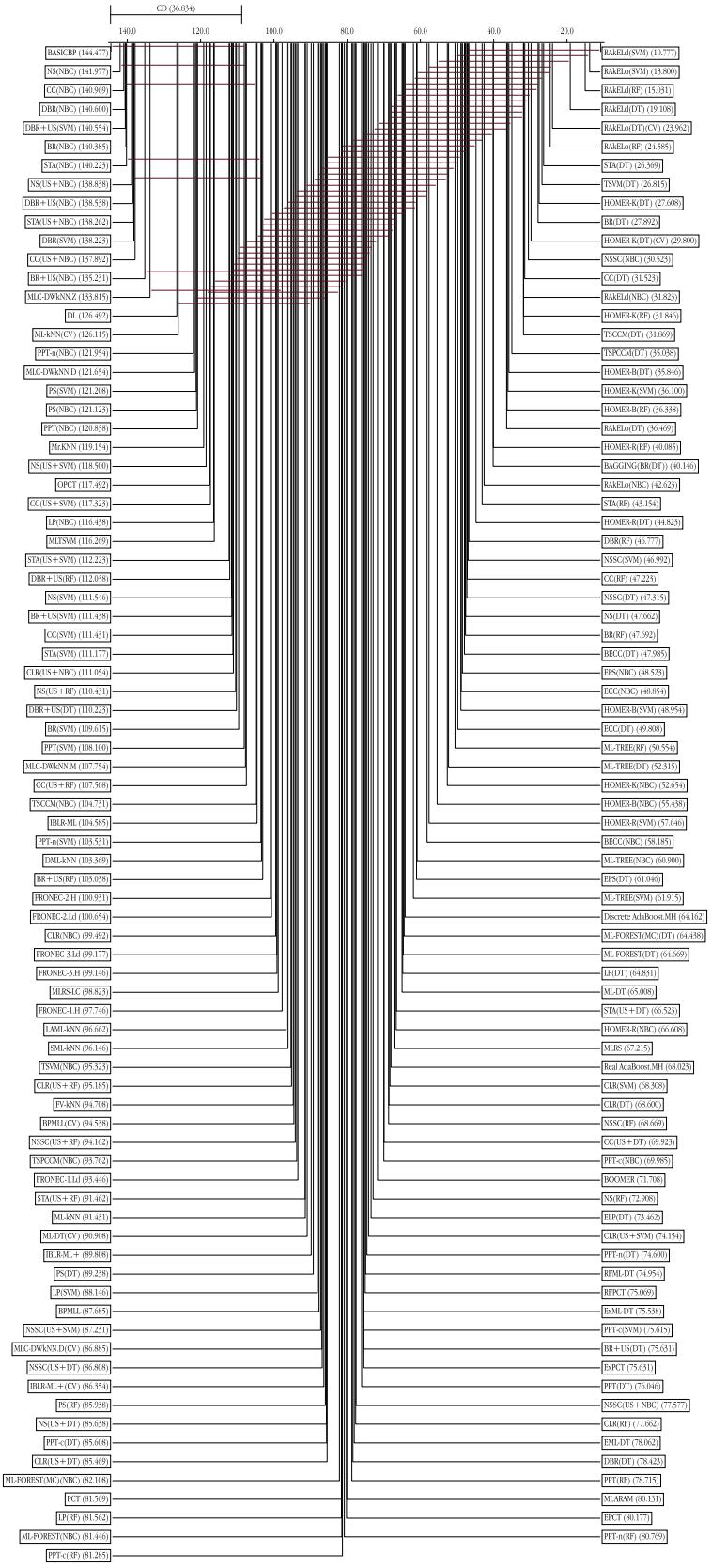


Figure 44: Nemenyi test for all methods for AUC-micro metric

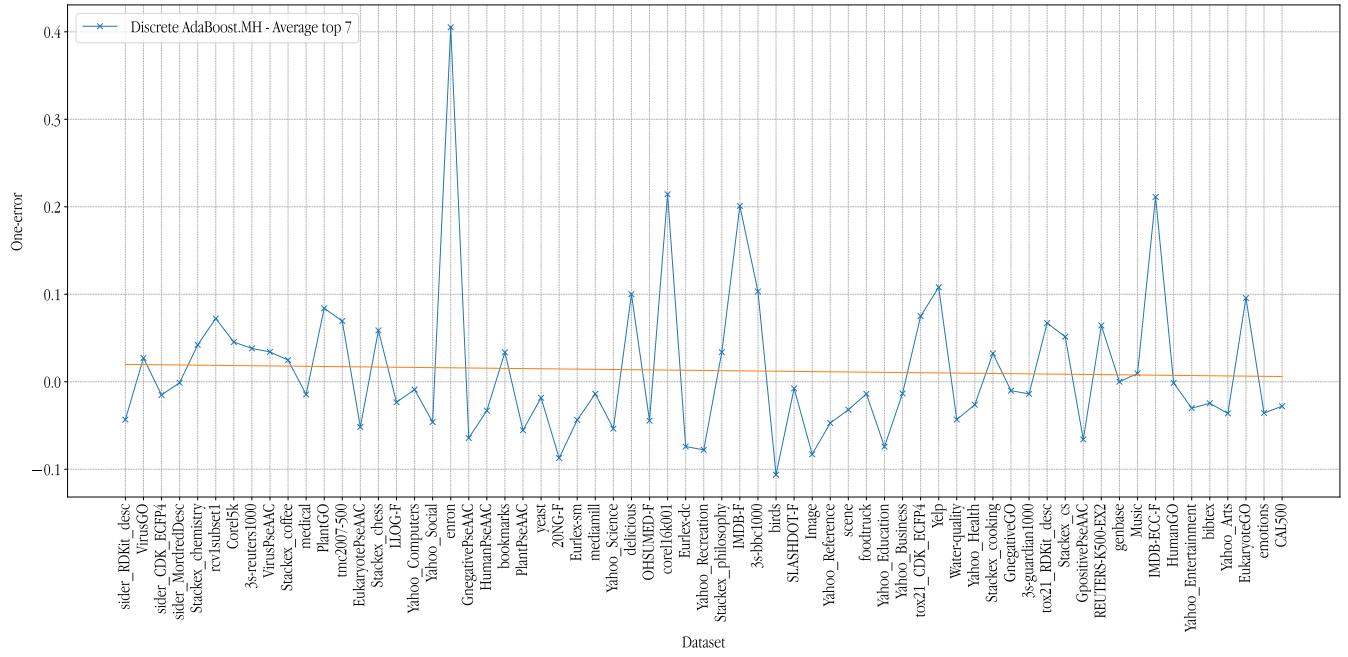


Figure 45: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

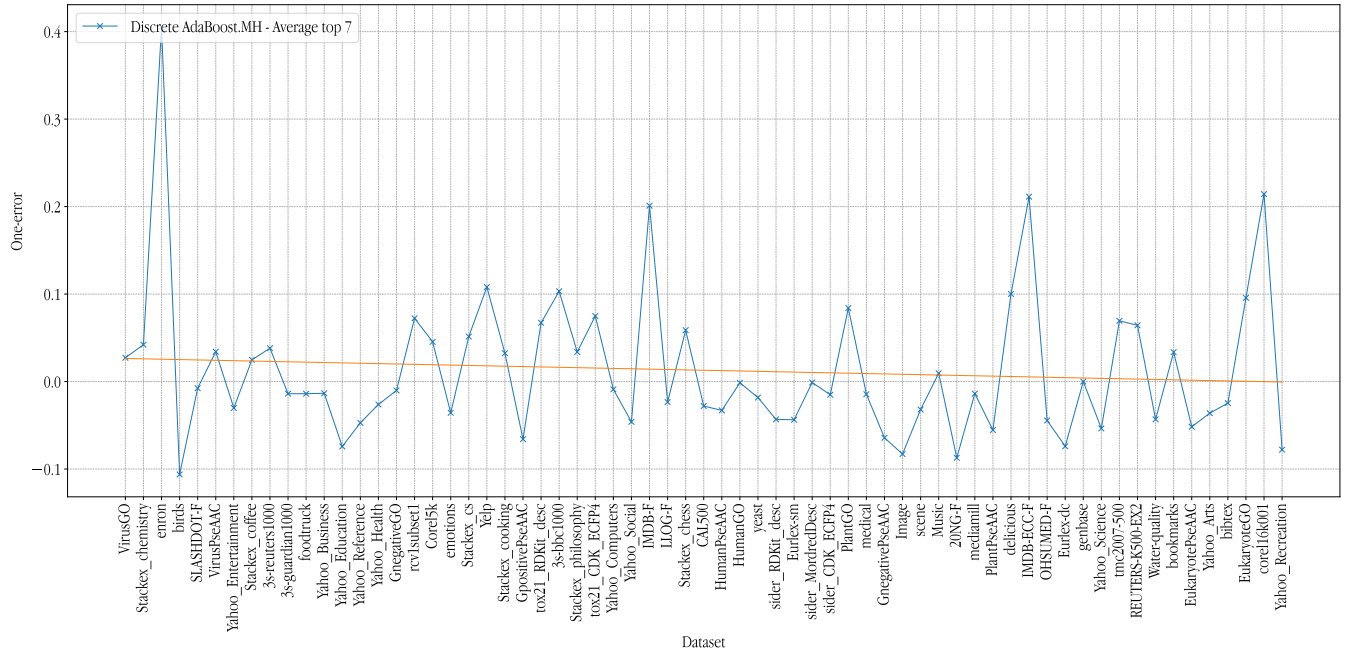


Figure 46: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

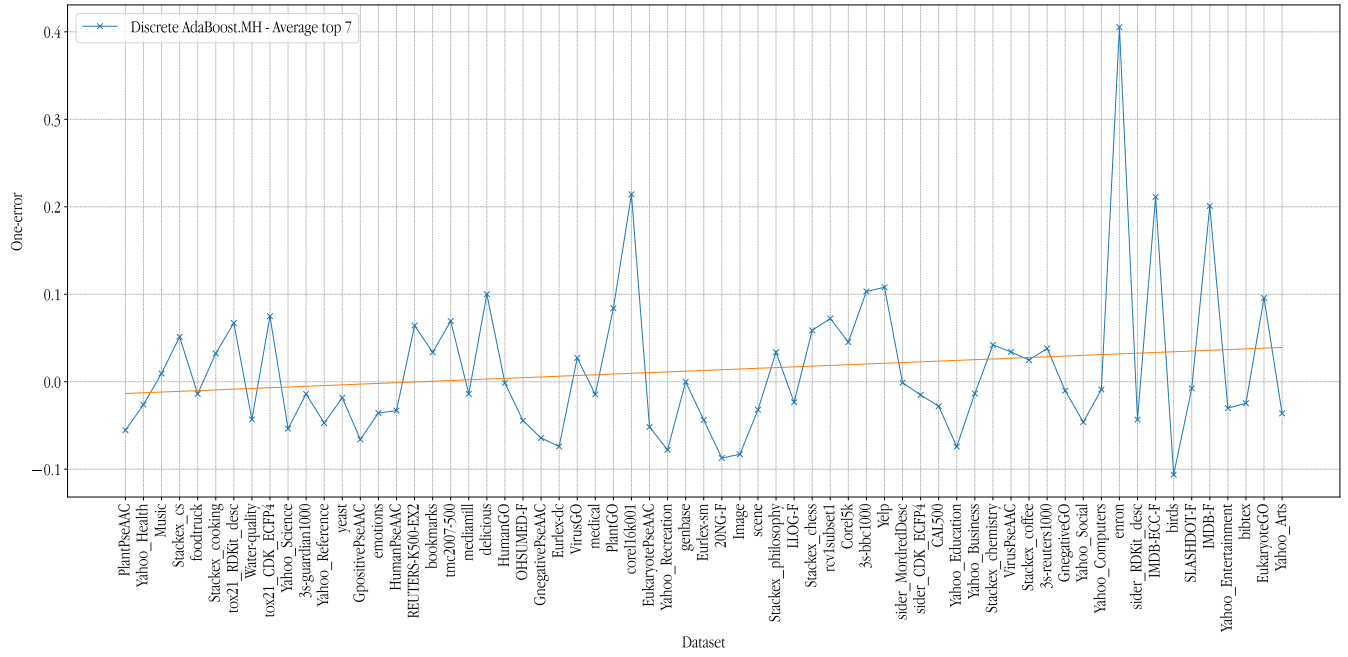


Figure 47: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

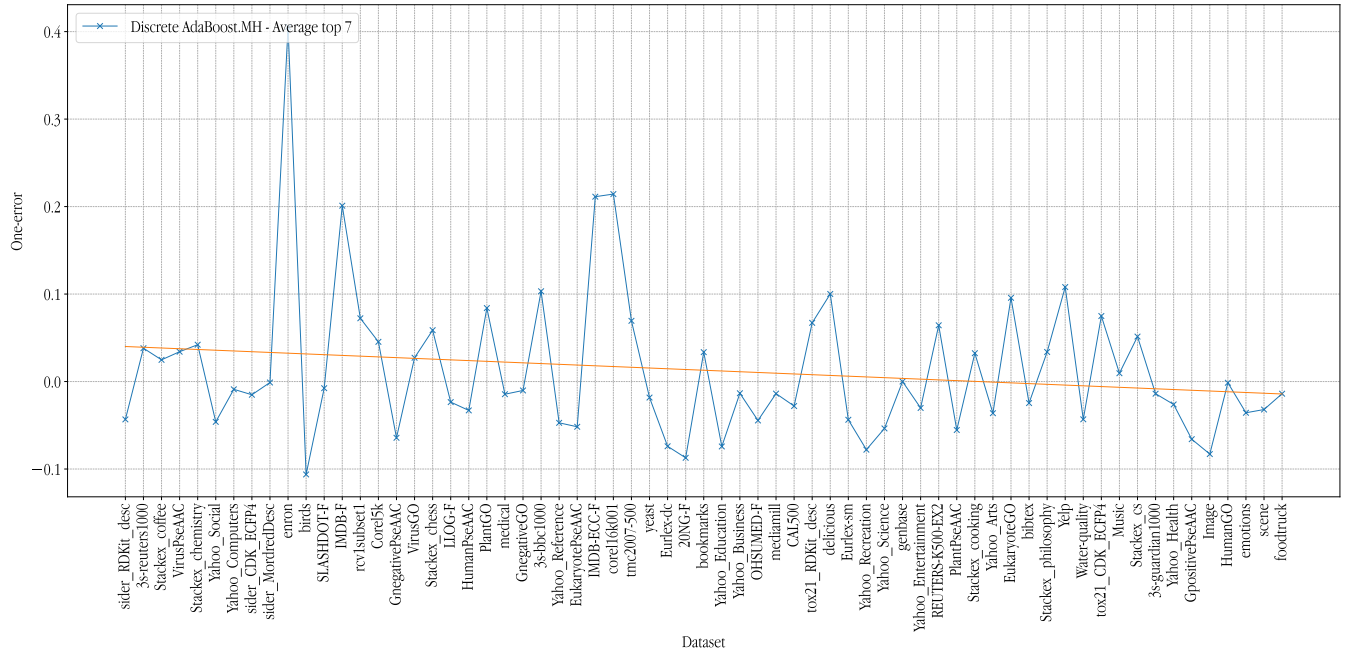


Figure 48: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

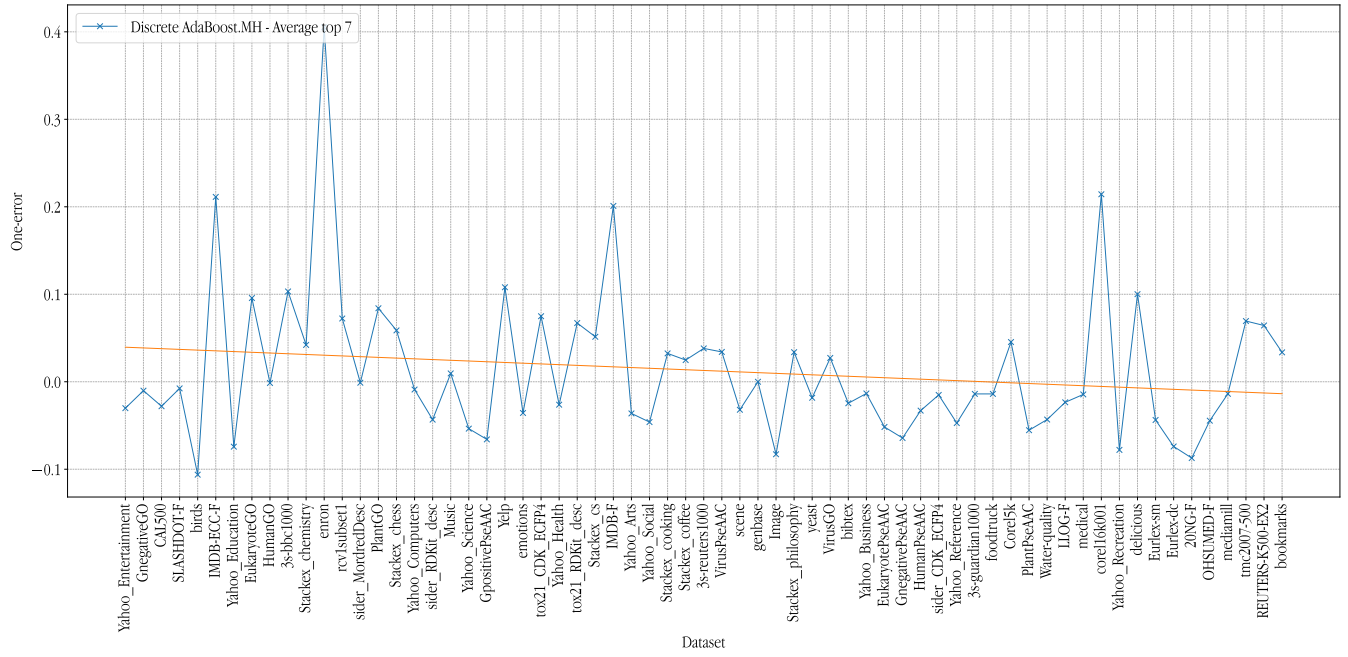


Figure 49: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

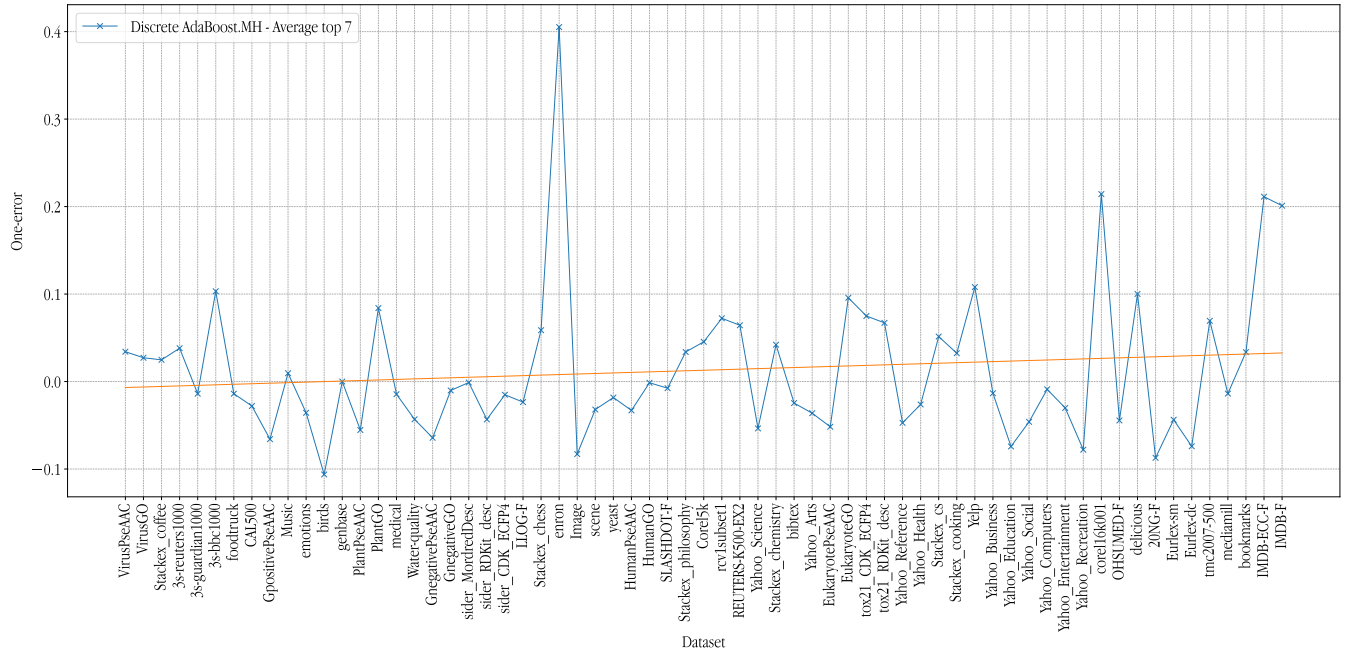


Figure 50: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

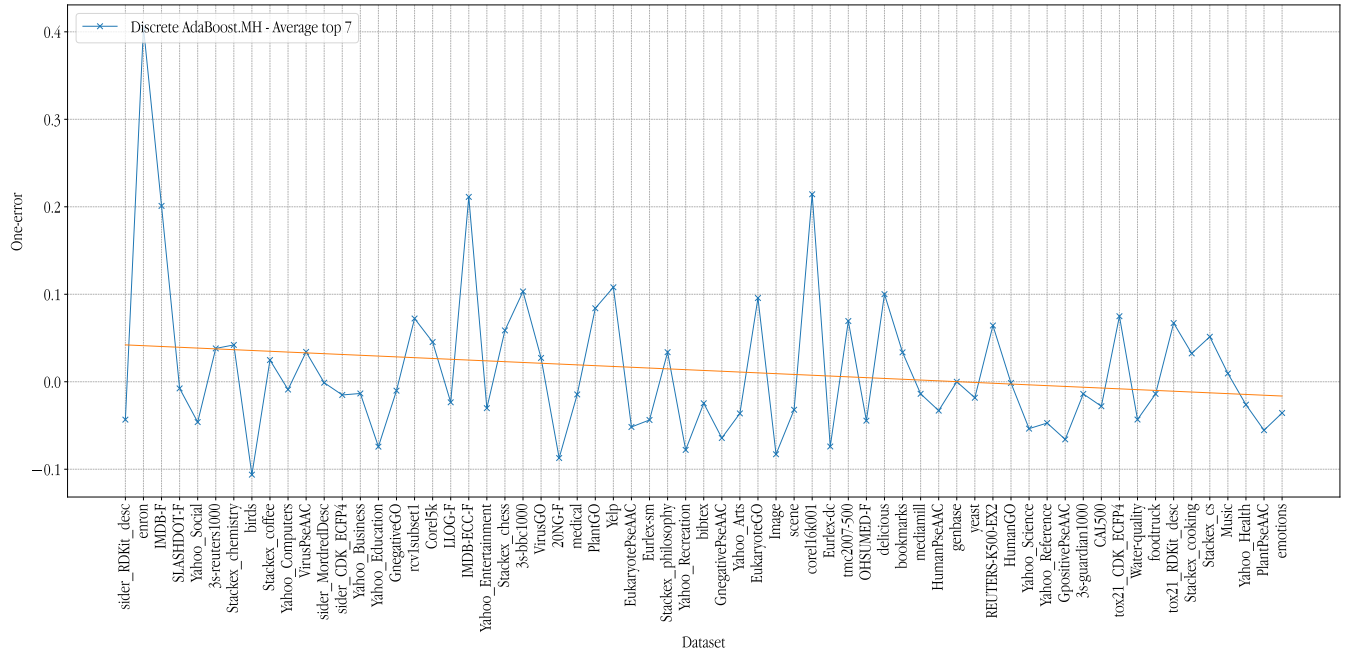


Figure 51: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

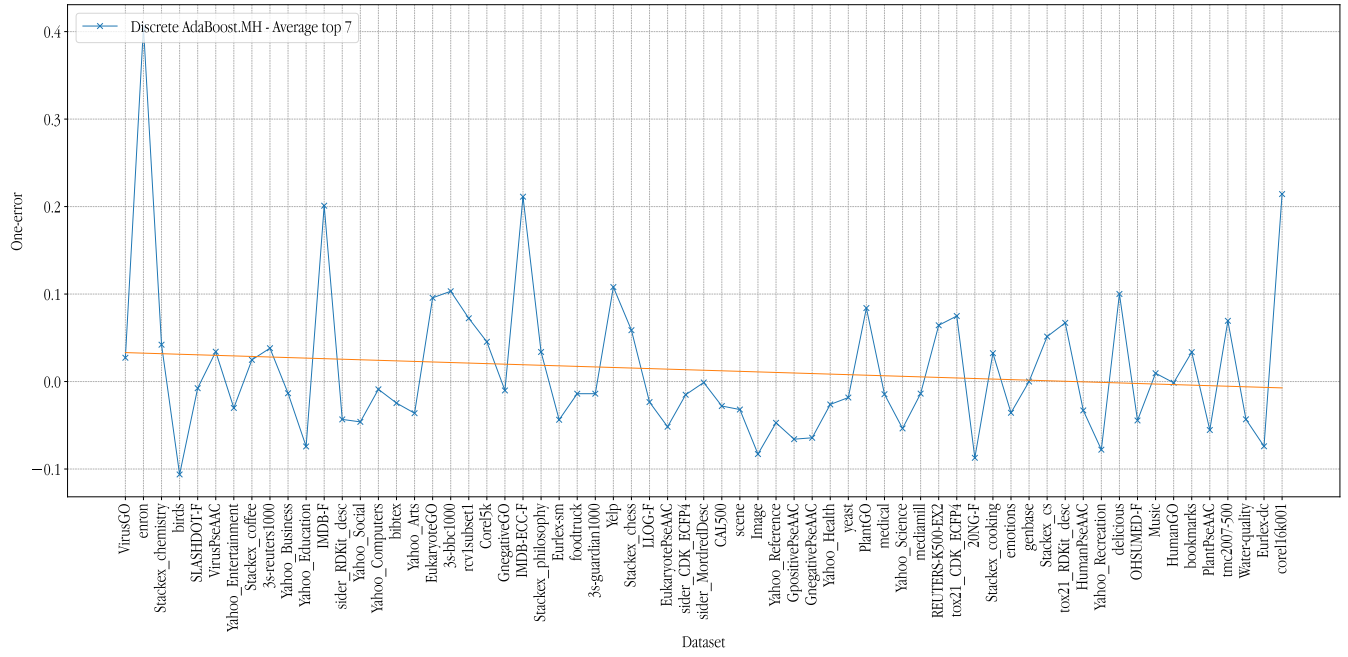


Figure 52: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

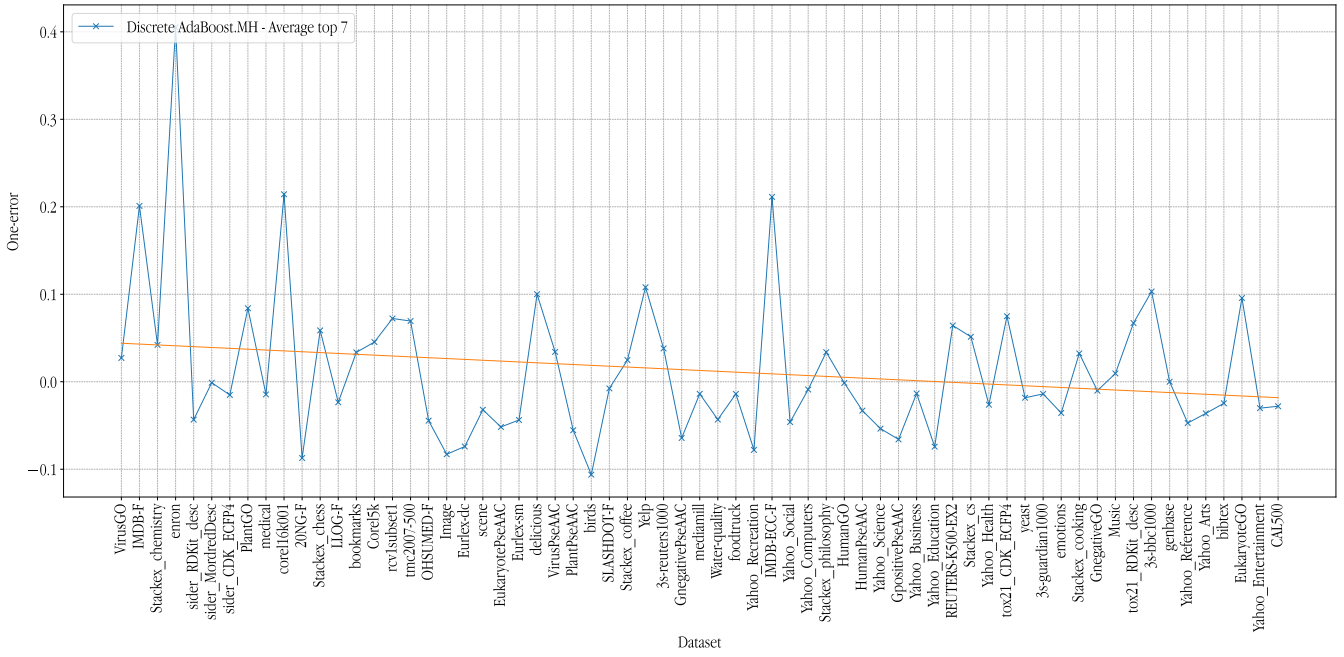


Figure 53: Difference in one-error performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

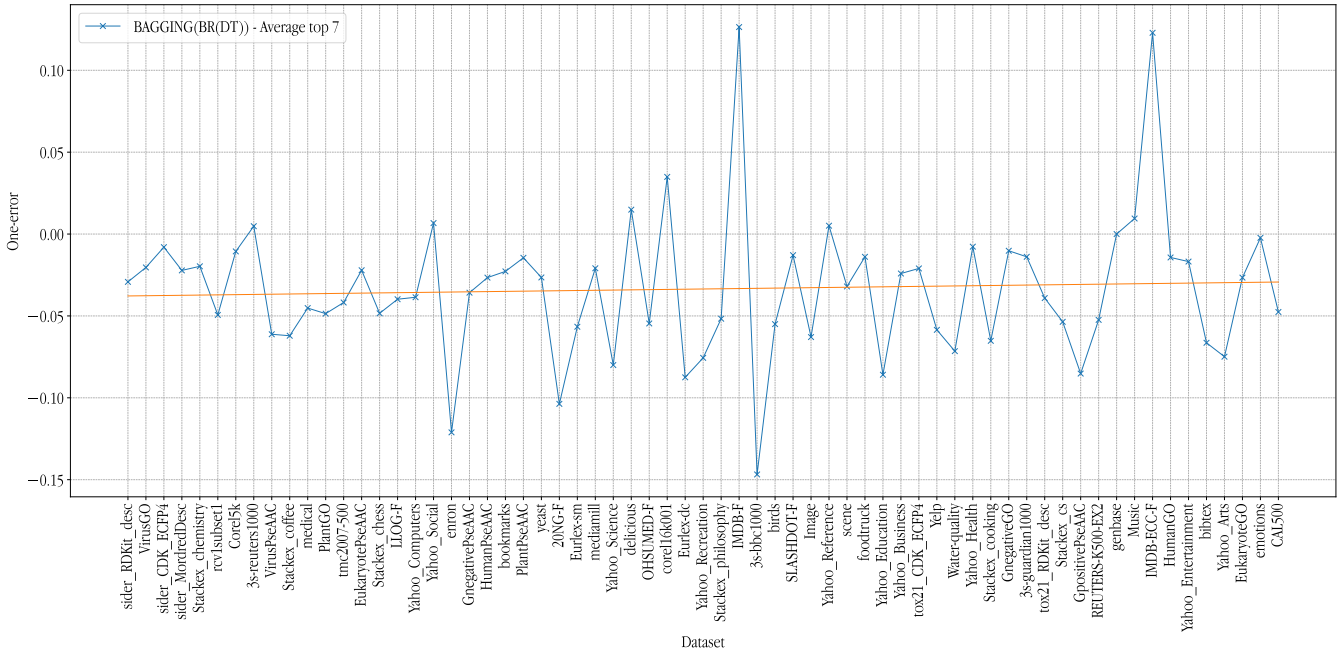


Figure 54: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

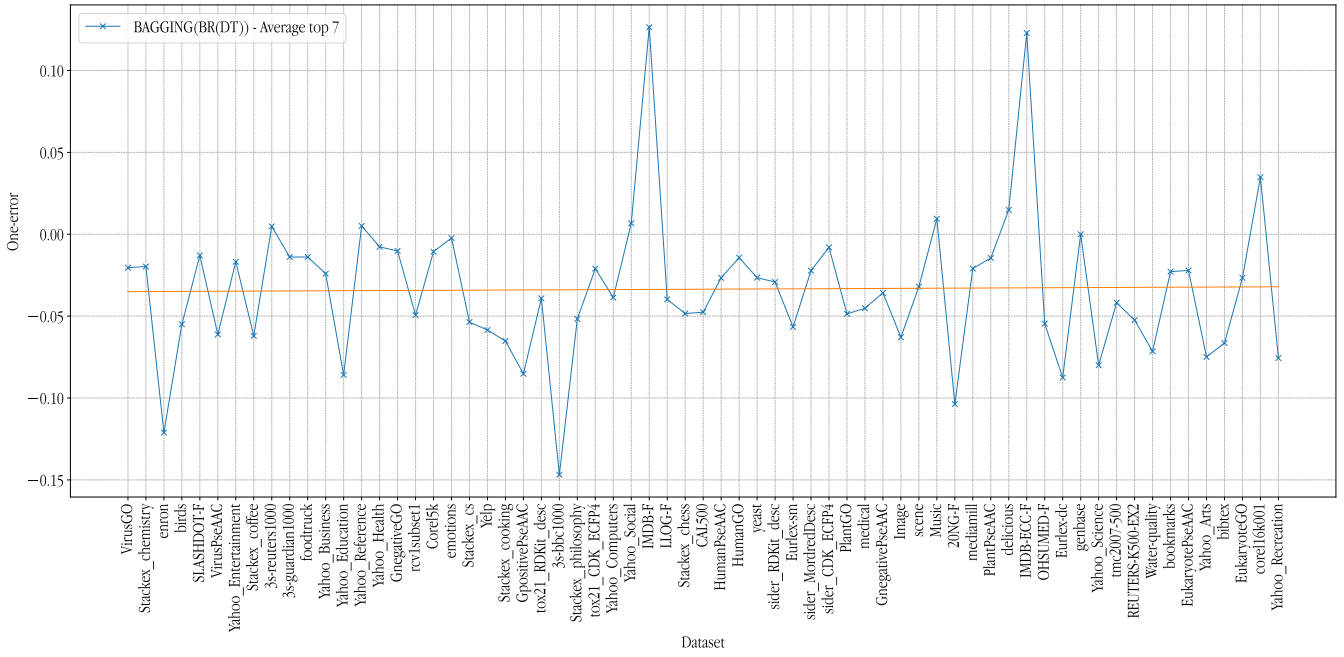


Figure 55: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

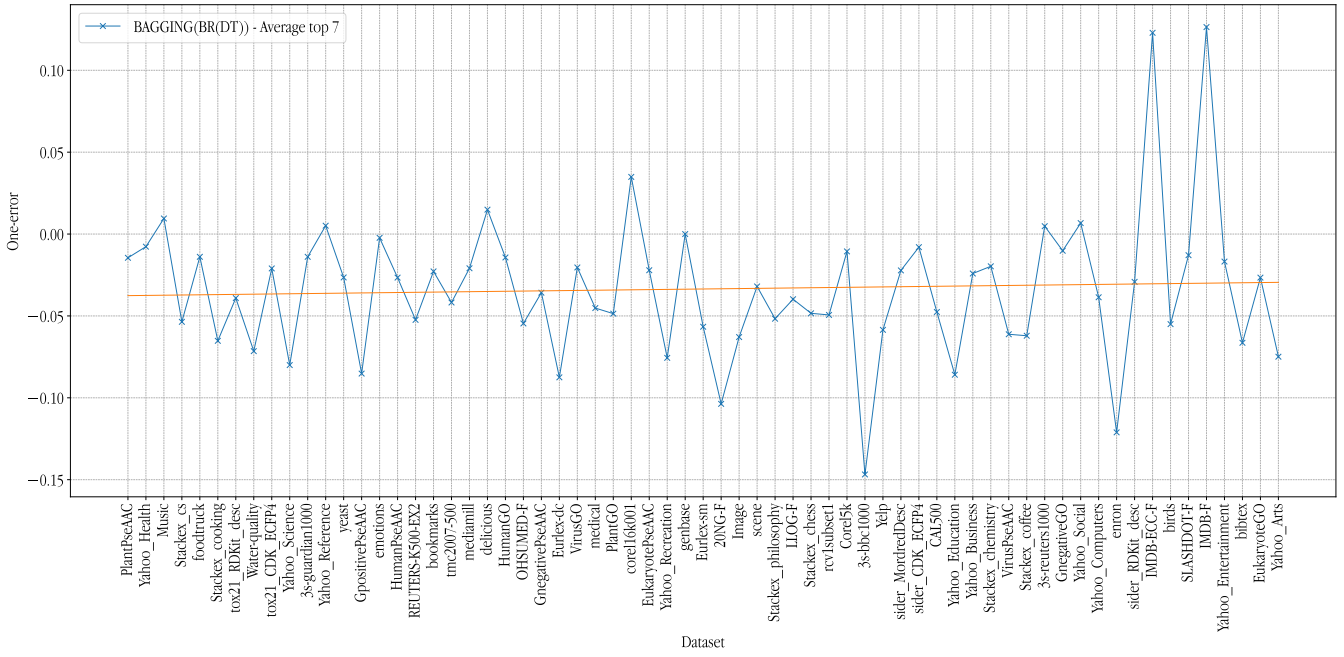


Figure 56: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

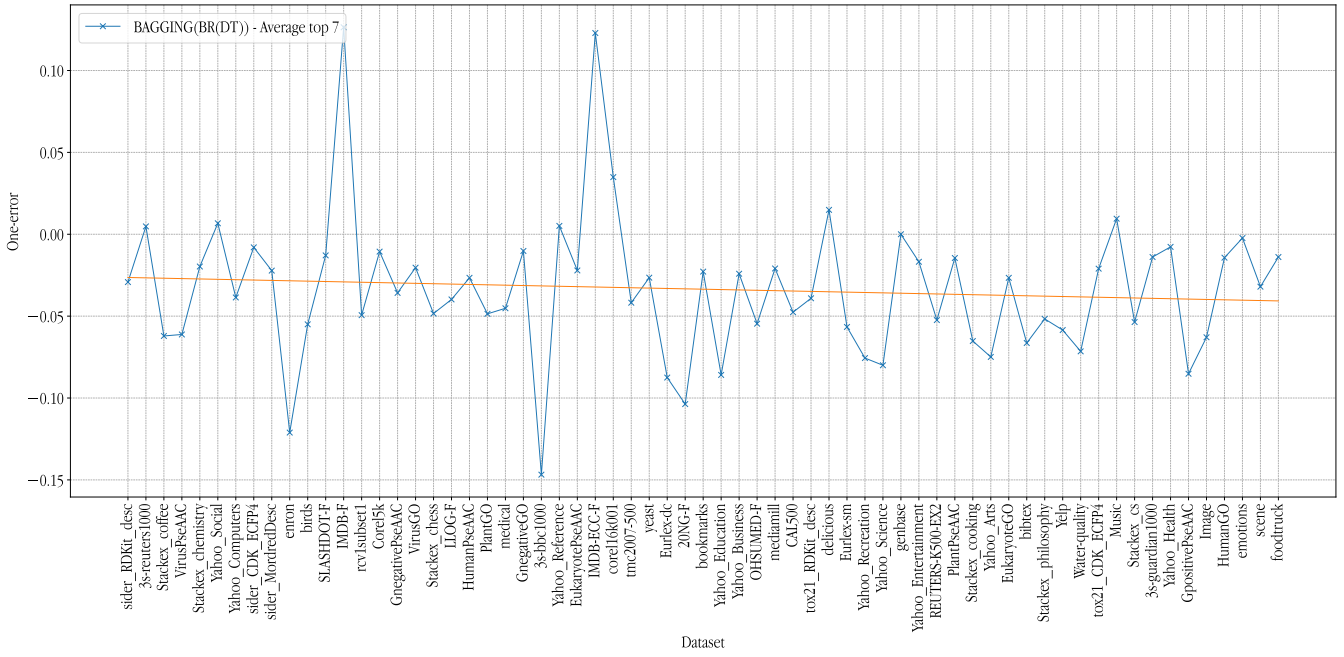


Figure 57: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

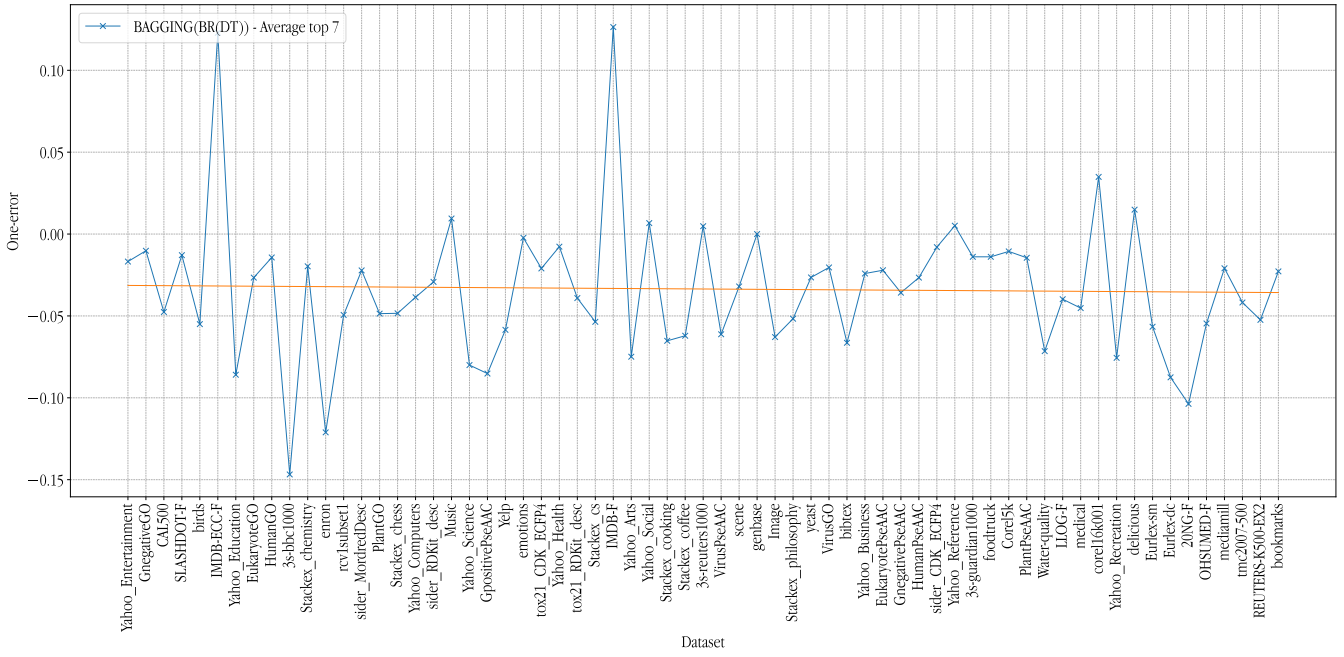


Figure 58: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

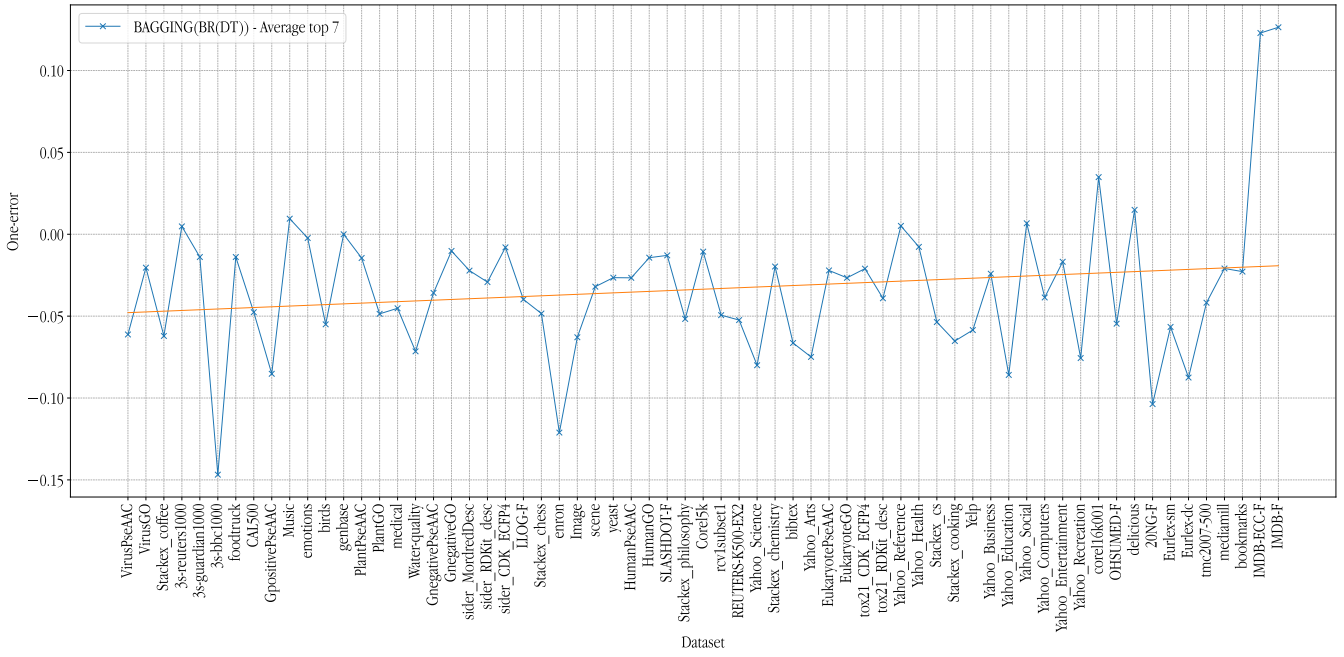


Figure 59: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

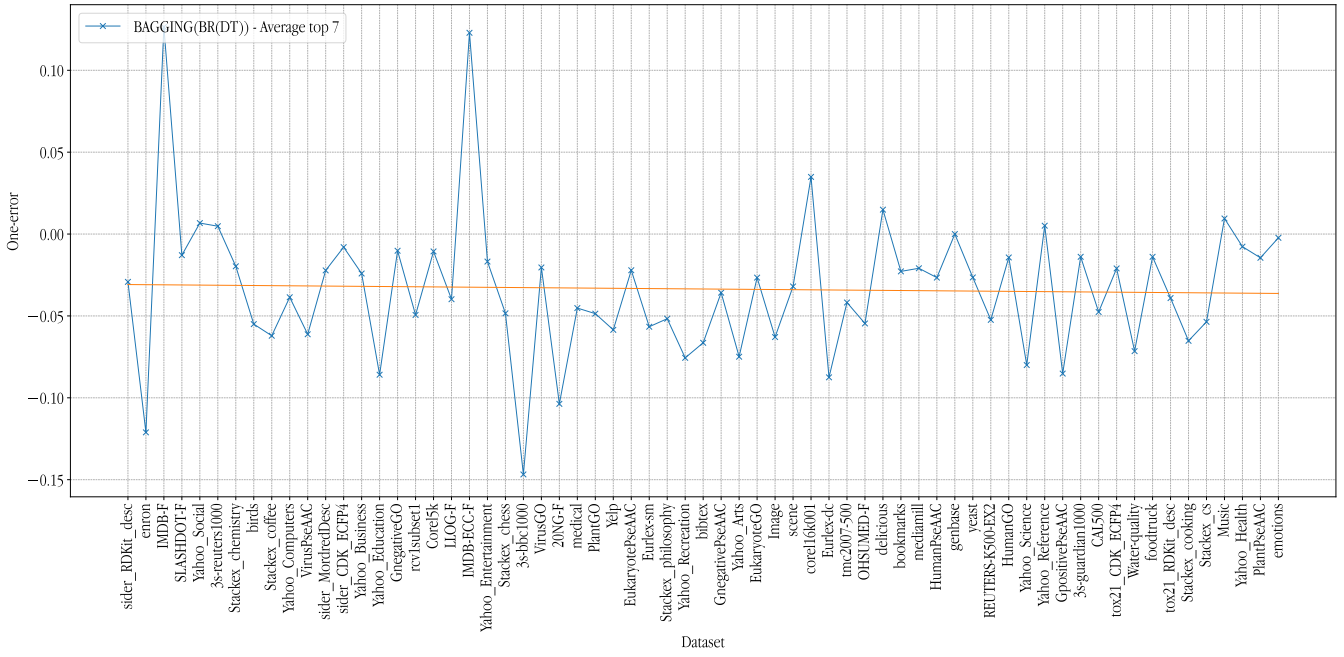


Figure 60: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

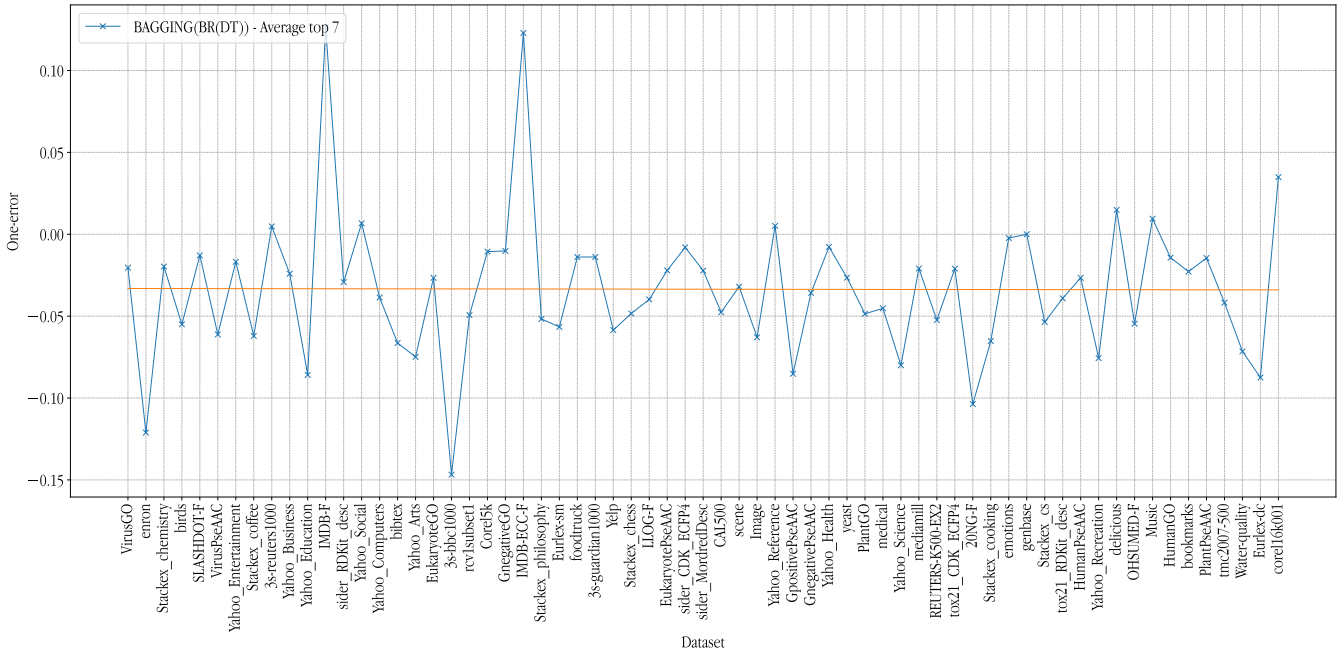


Figure 61: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

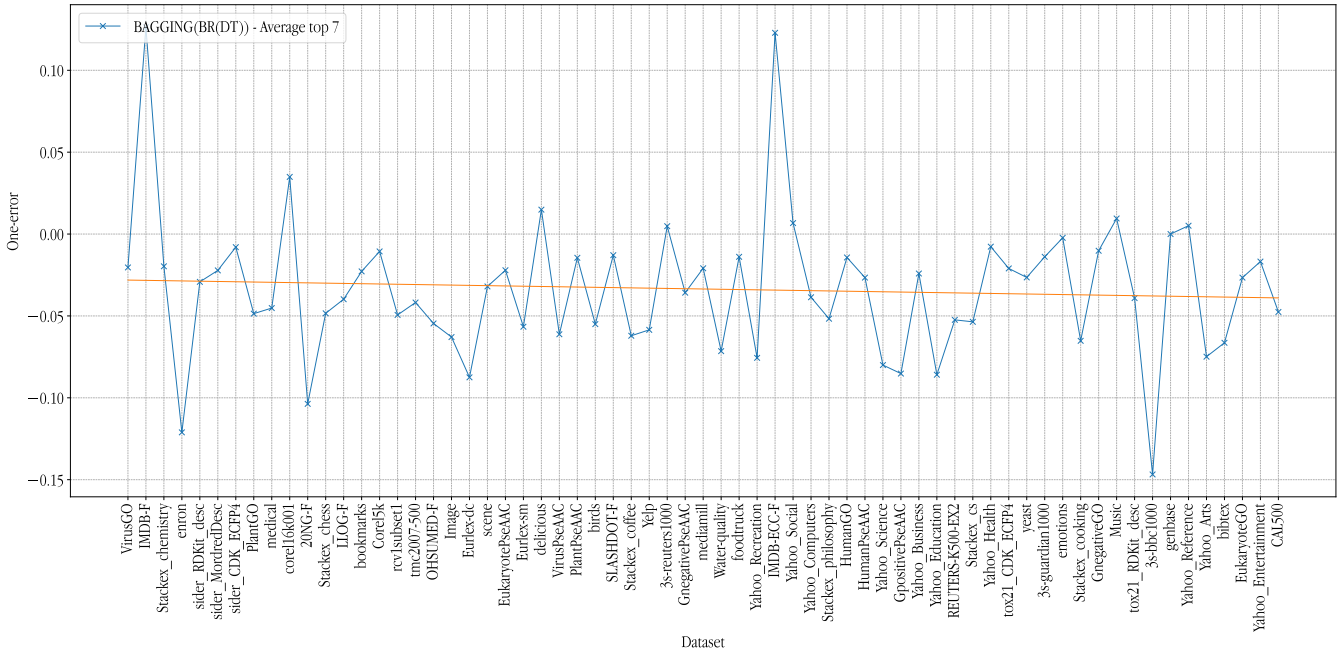


Figure 62: Difference in one-error performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

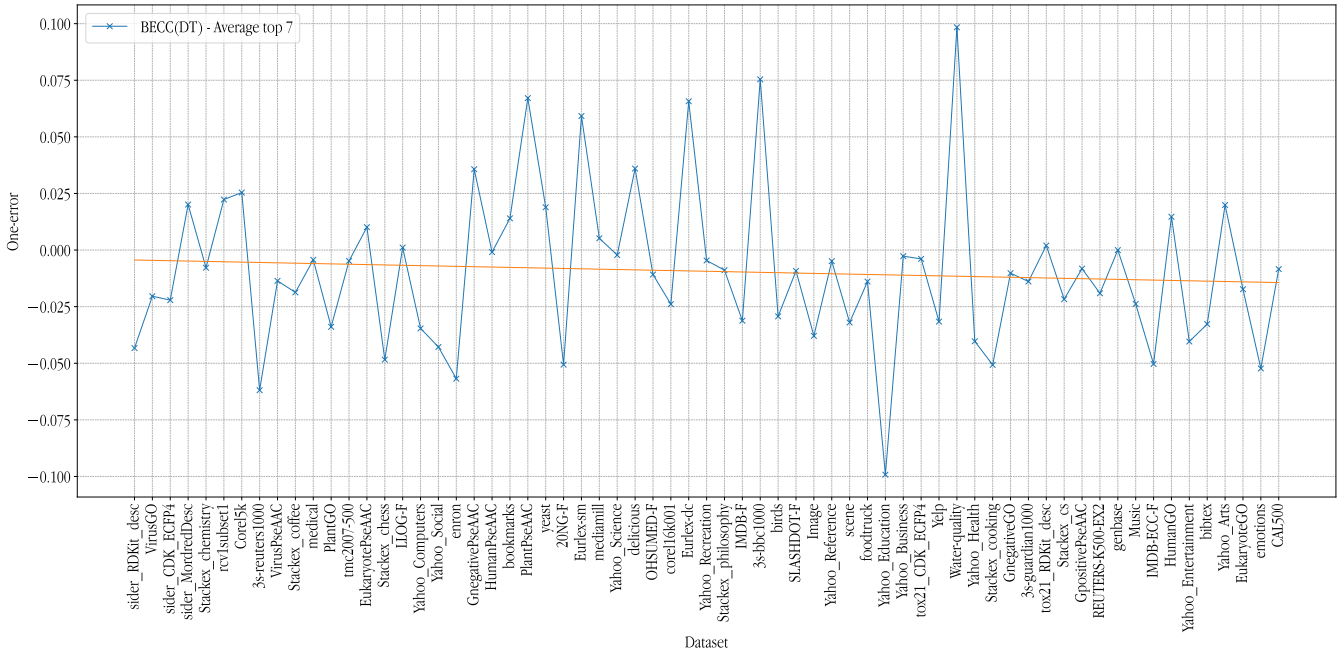


Figure 63: Difference in one-error performance between BECC and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

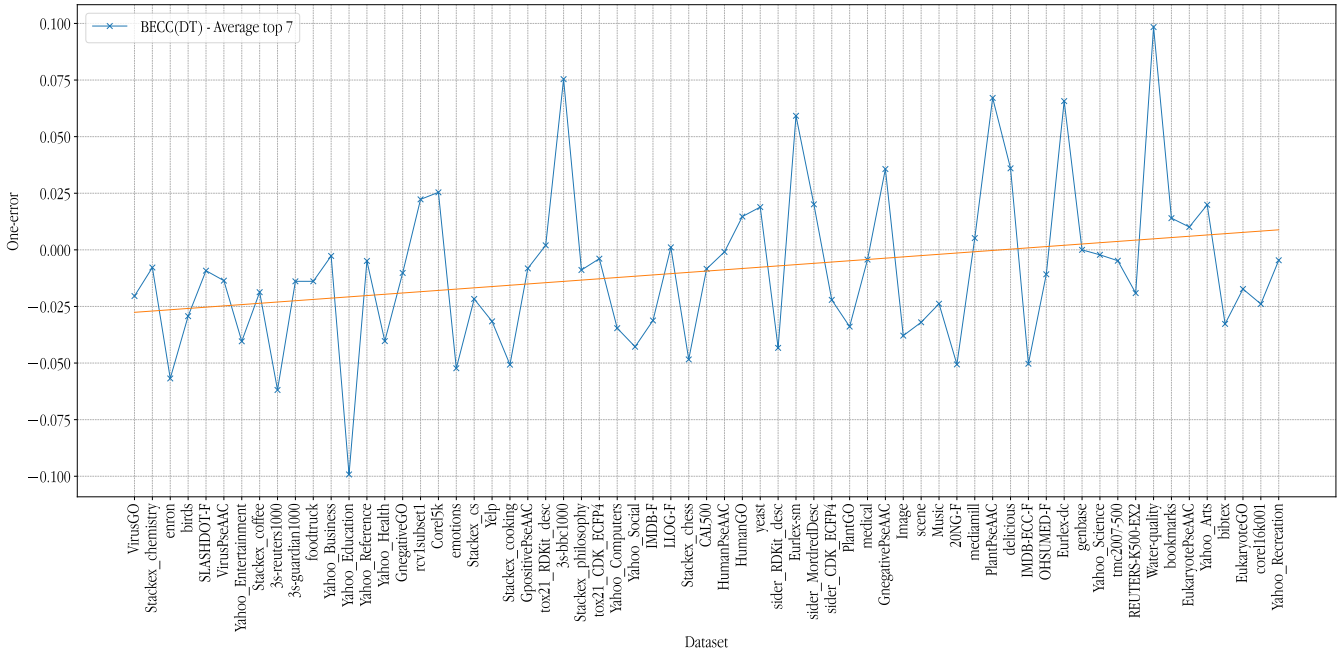


Figure 64: Difference in one-error performance between BECC and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

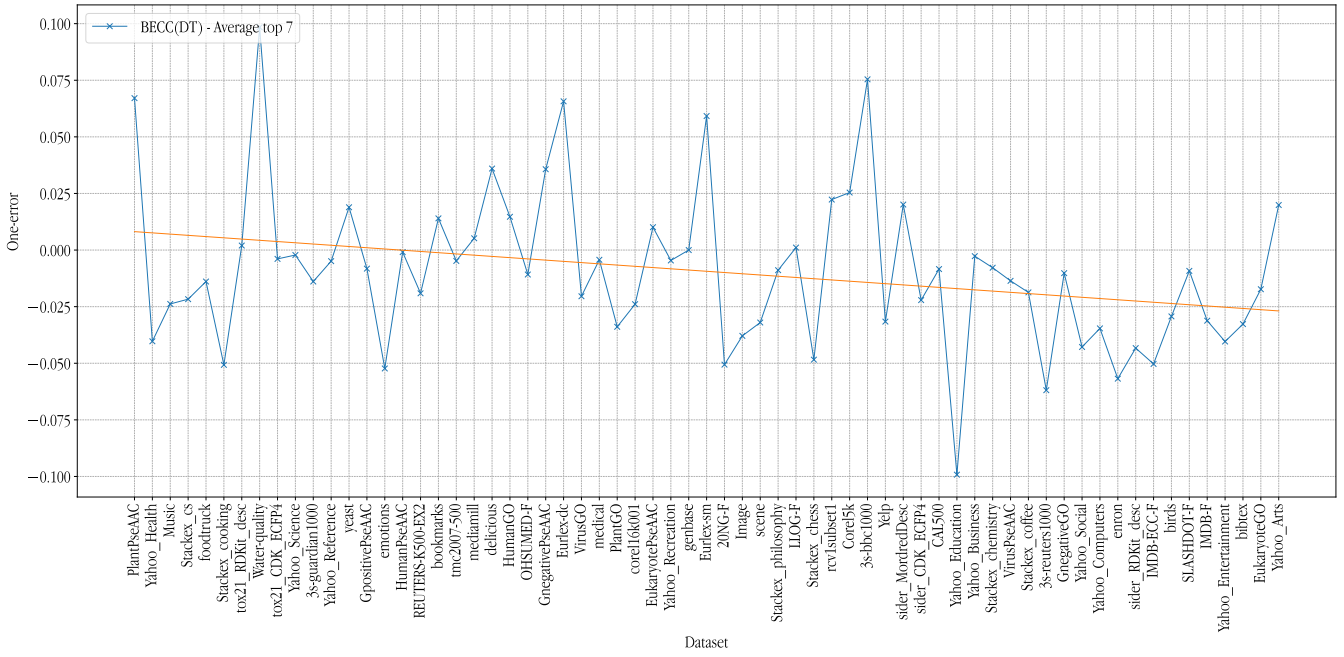


Figure 65: Difference in one-error performance between BECC and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

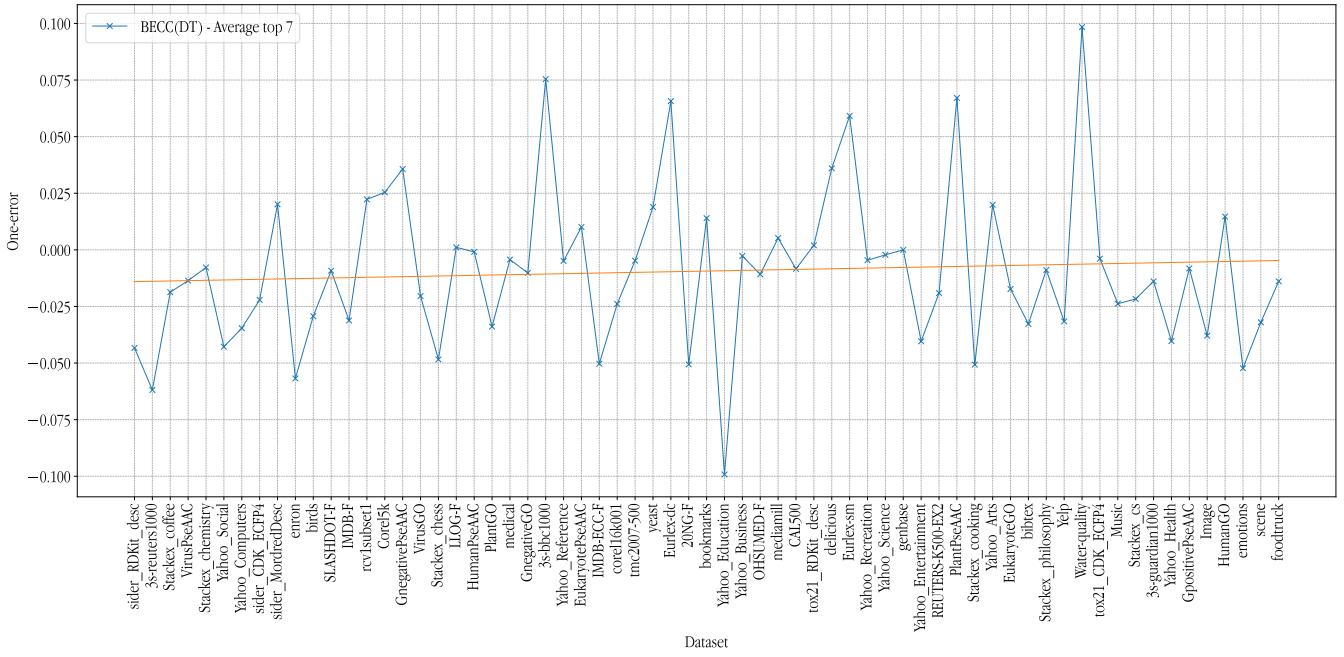


Figure 66: Difference in one-error performance between BECC and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

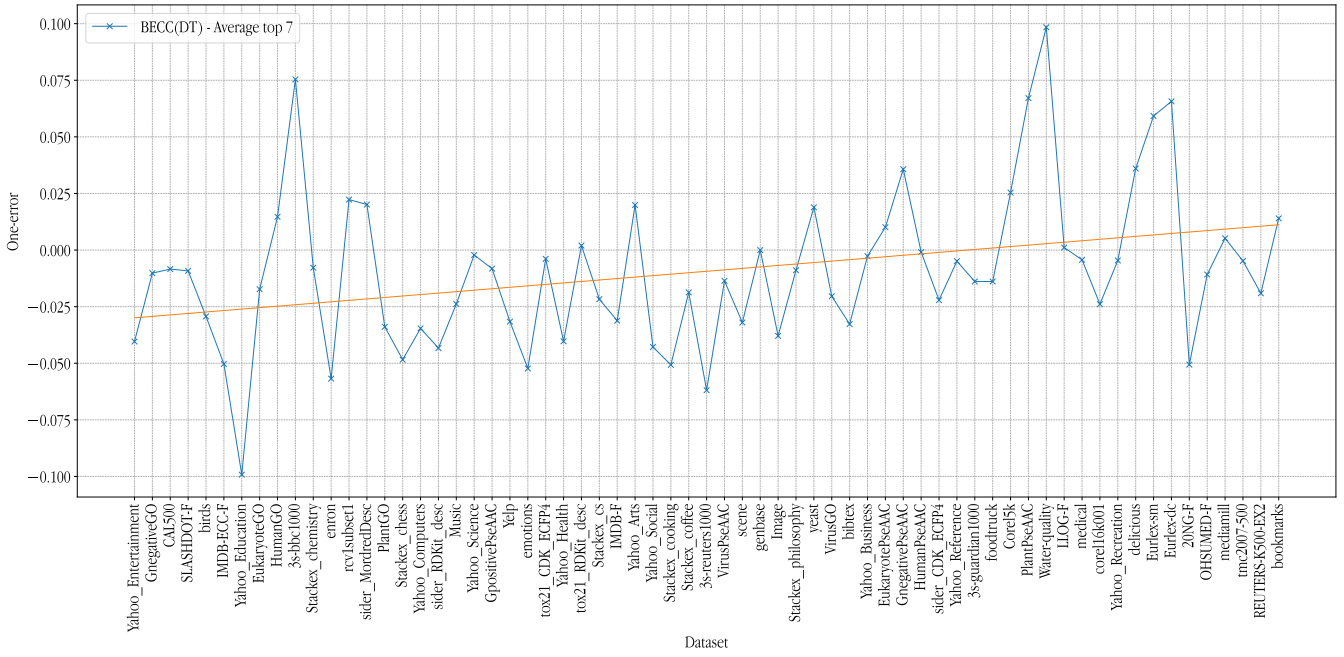


Figure 67: Difference in one-error performance between BECC and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

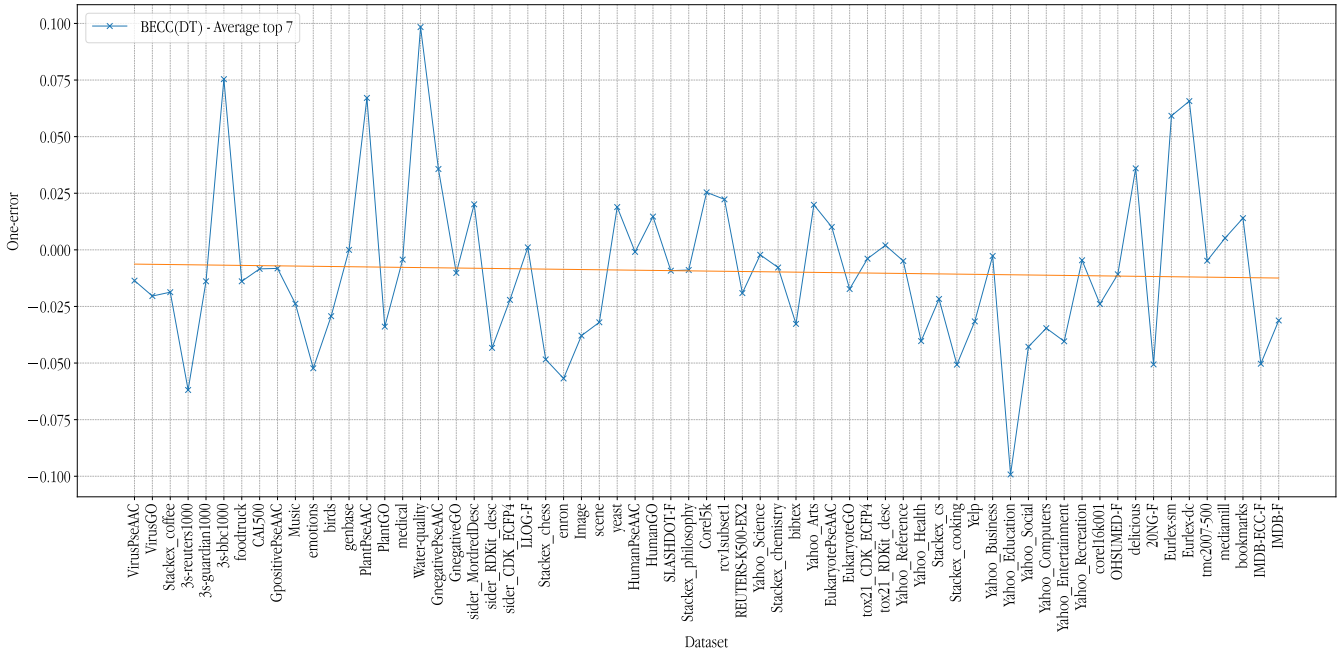


Figure 68: Difference in one-error performance between BECC and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

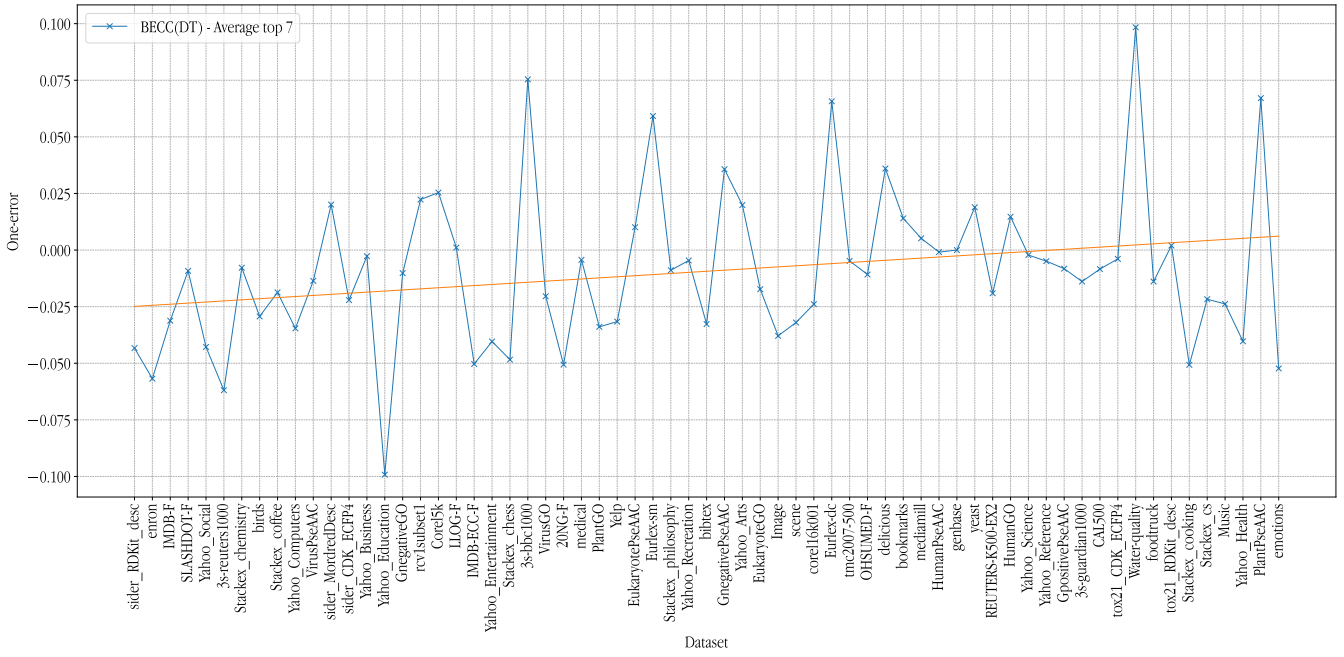


Figure 69: Difference in one-error performance between BECC and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

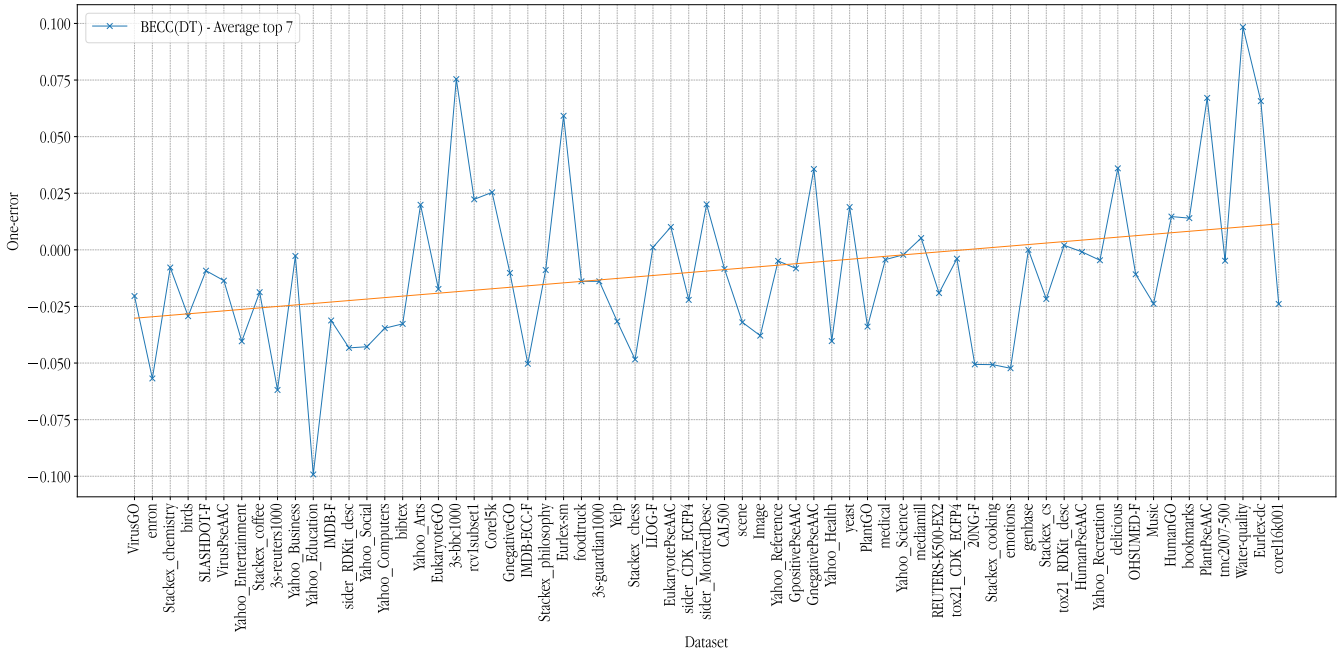


Figure 70: Difference in one-error performance between BECC and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

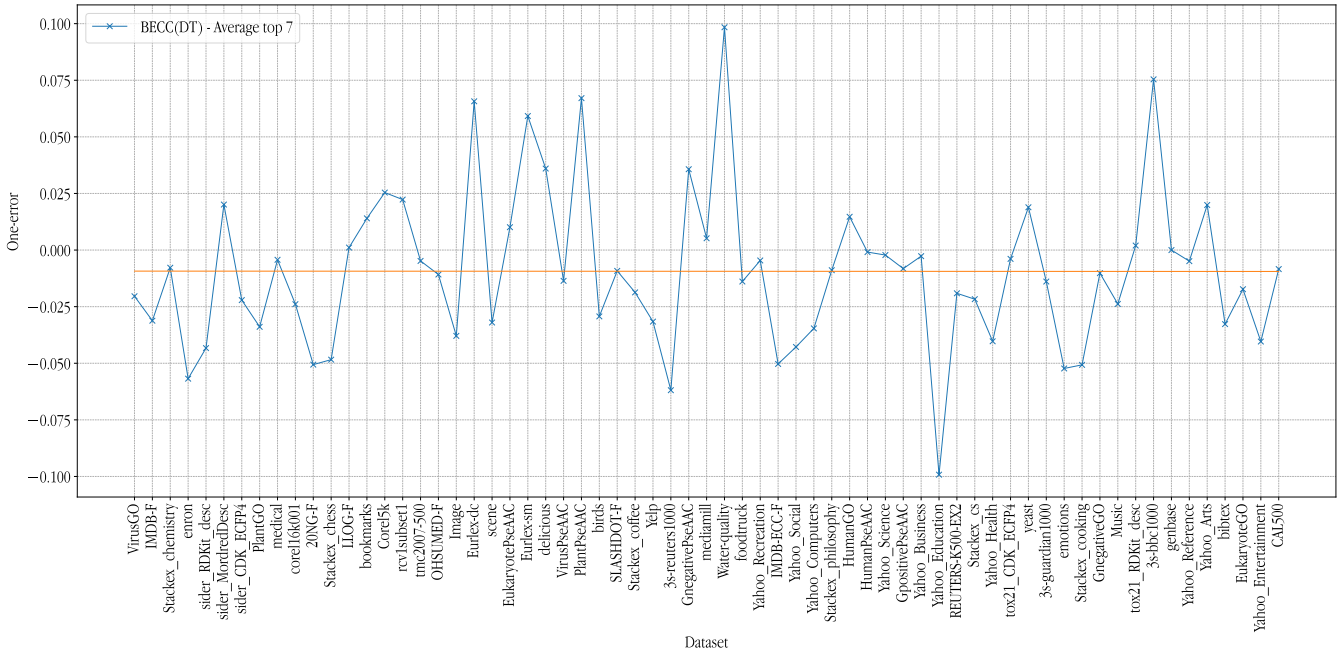


Figure 71: Difference in one-error performance between BECC and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

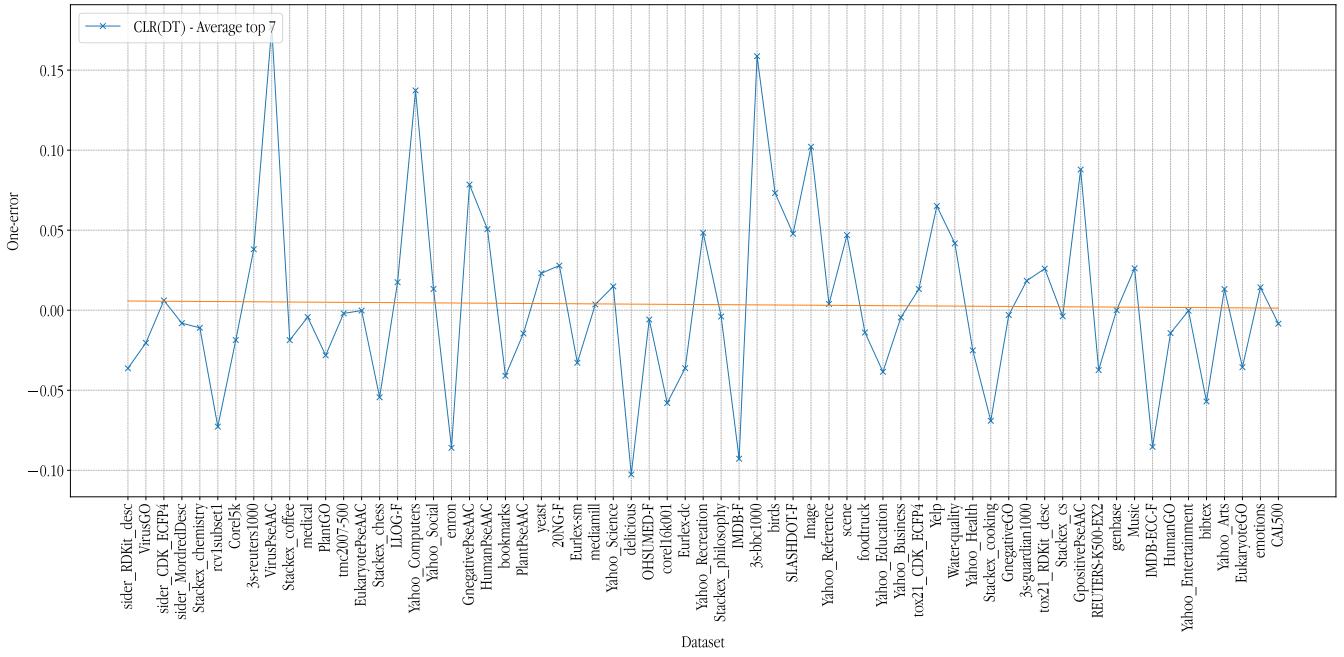


Figure 72: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

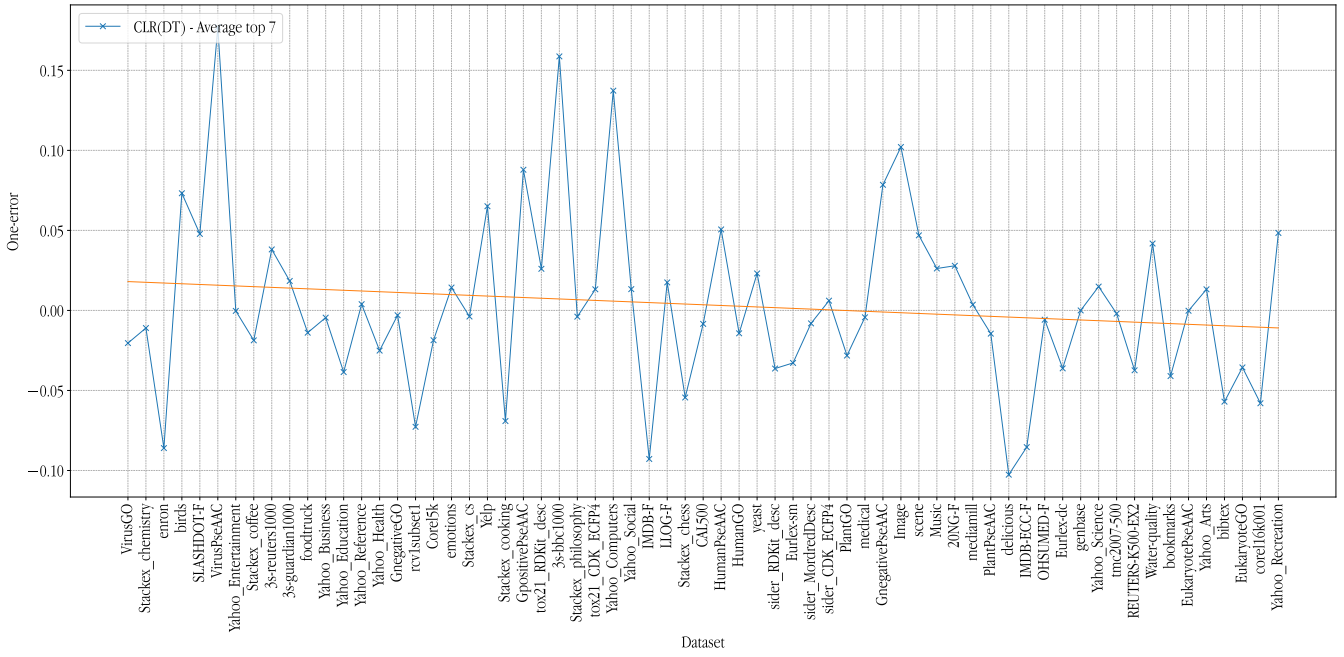


Figure 73: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

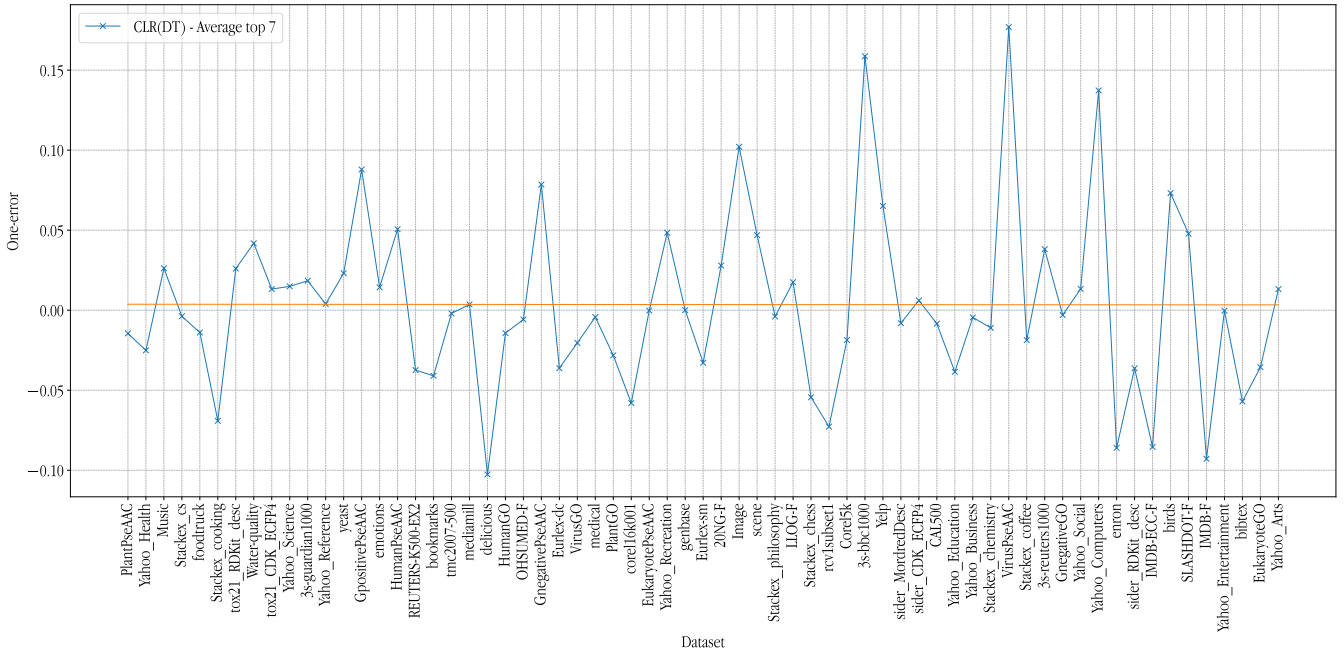


Figure 74: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

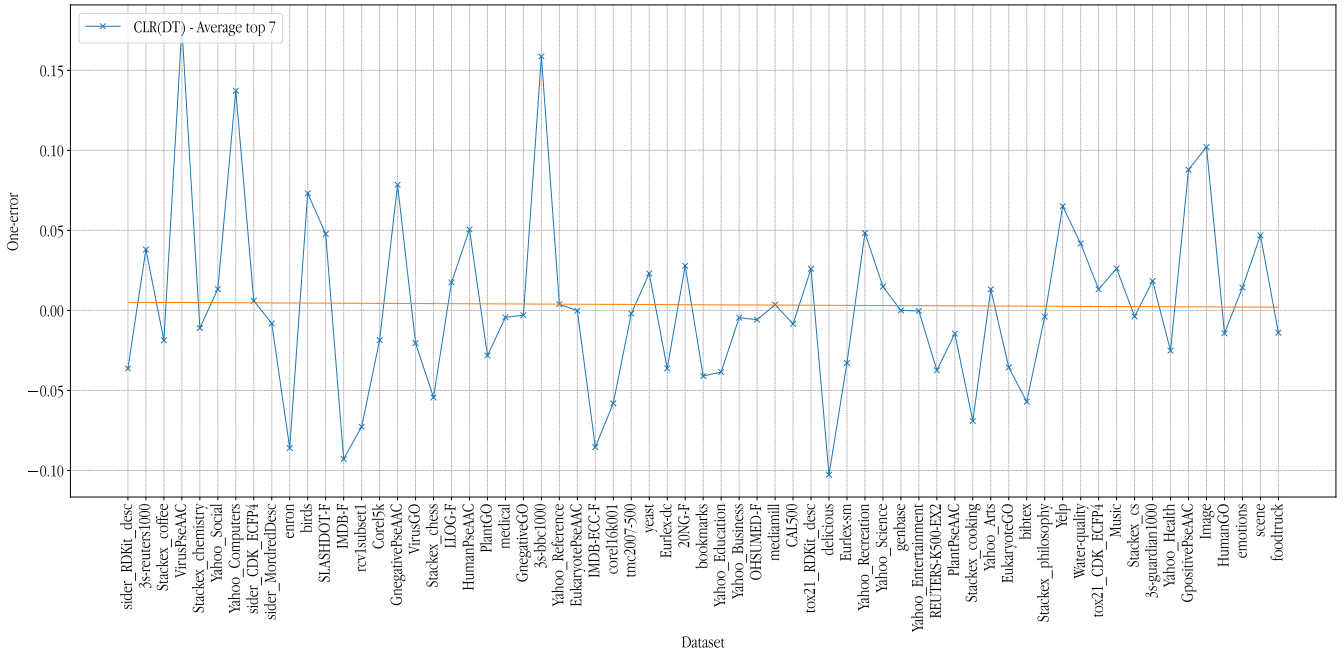


Figure 75: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

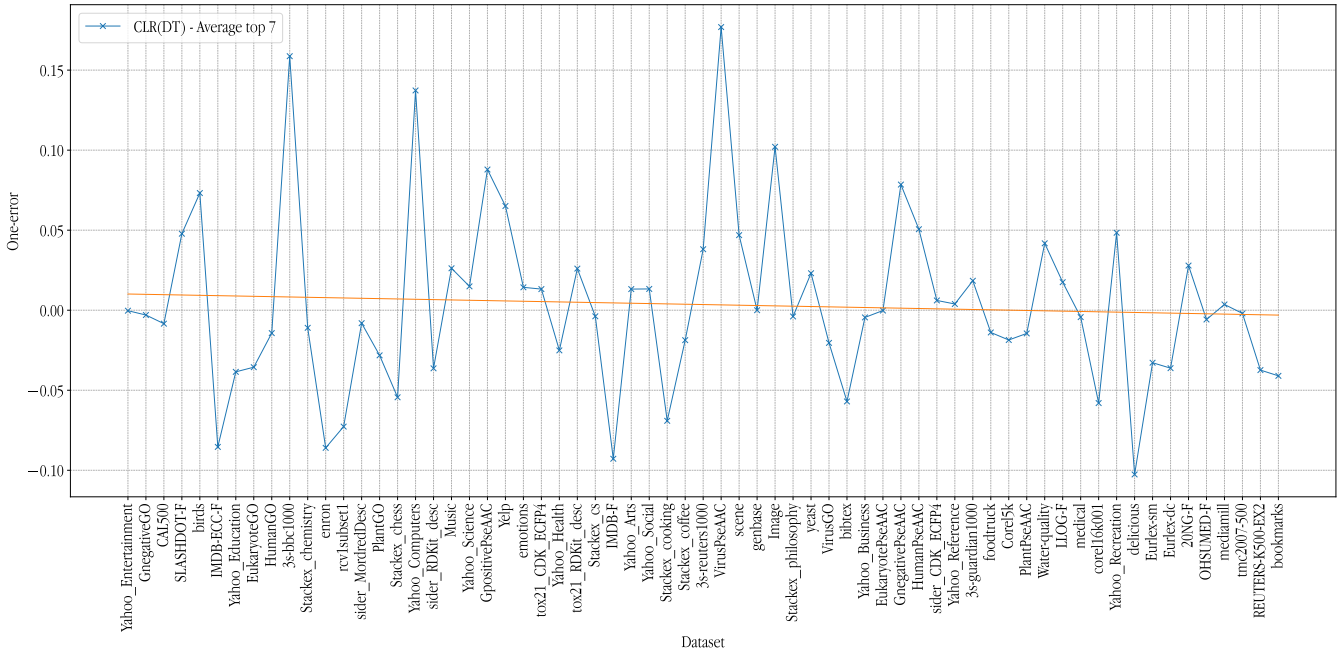


Figure 76: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

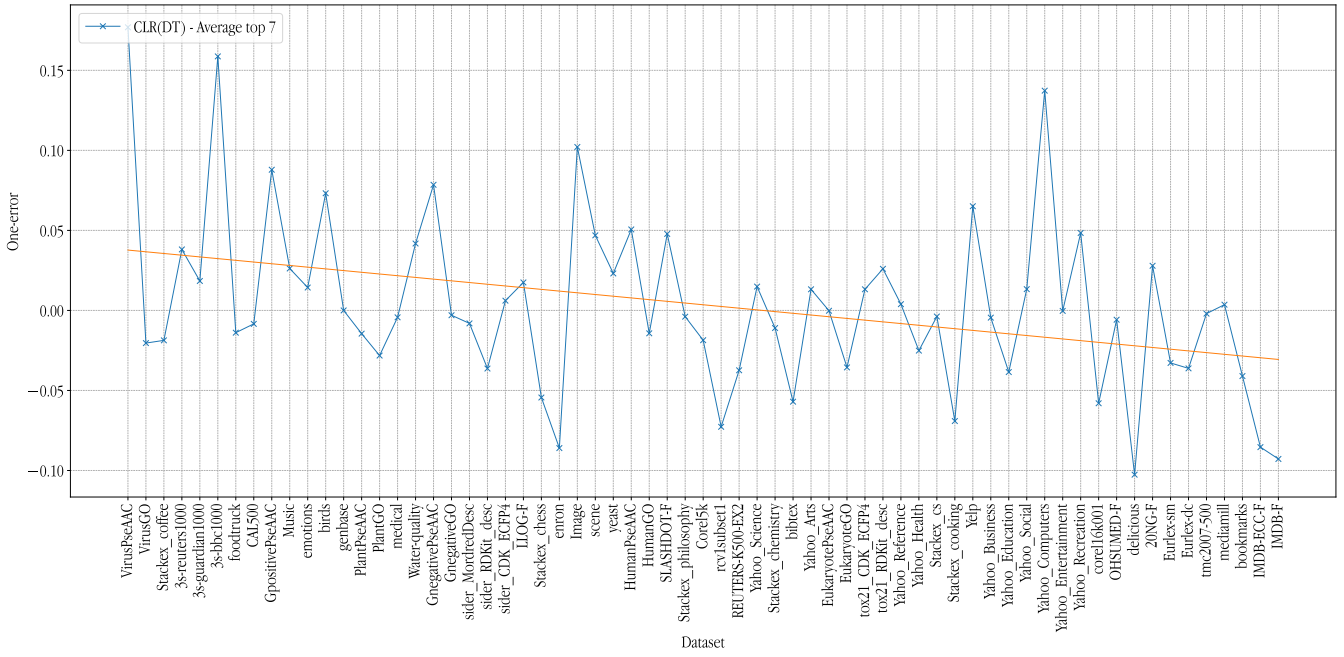


Figure 77: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

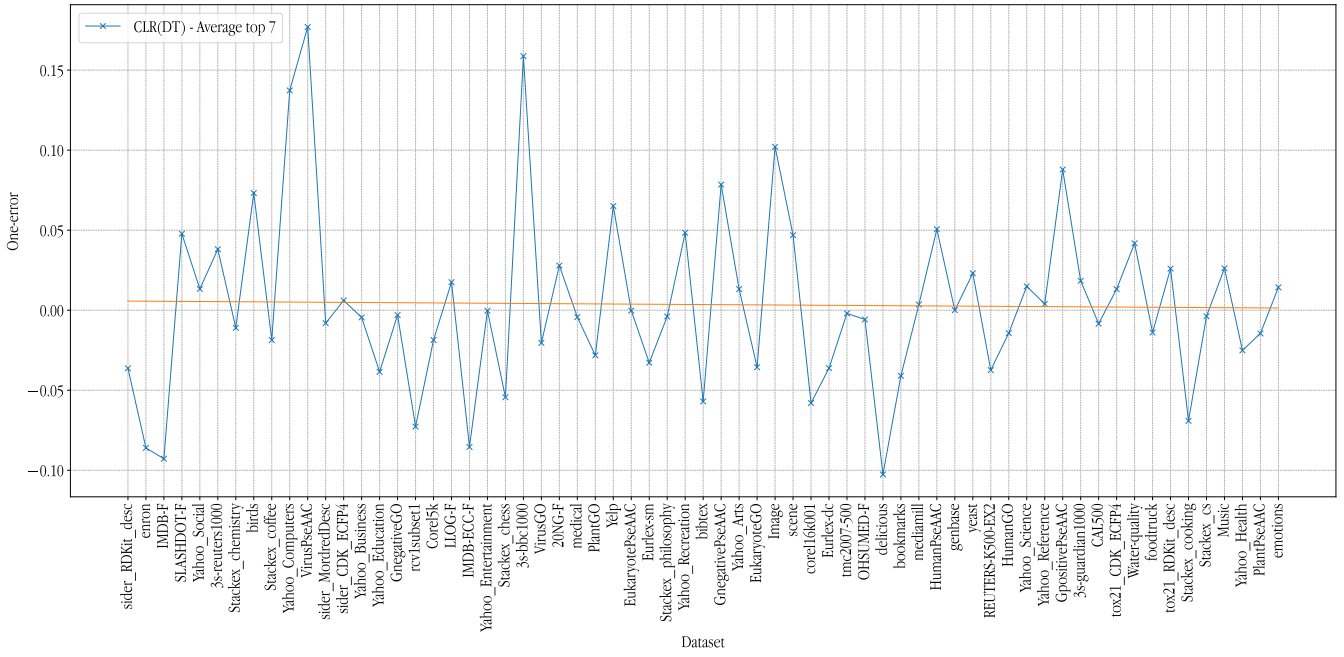


Figure 78: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

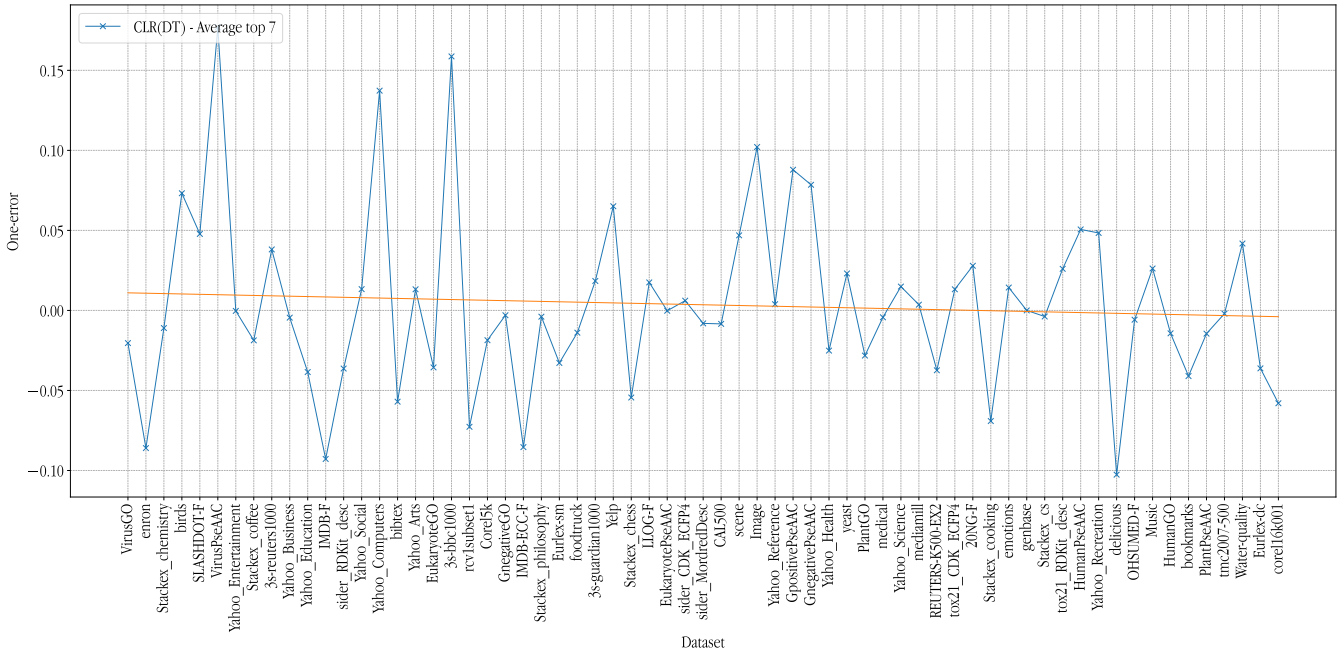


Figure 79: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

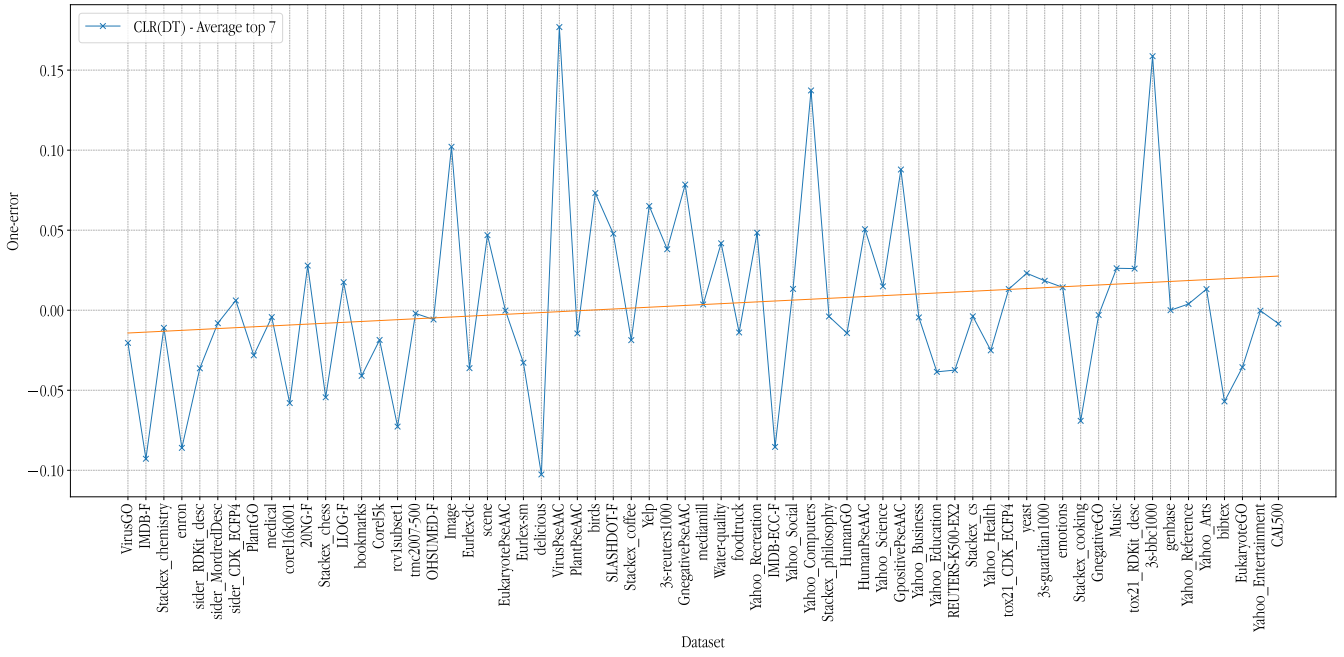


Figure 80: Difference in one-error performance between CLR(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

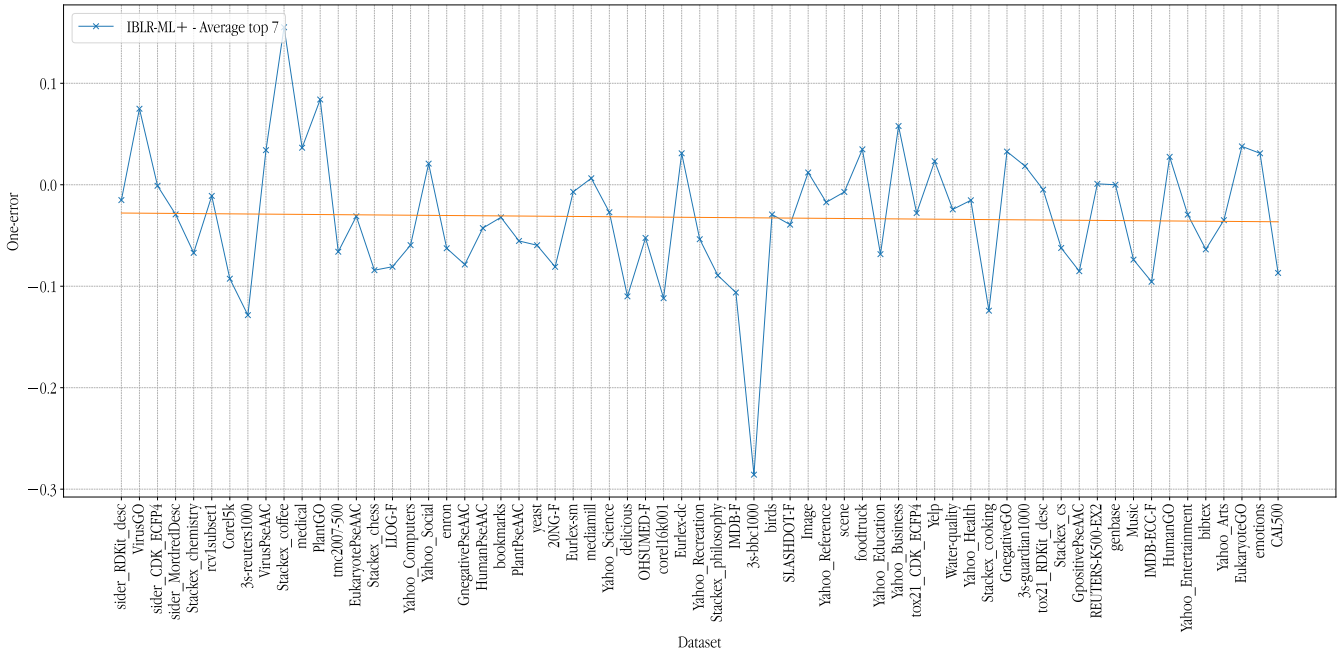


Figure 81: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

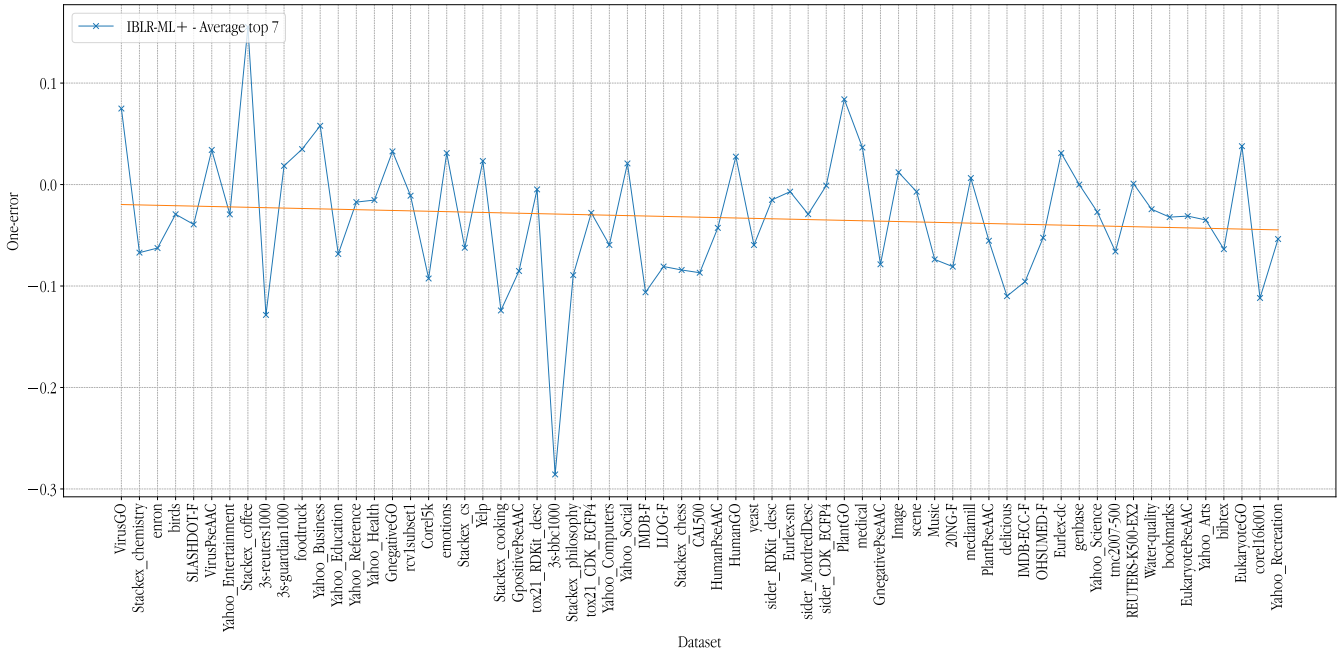


Figure 82: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

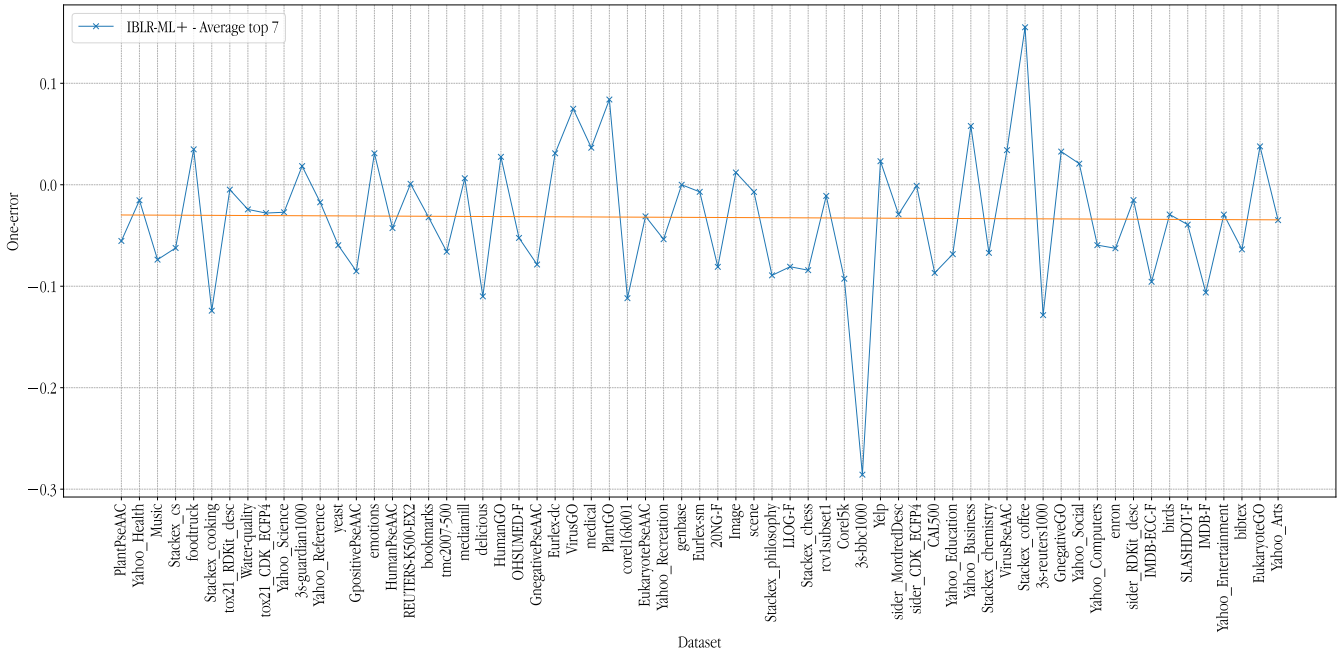


Figure 83: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

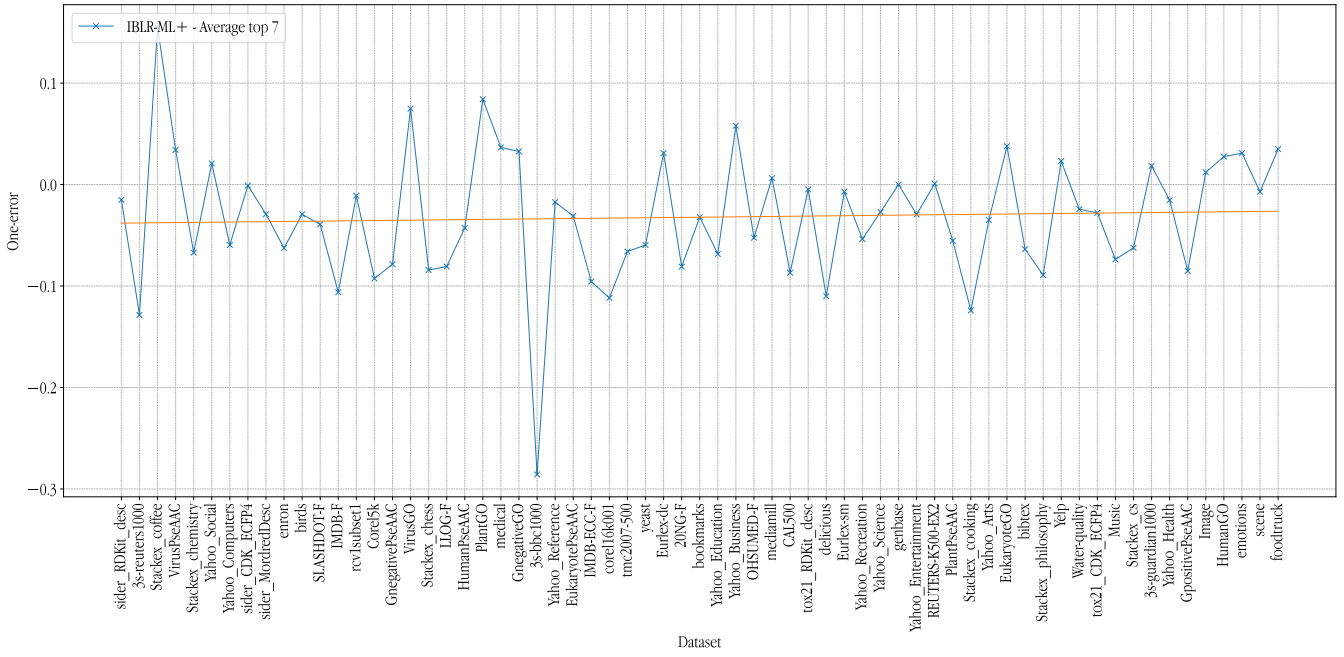


Figure 84: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

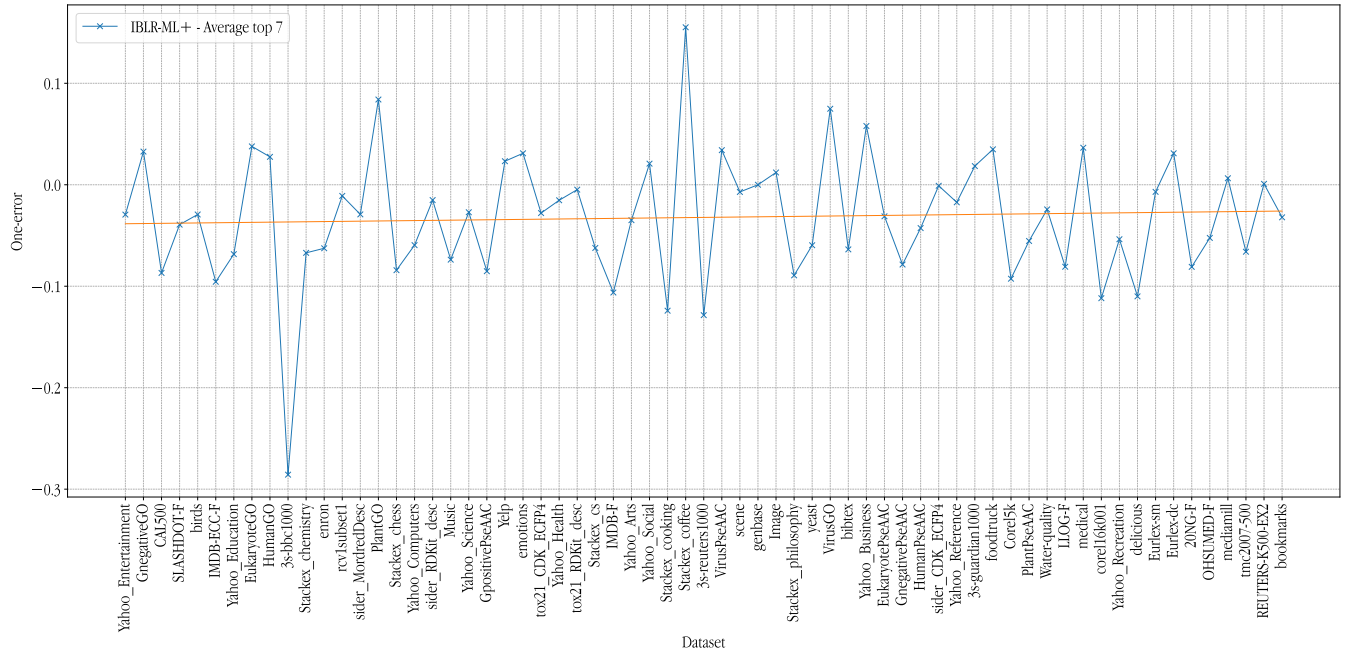


Figure 85: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

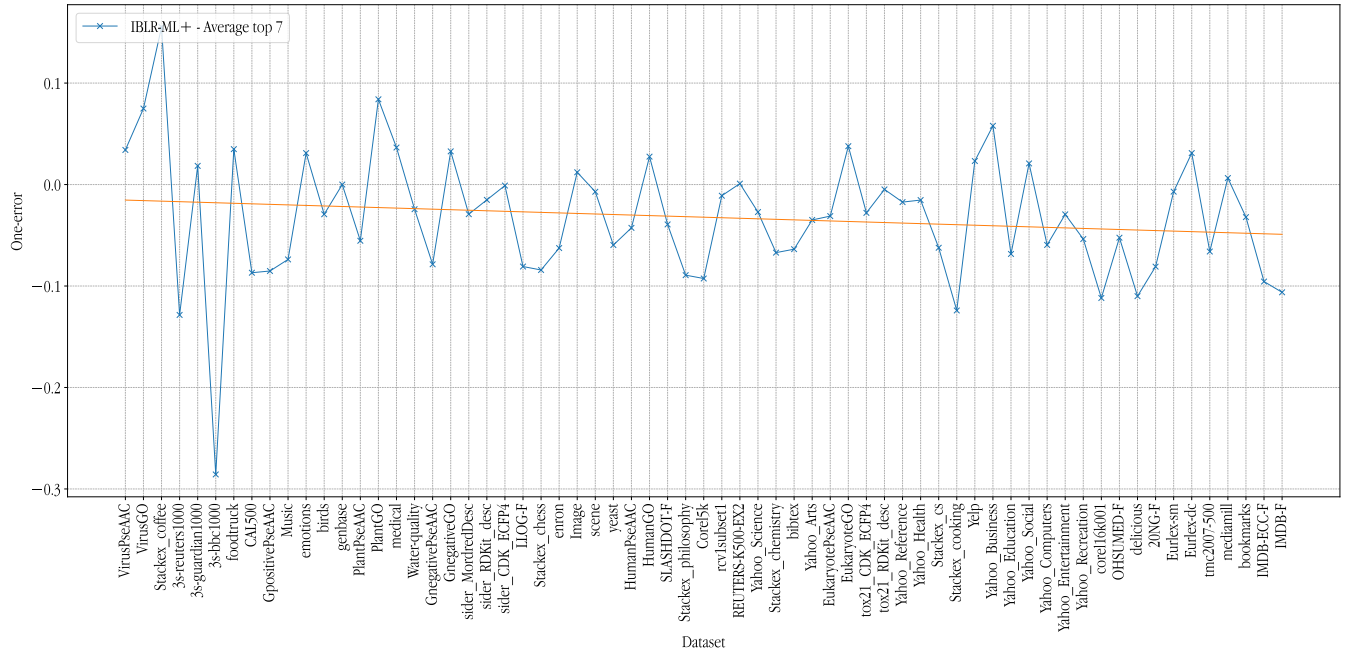


Figure 86: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

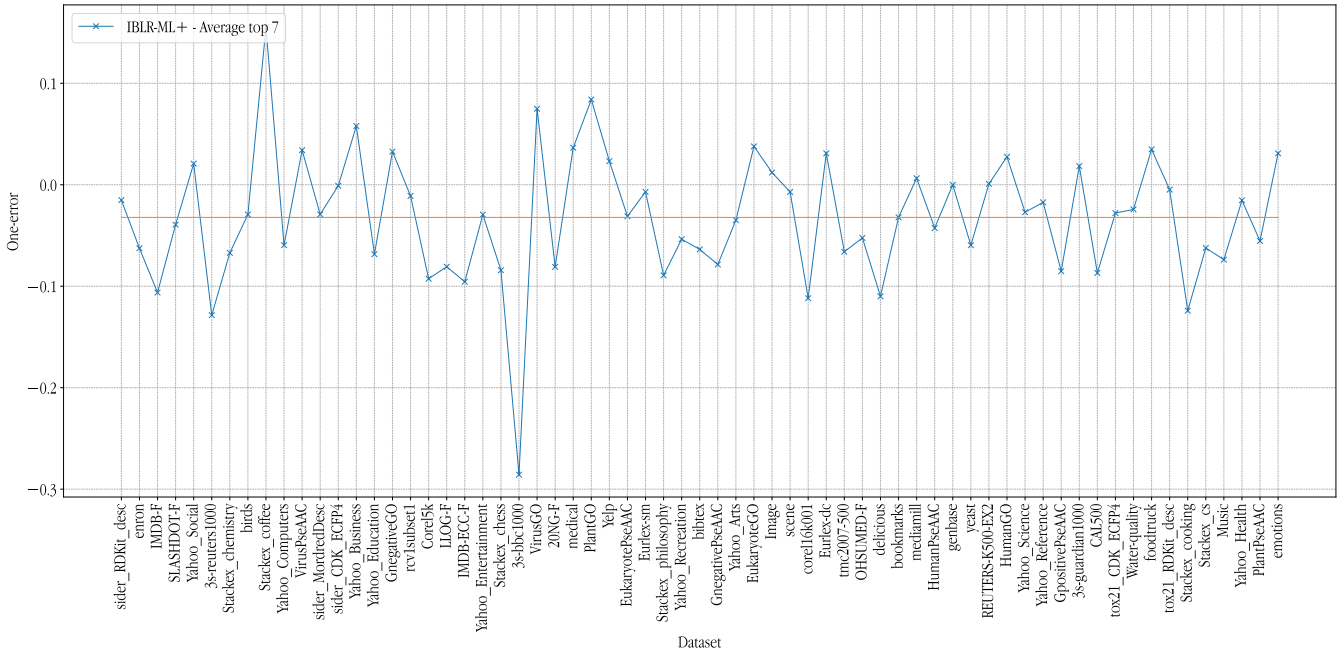


Figure 87: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

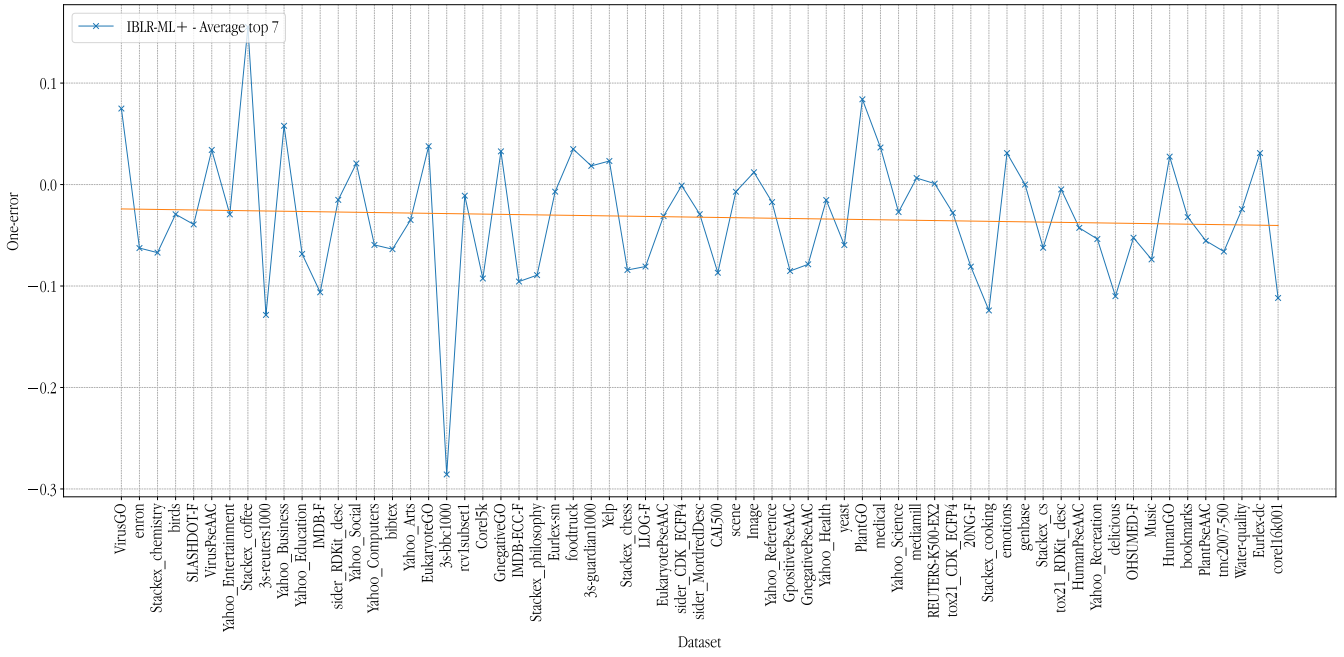


Figure 88: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

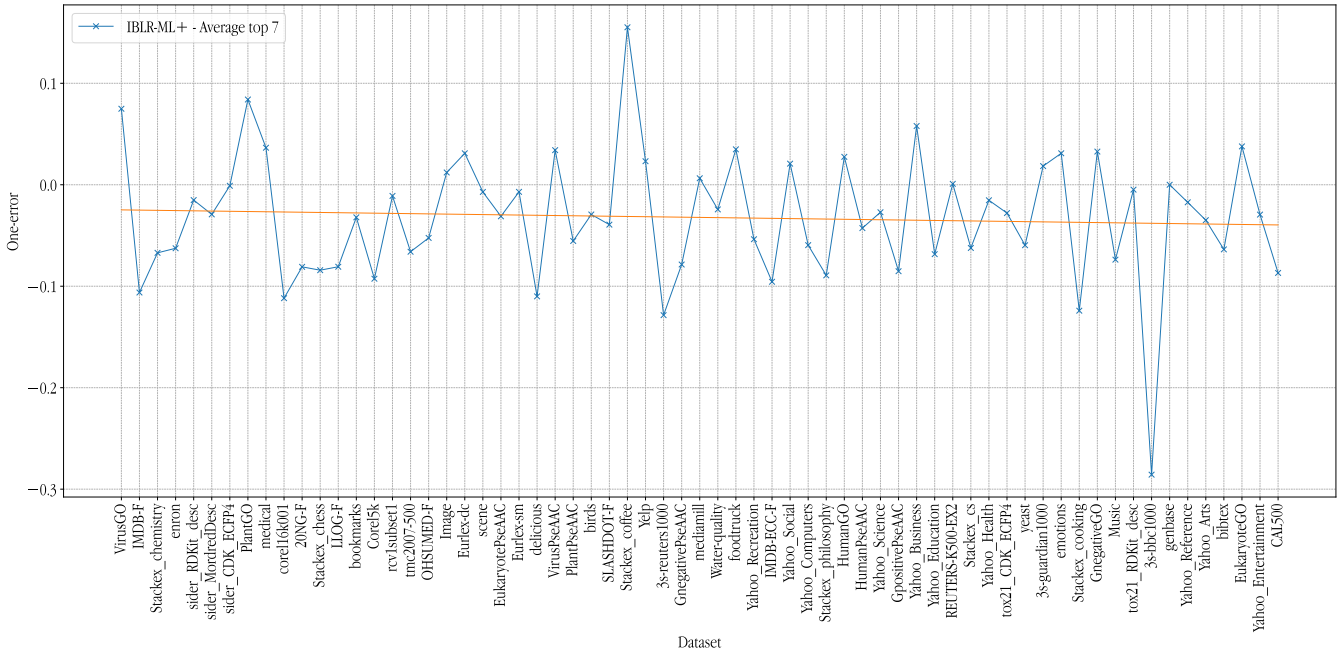


Figure 89: Difference in one-error performance between IBLR-ML+ and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

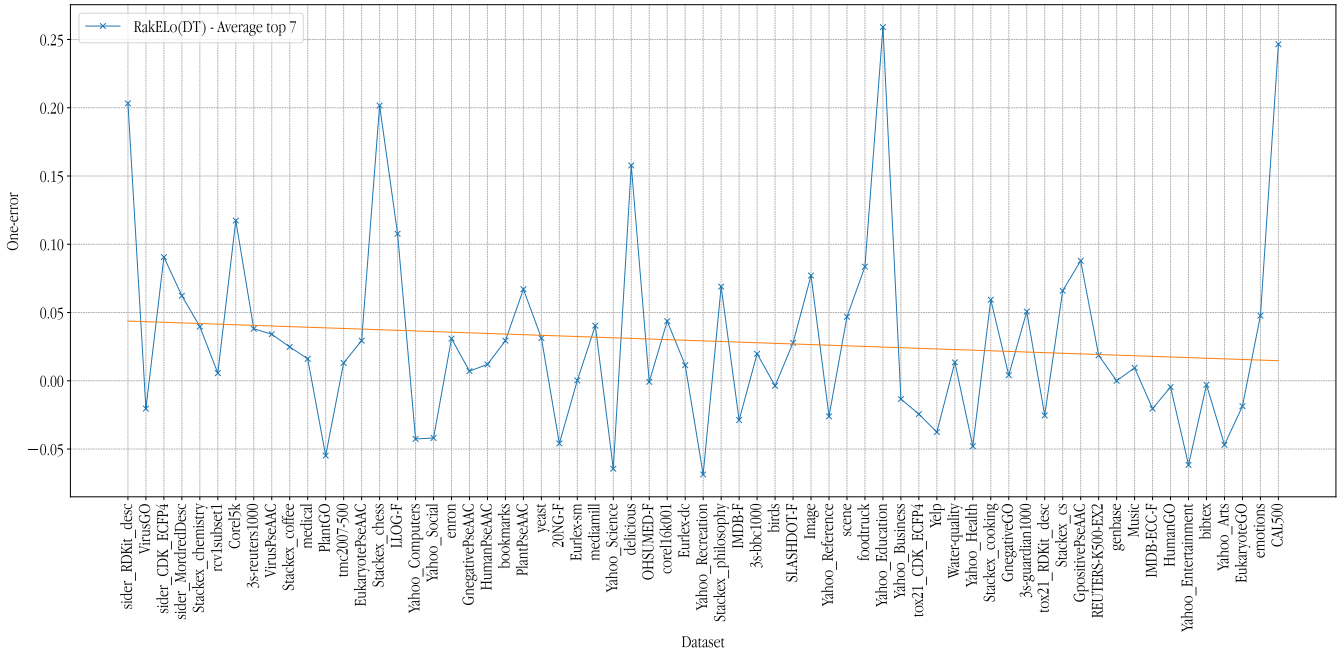


Figure 90: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

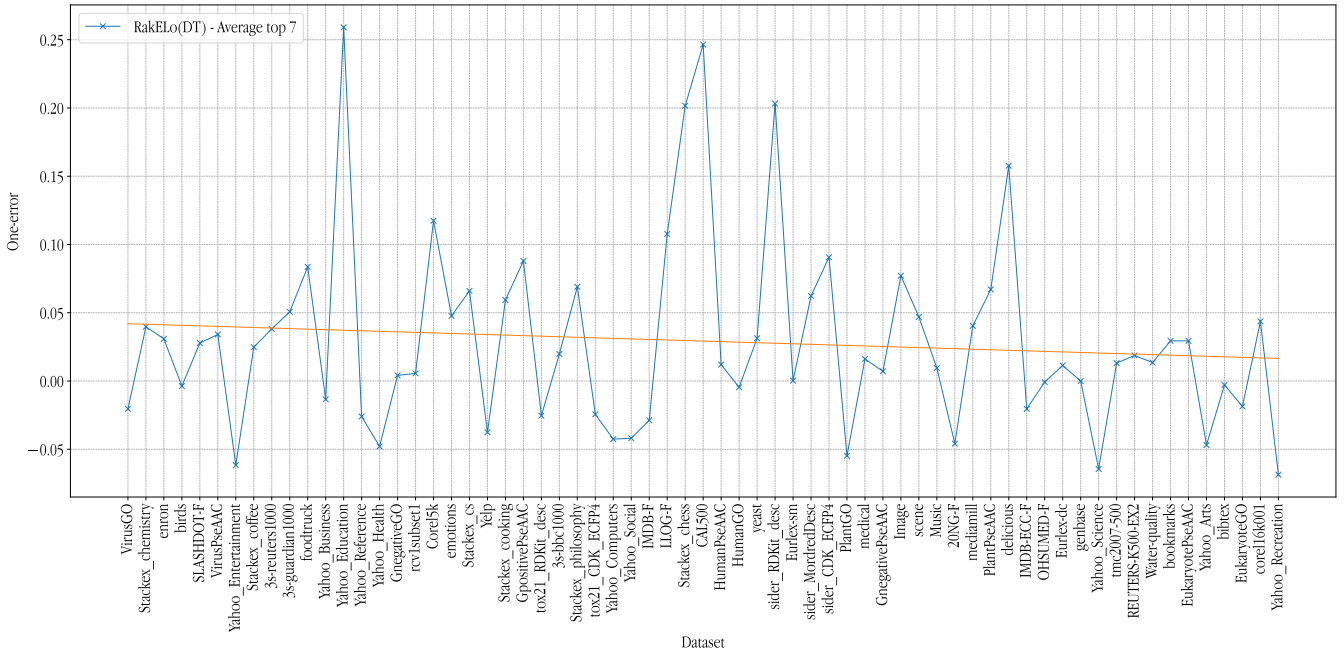


Figure 91: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

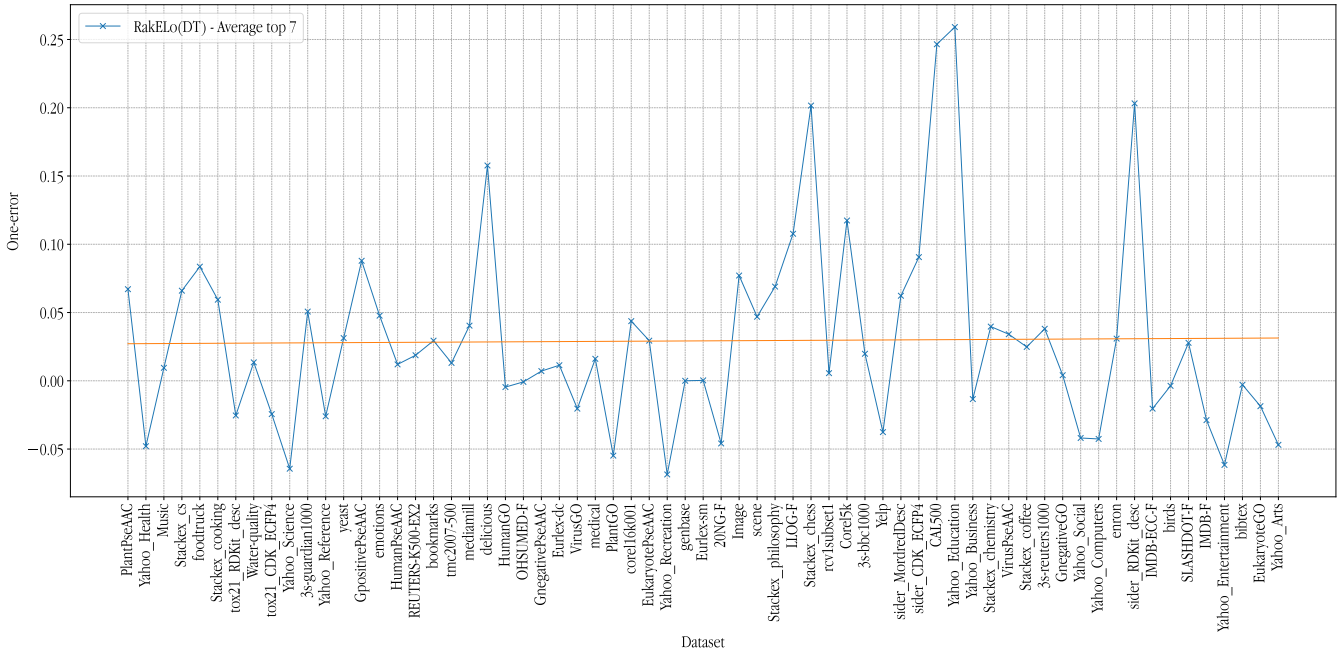


Figure 92: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

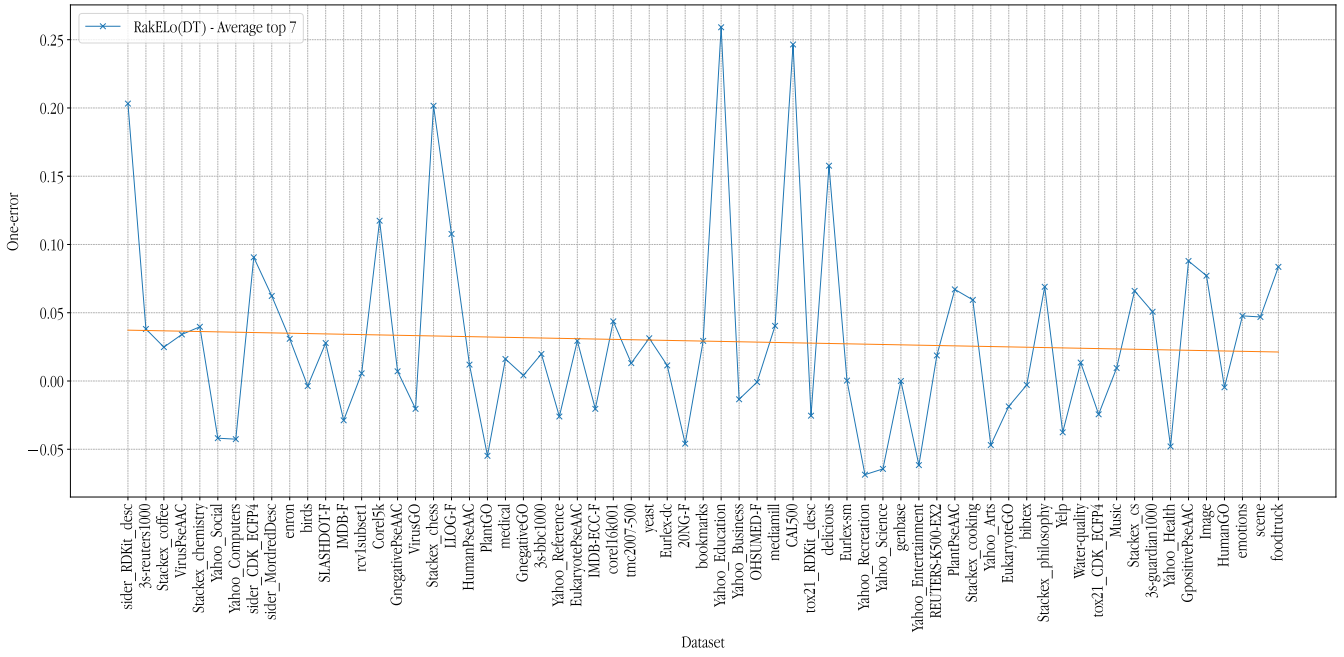


Figure 93: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

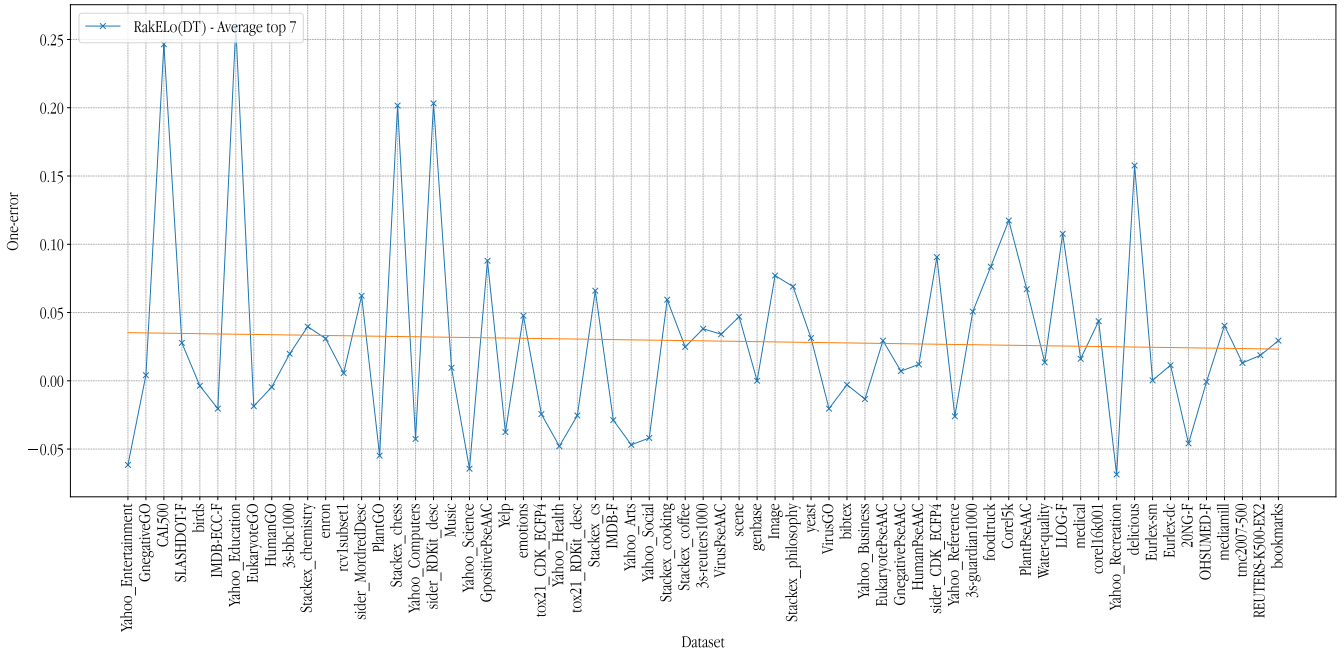


Figure 94: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

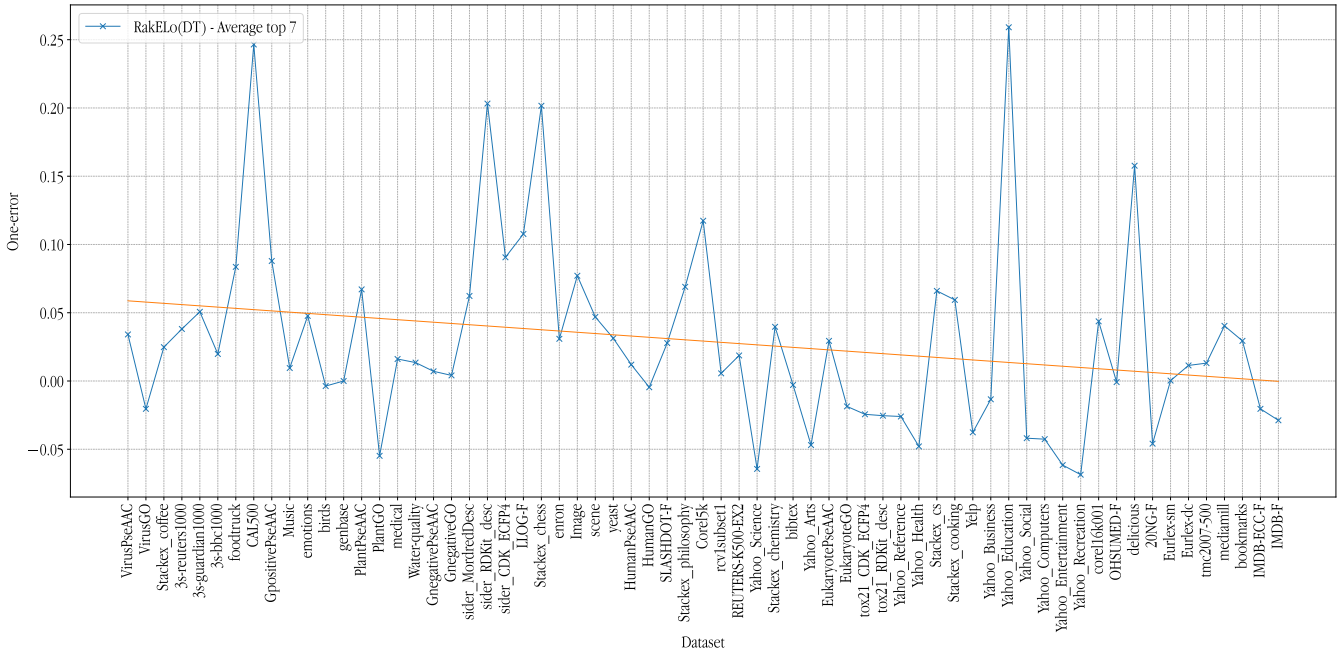


Figure 95: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

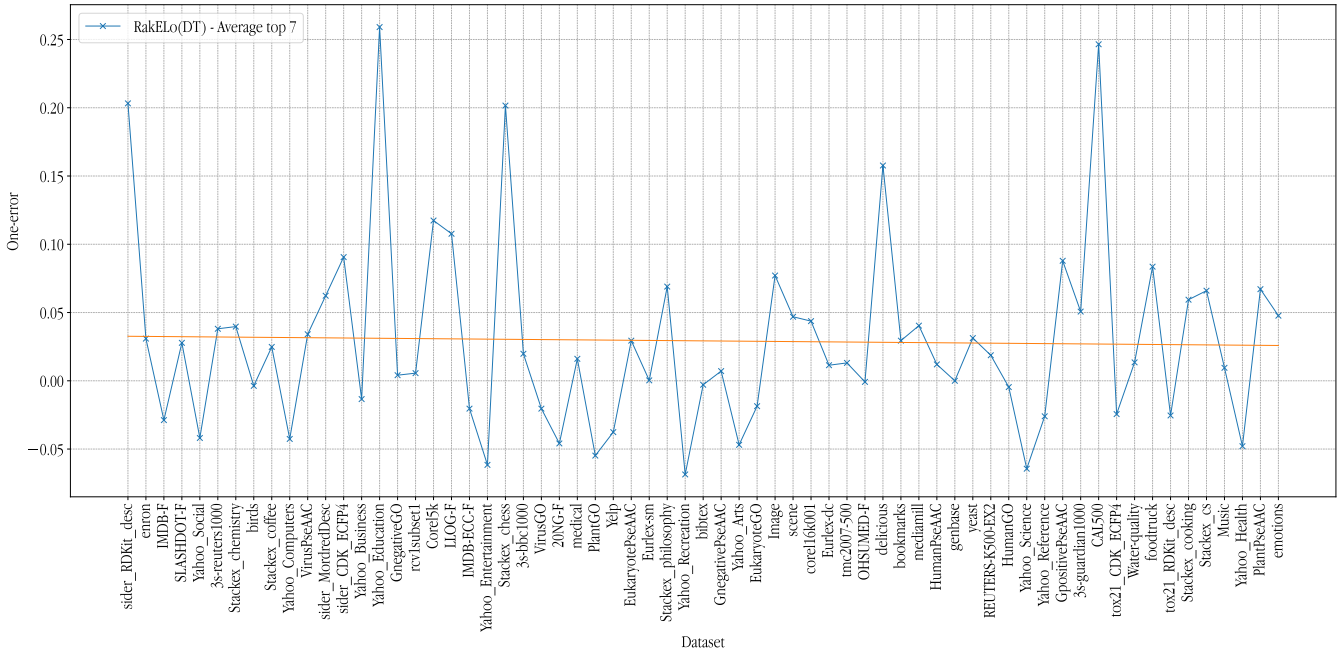


Figure 96: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

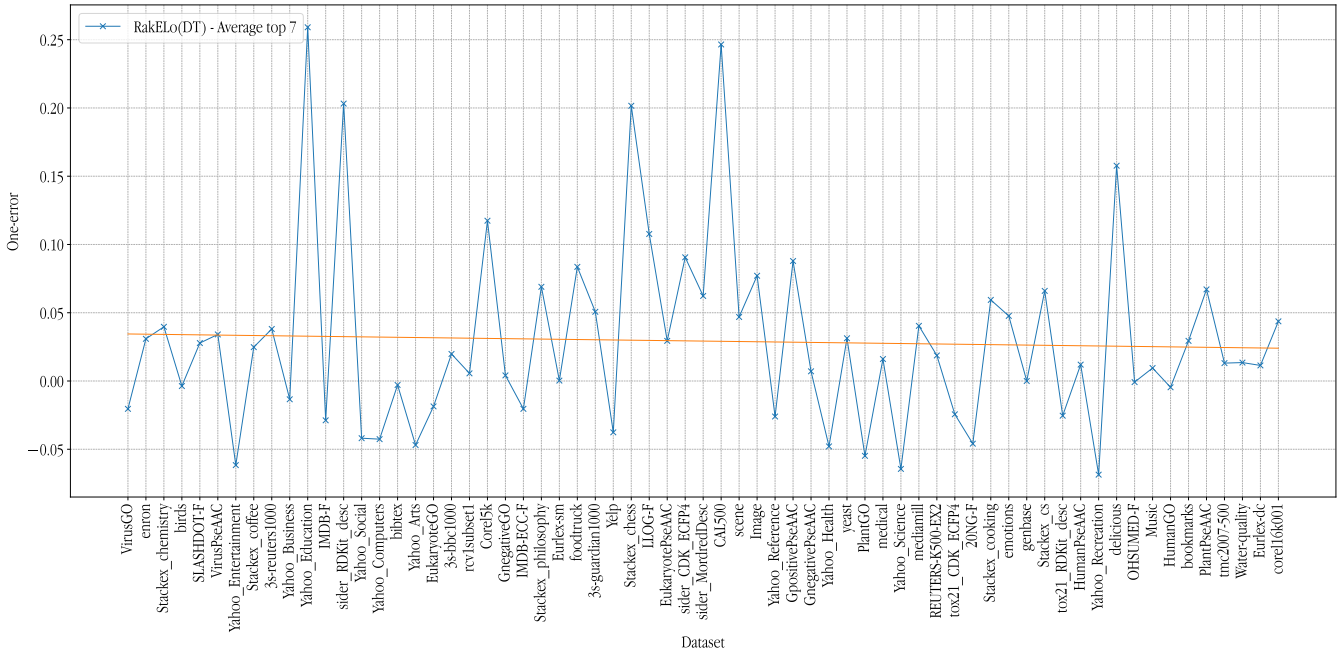


Figure 97: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

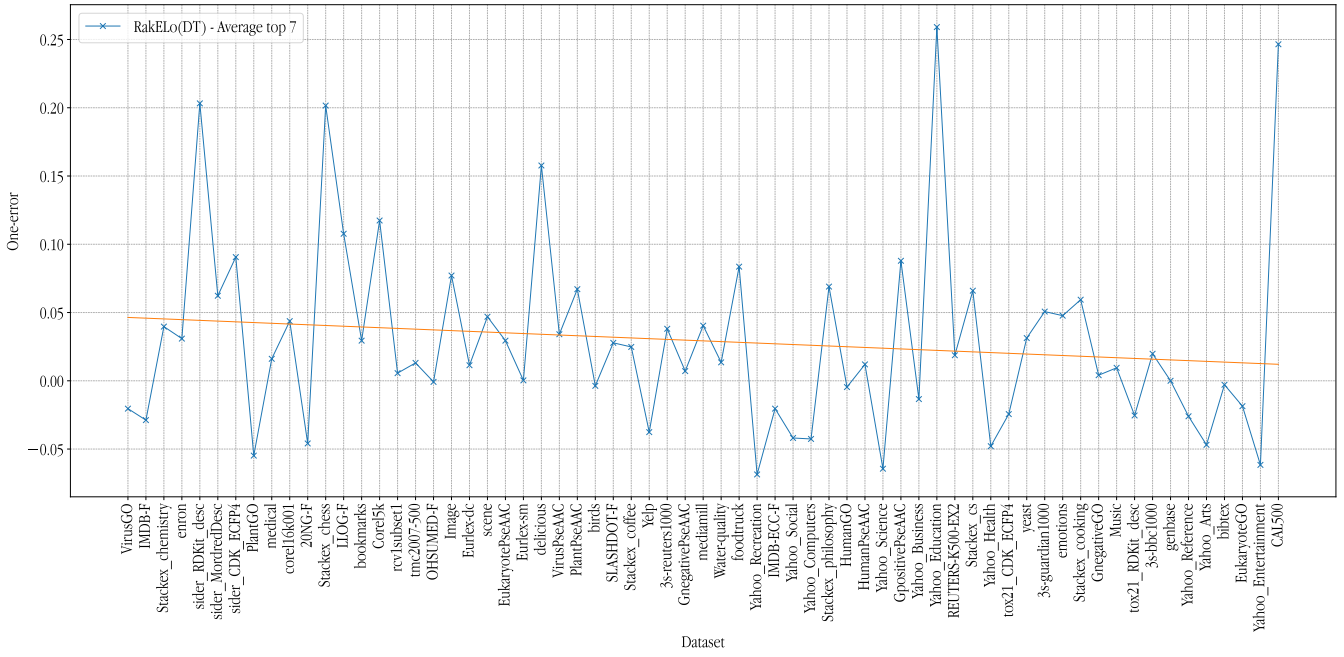


Figure 98: Difference in one-error performance between RAkELo(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

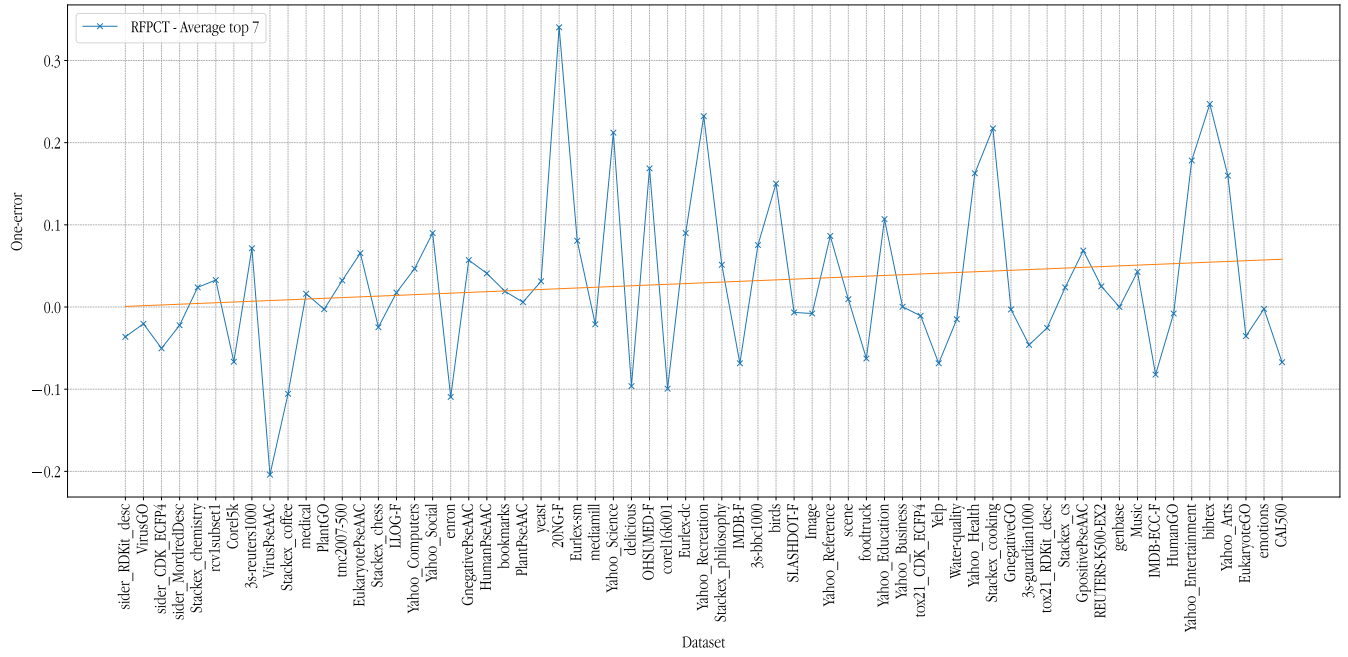


Figure 99: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

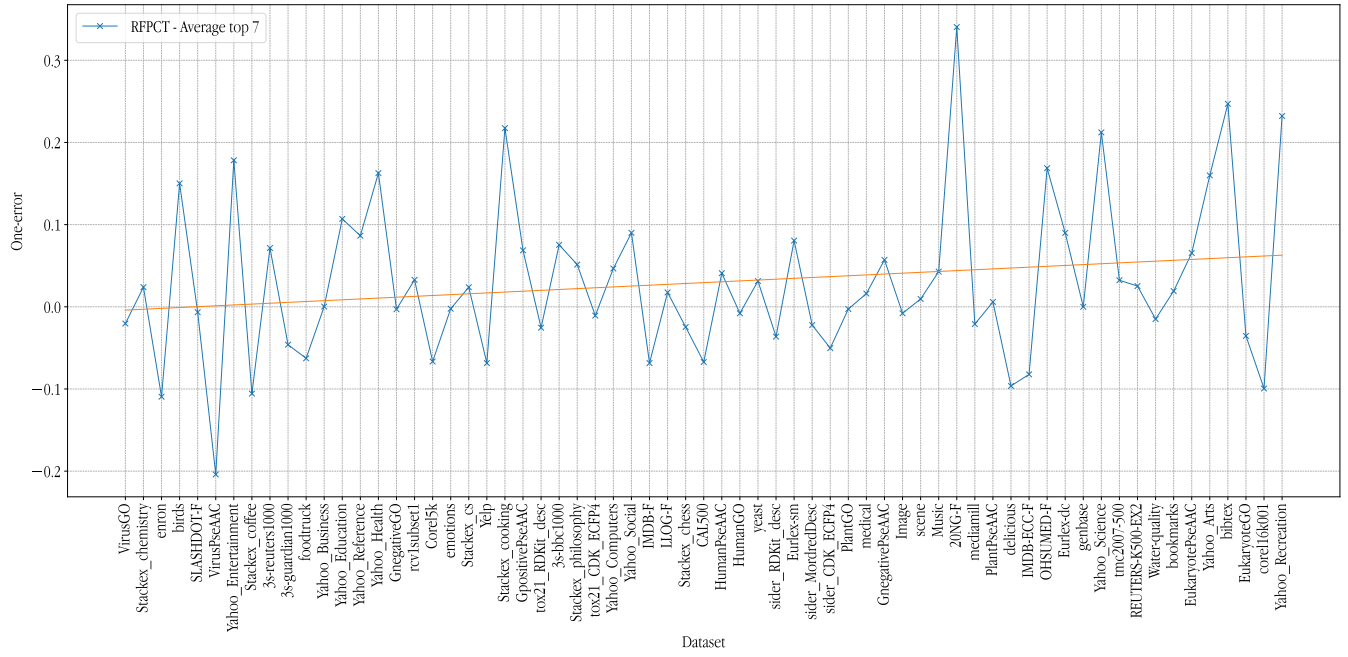


Figure 100: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

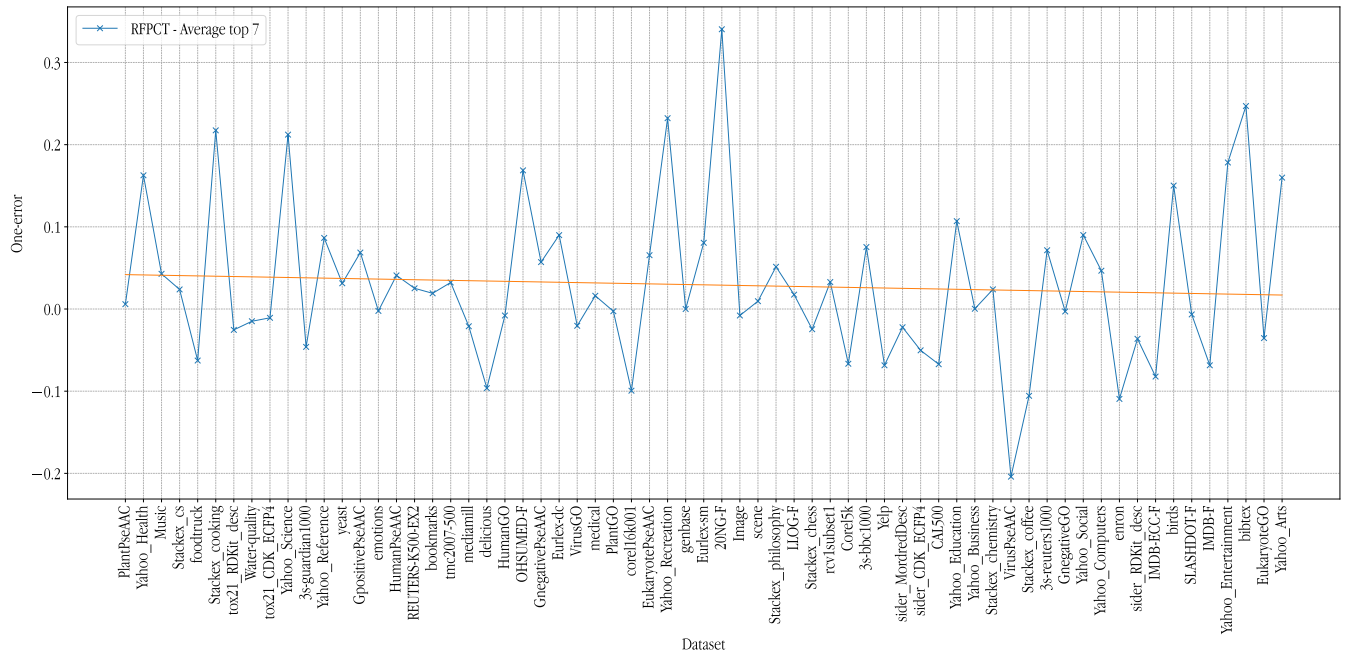


Figure 101: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

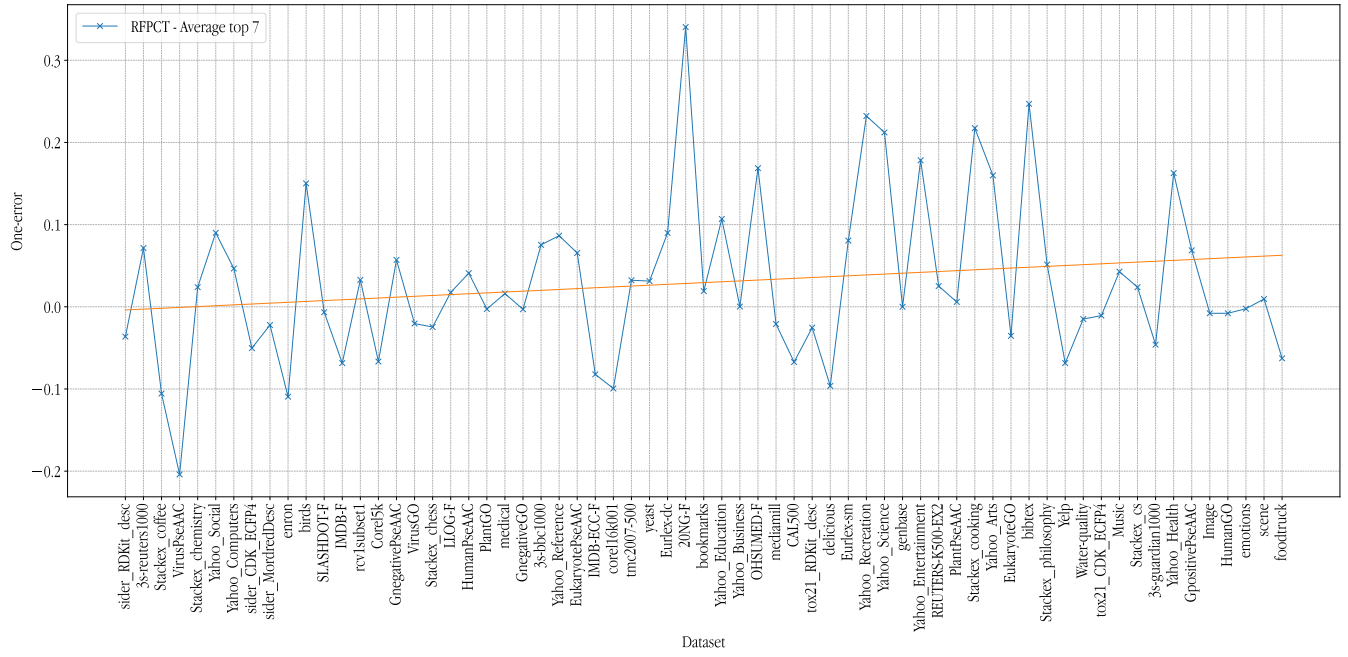


Figure 102: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

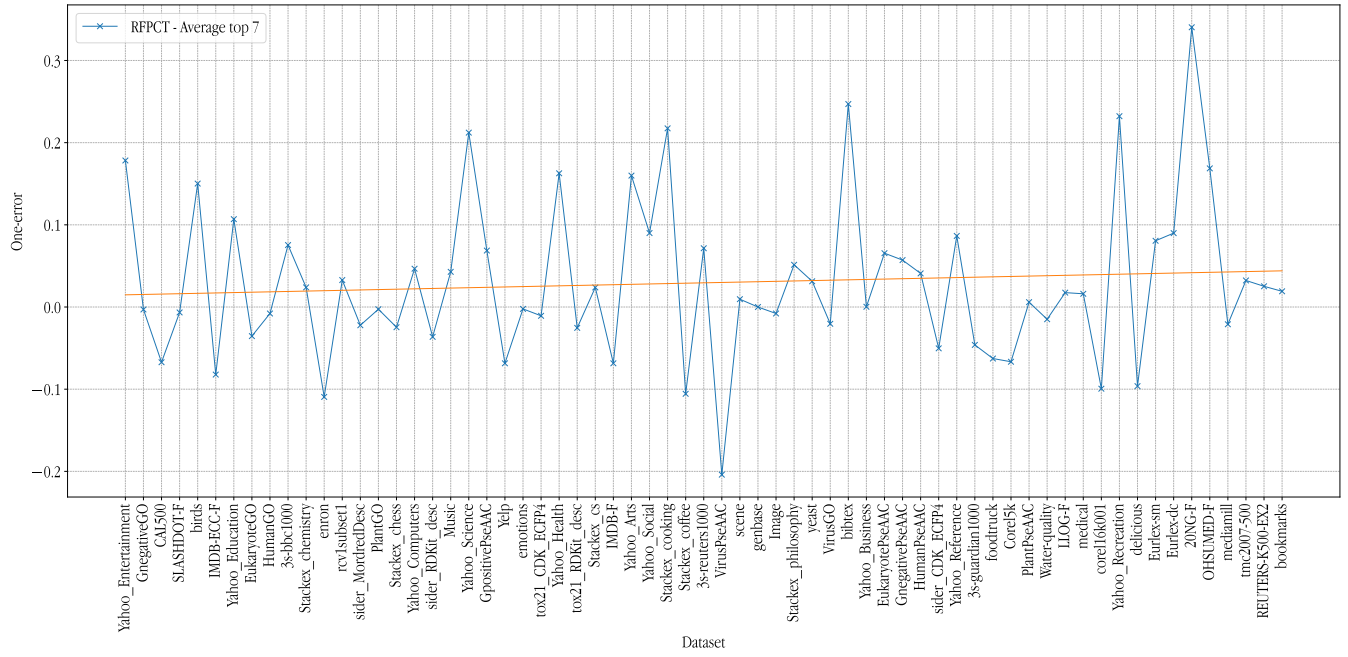


Figure 103: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

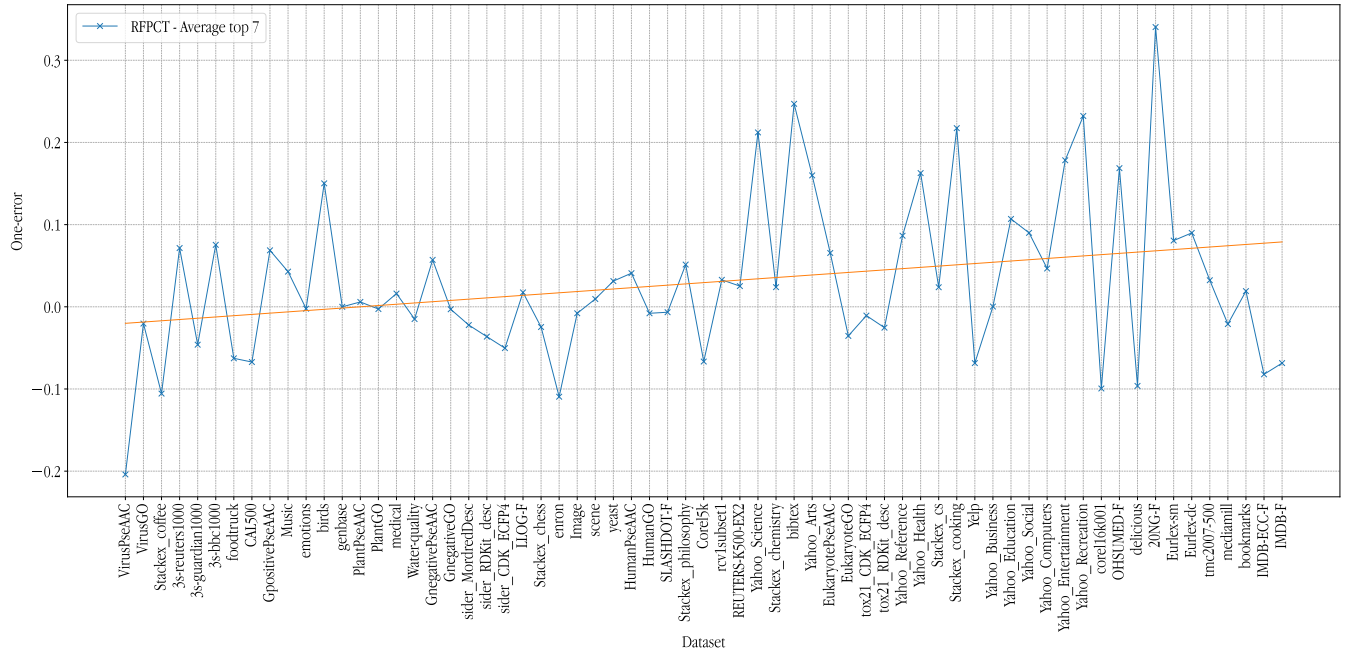


Figure 104: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

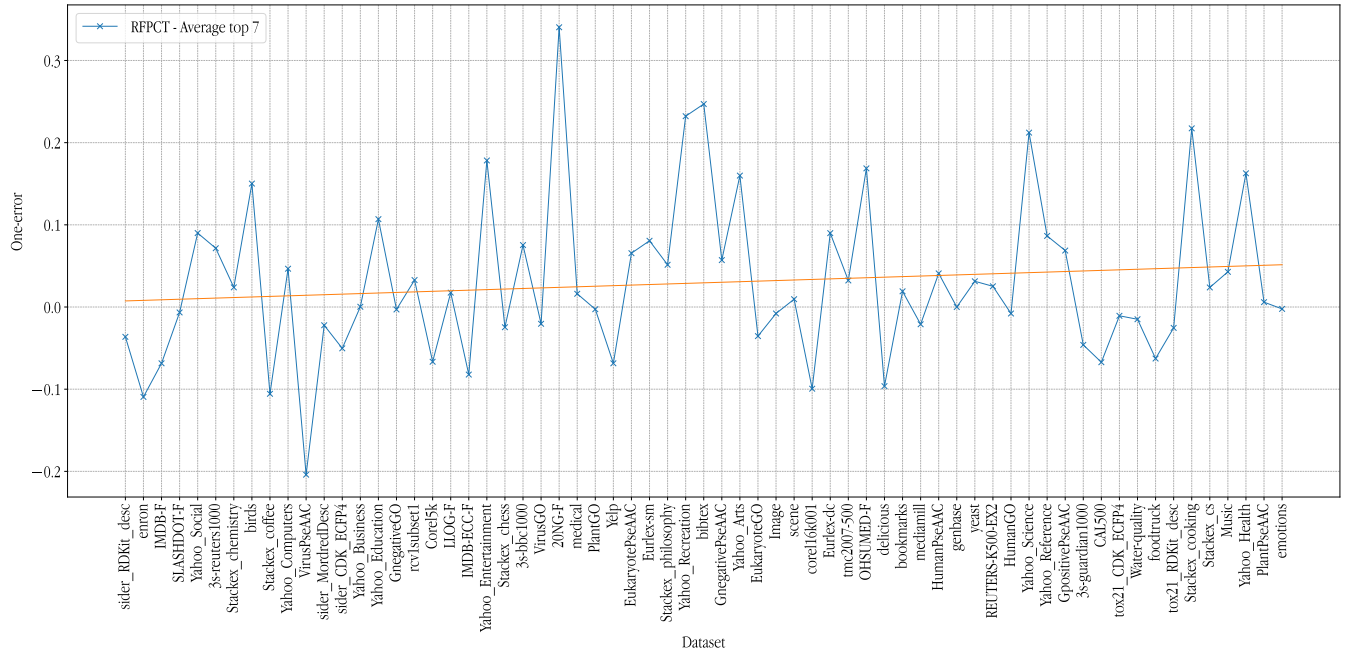


Figure 105: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

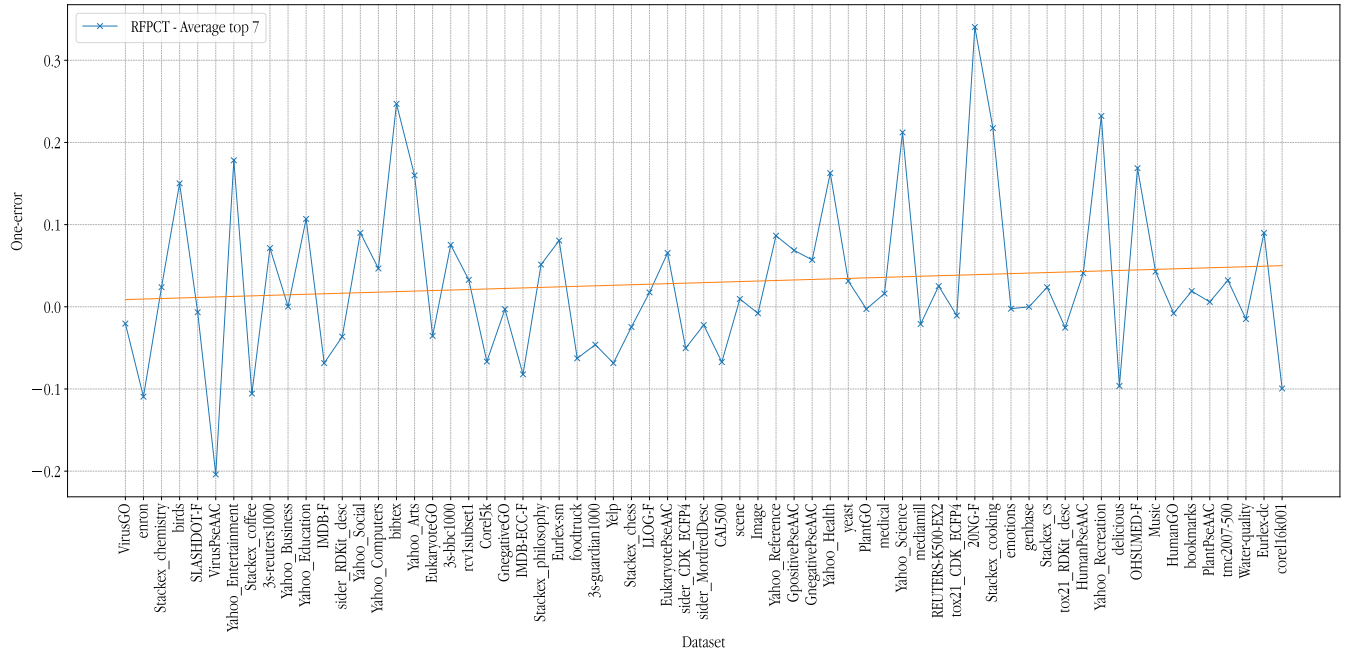


Figure 106: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

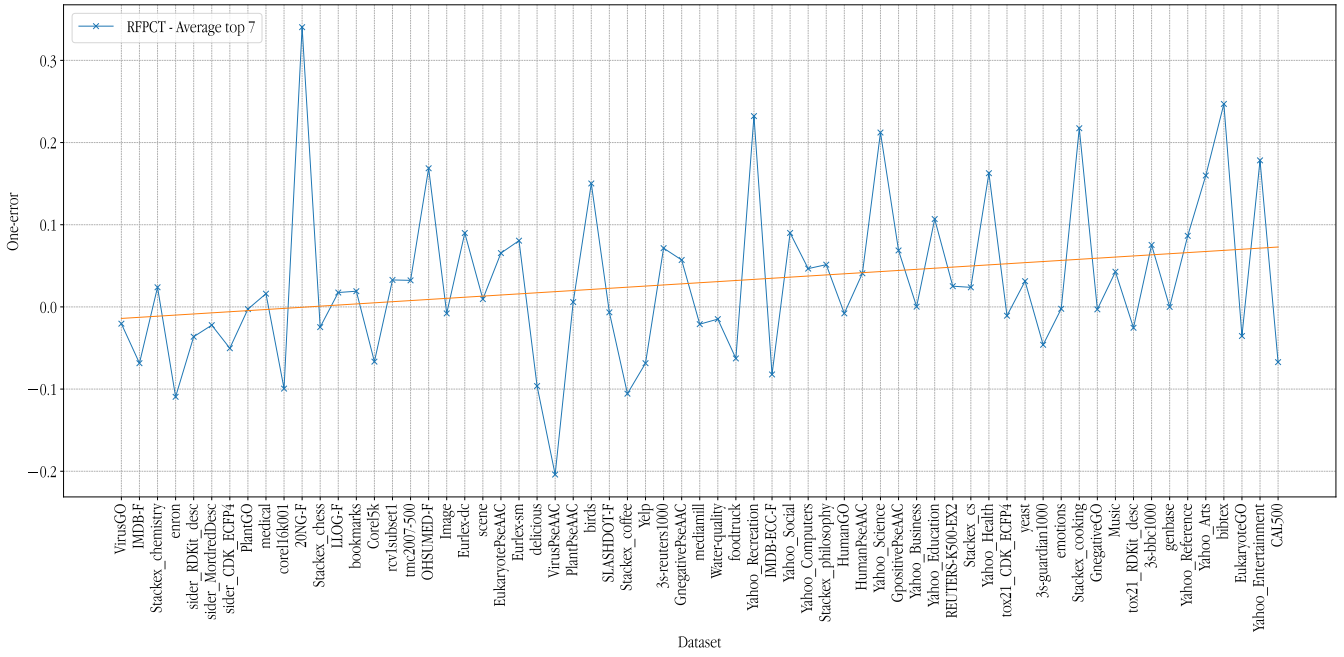


Figure 107: Difference in one-error performance between RFPCT and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

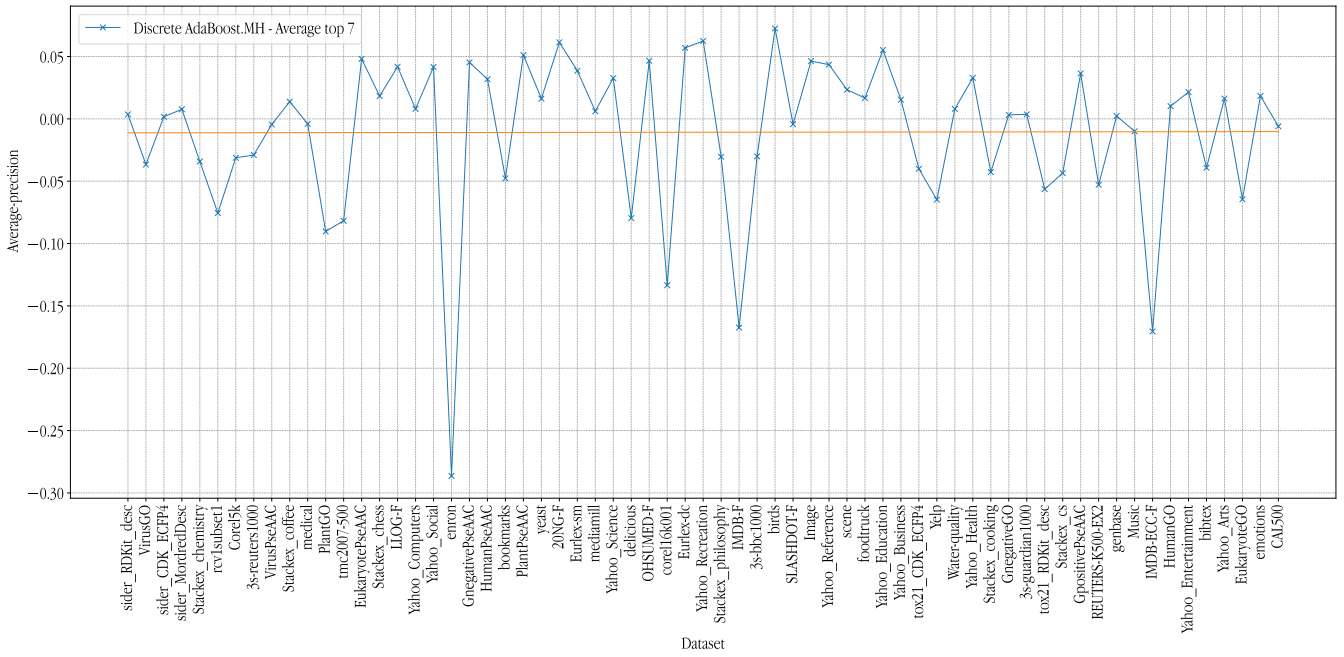


Figure 108: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

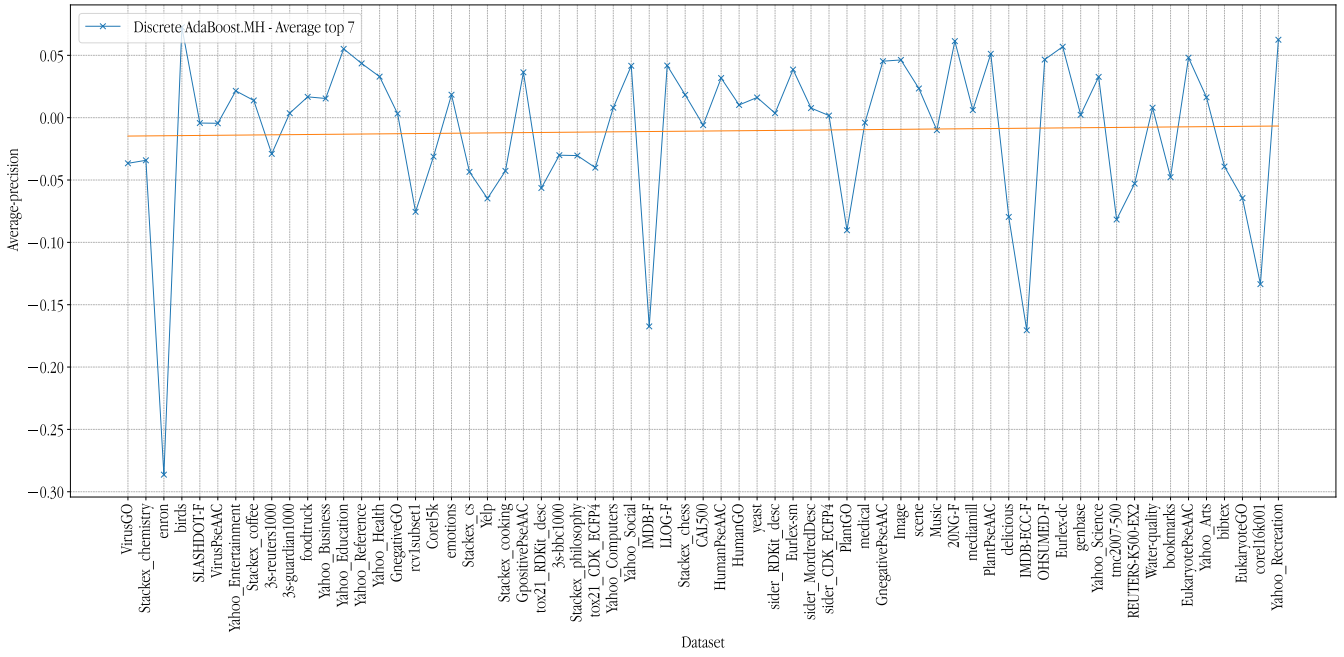


Figure 109: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

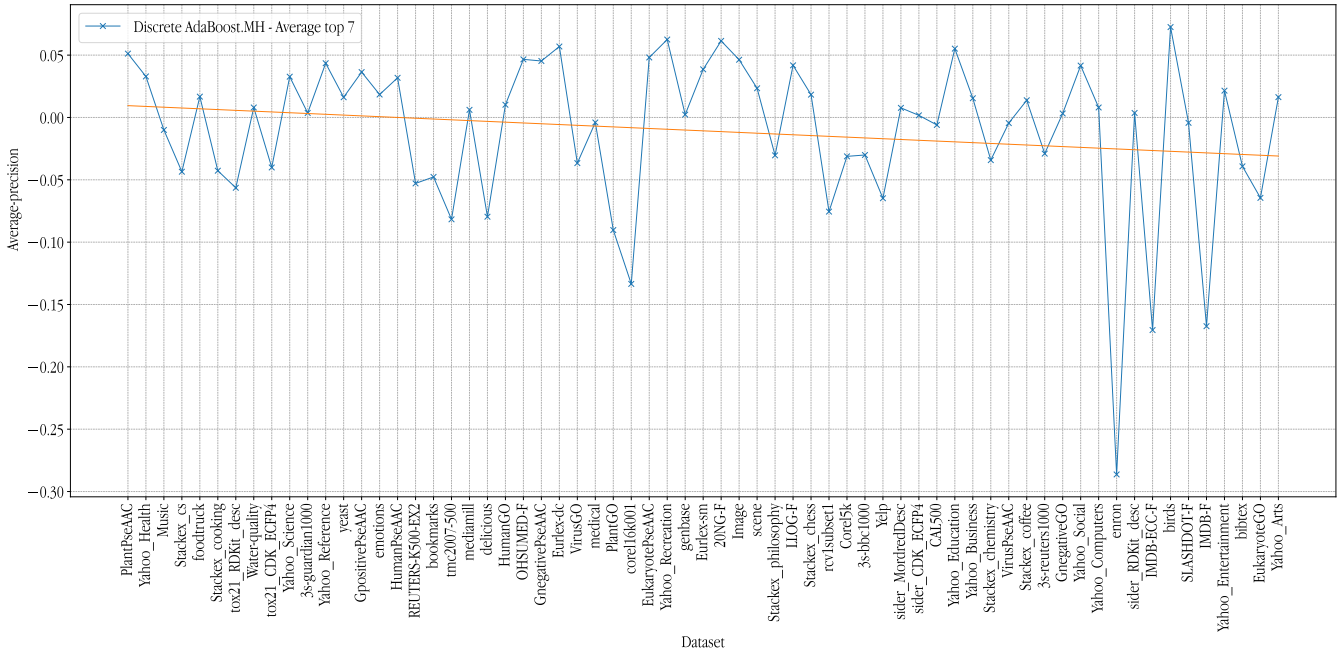


Figure 110: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

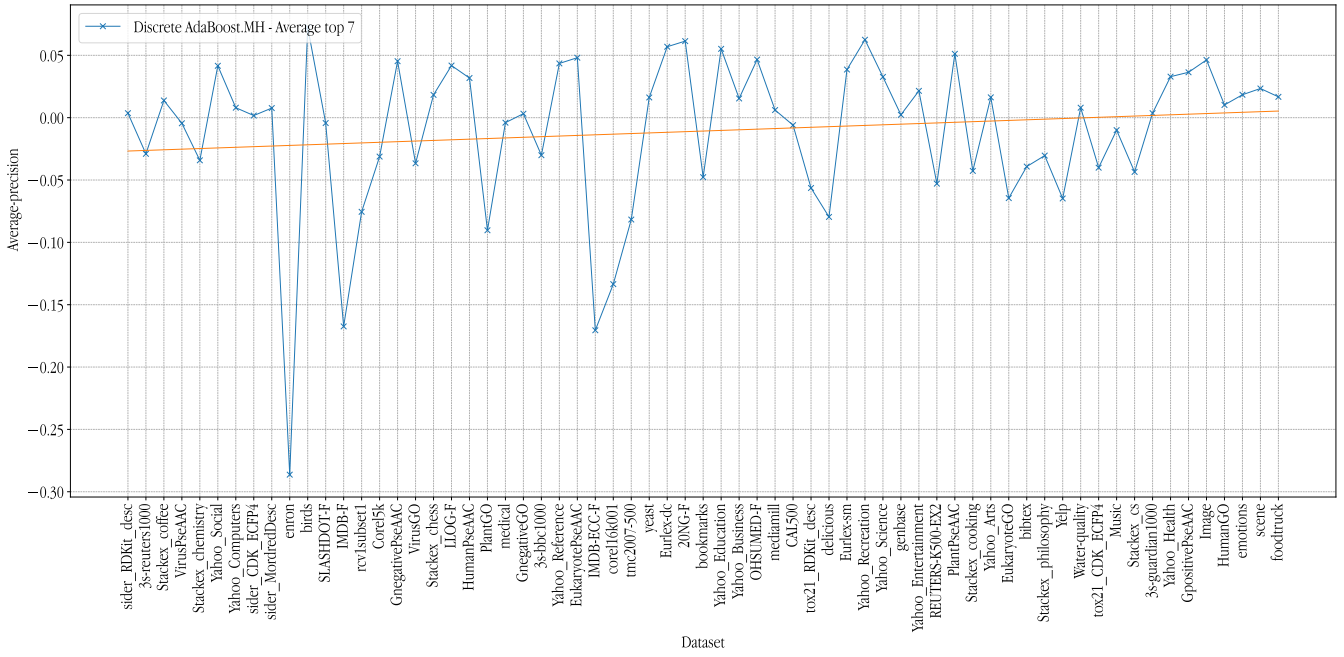


Figure 111: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

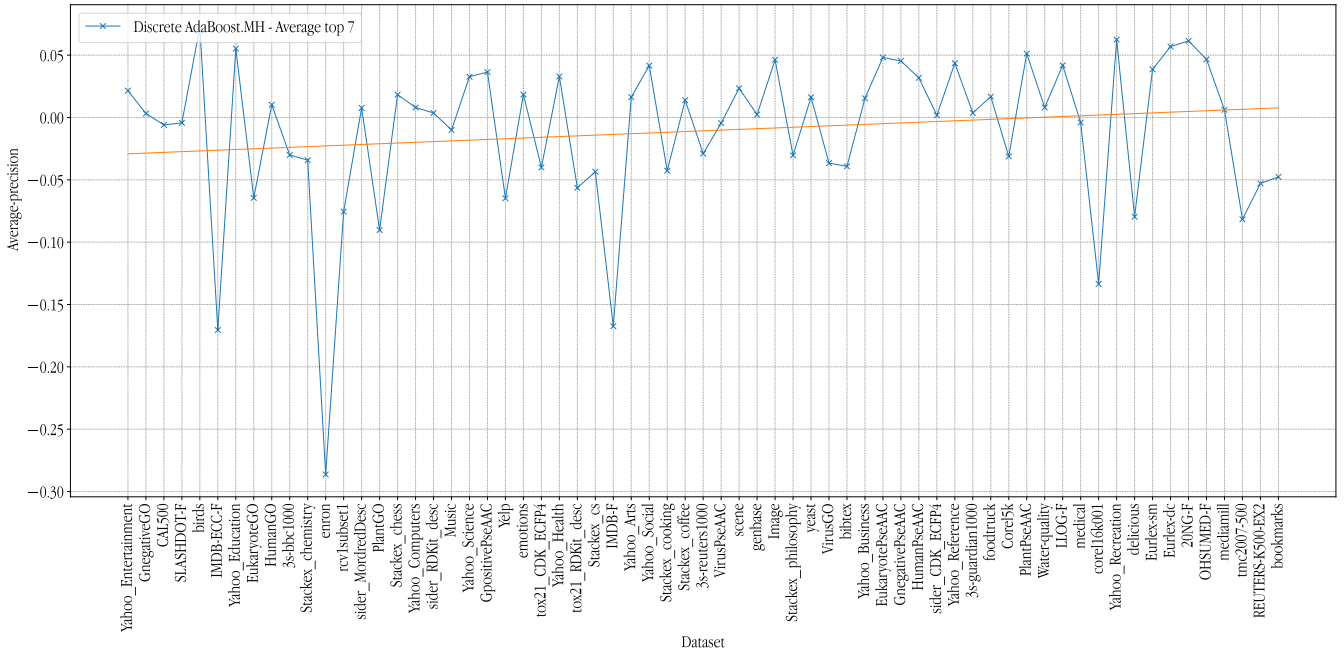


Figure 112: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

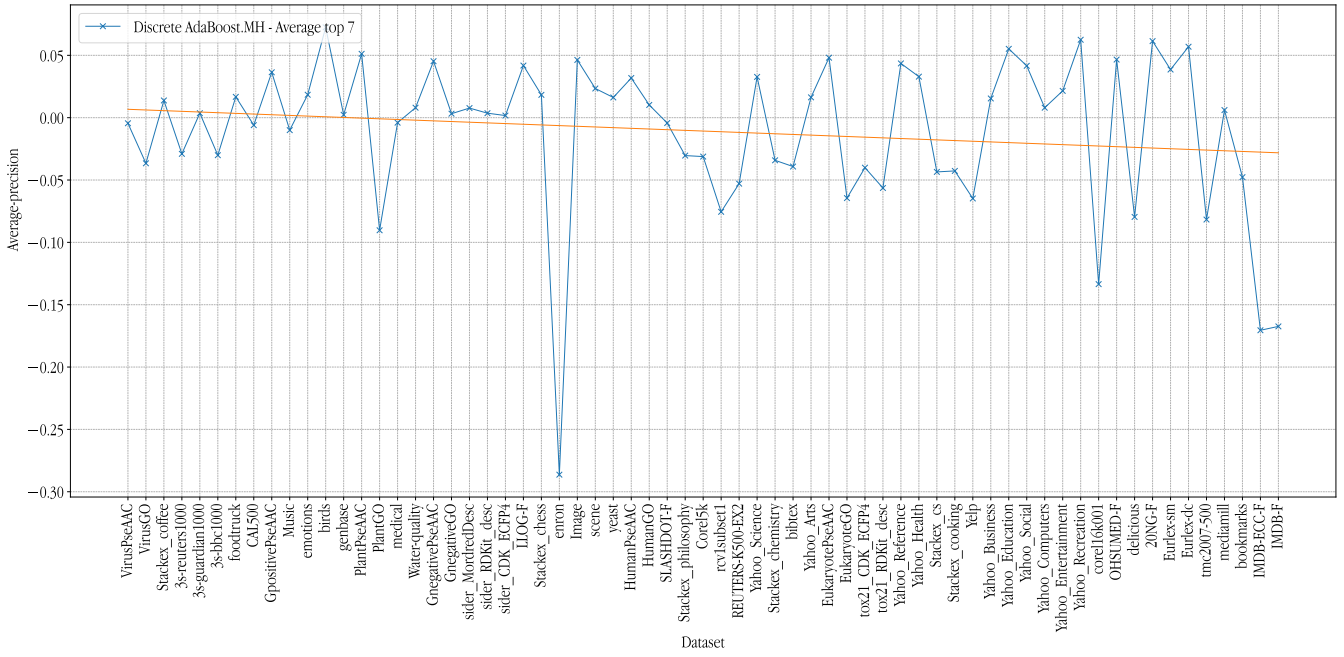


Figure 113: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

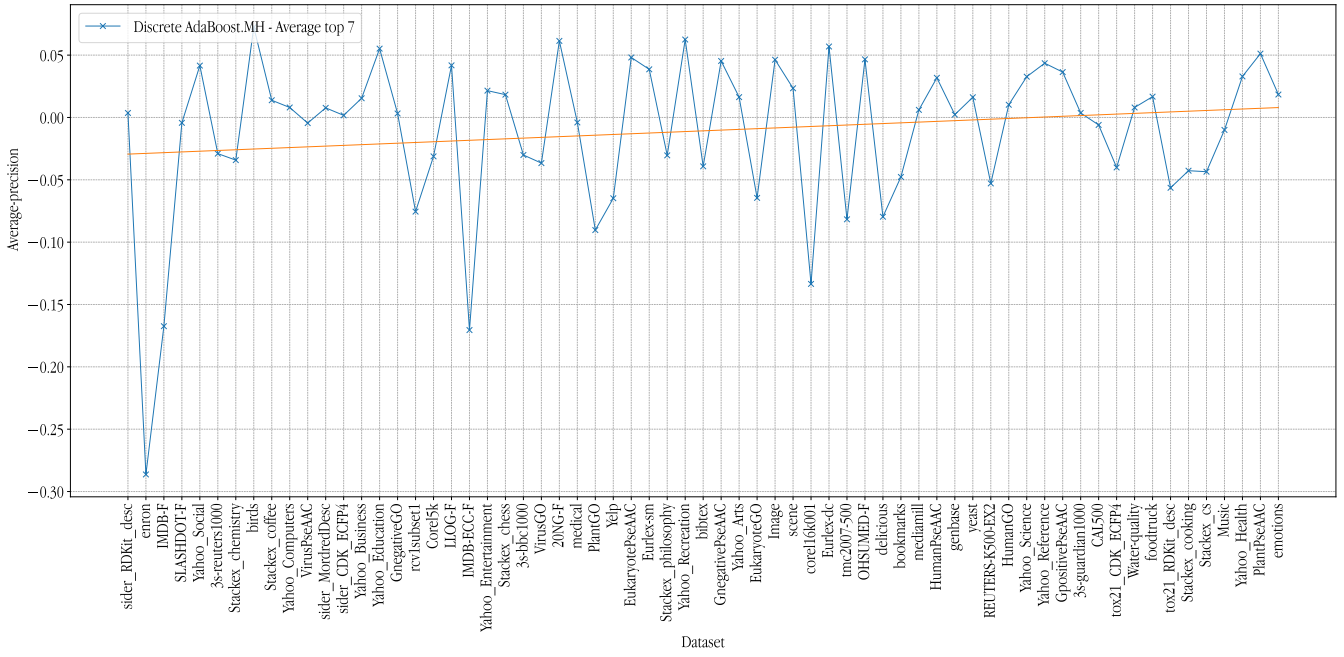


Figure 114: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

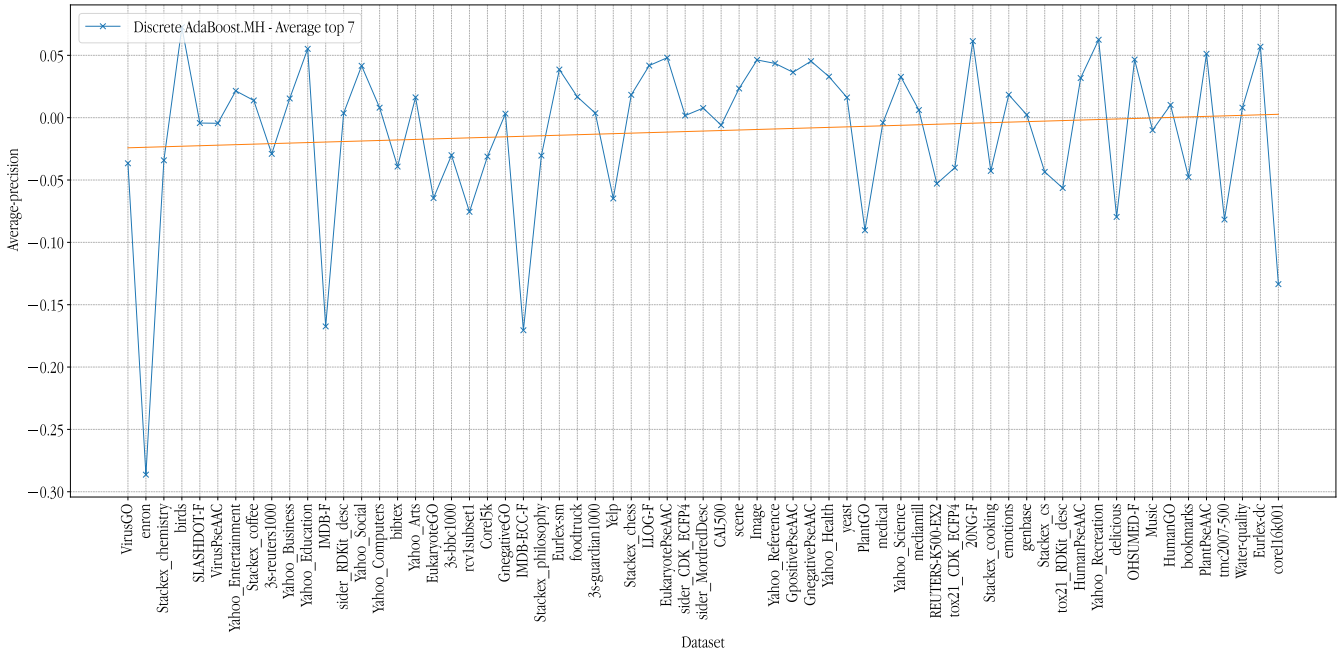


Figure 115: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

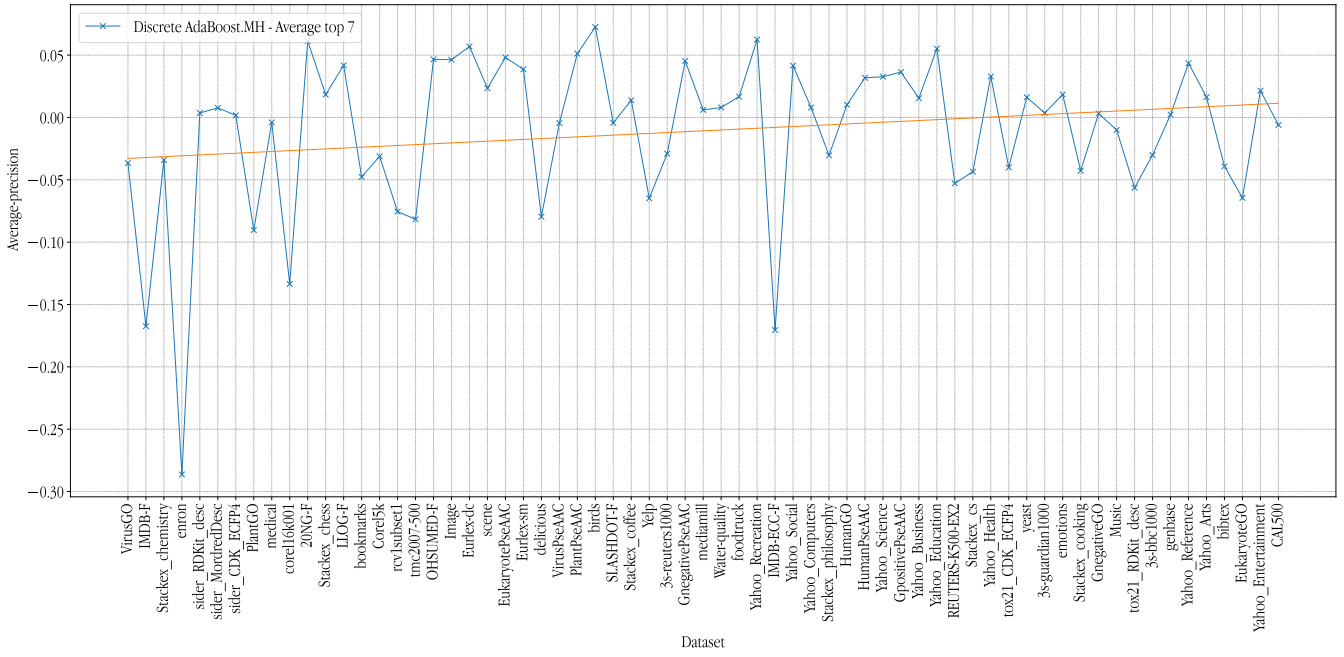


Figure 116: Difference in average precision performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

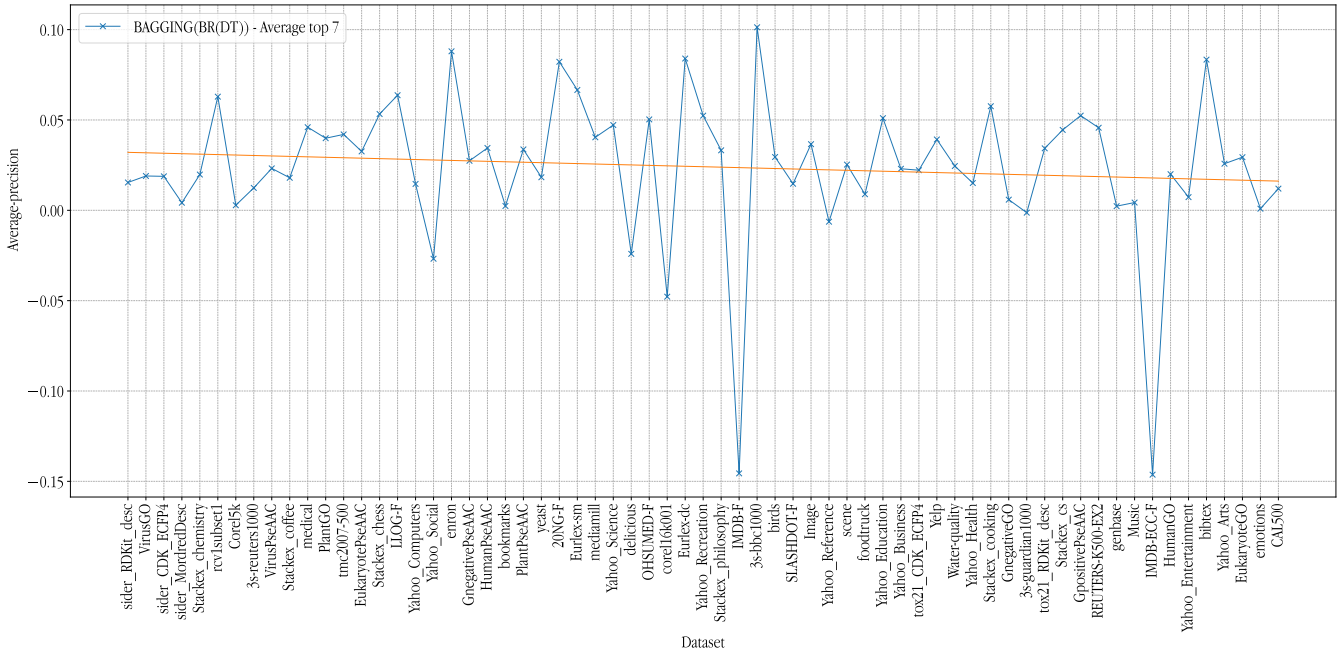


Figure 117: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

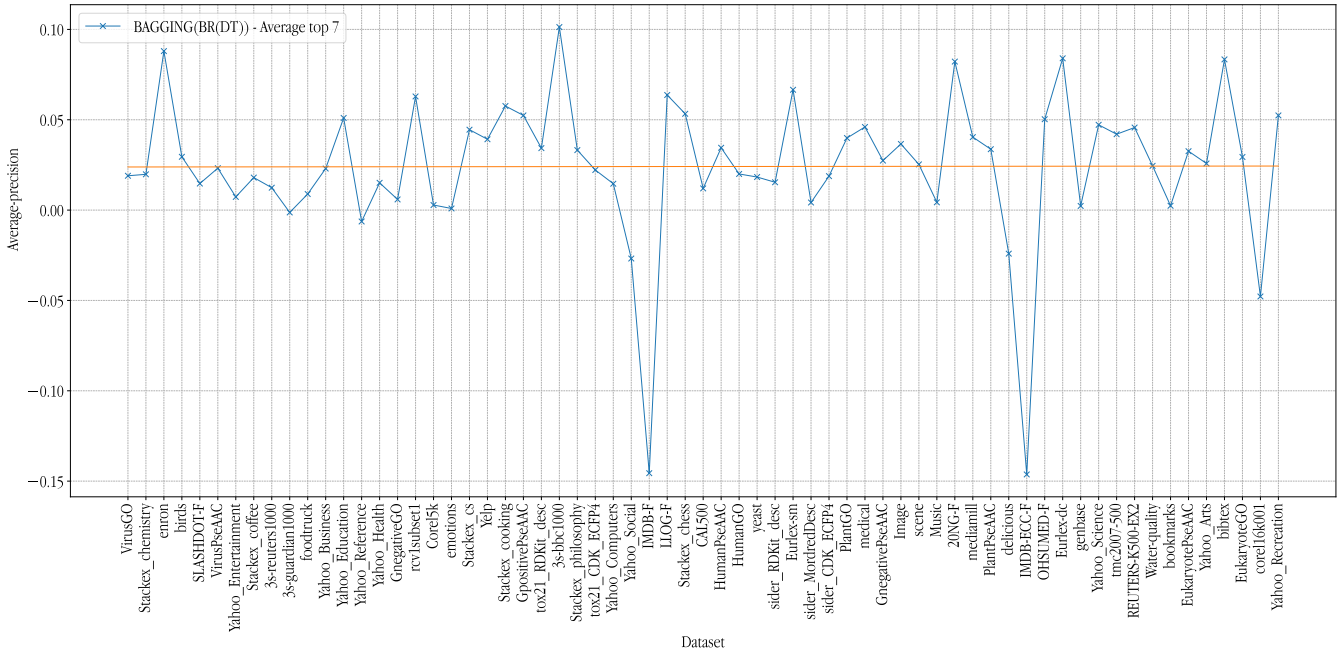


Figure 118: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

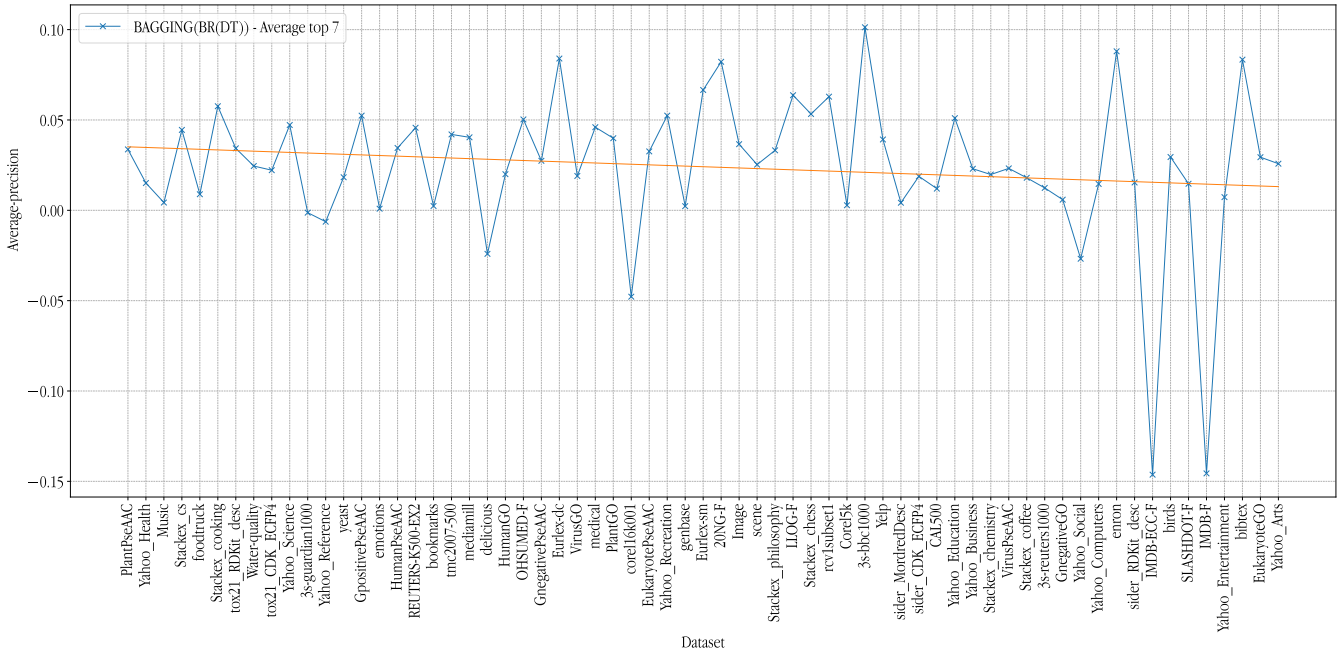


Figure 119: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

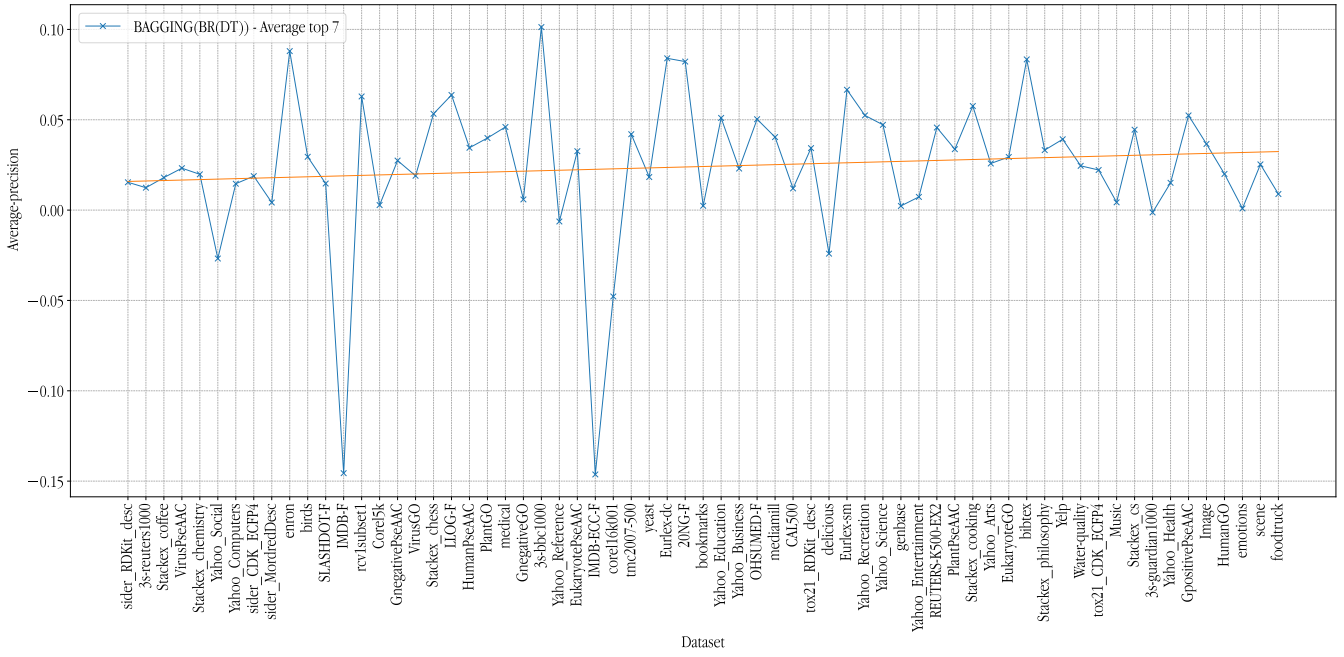


Figure 120: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

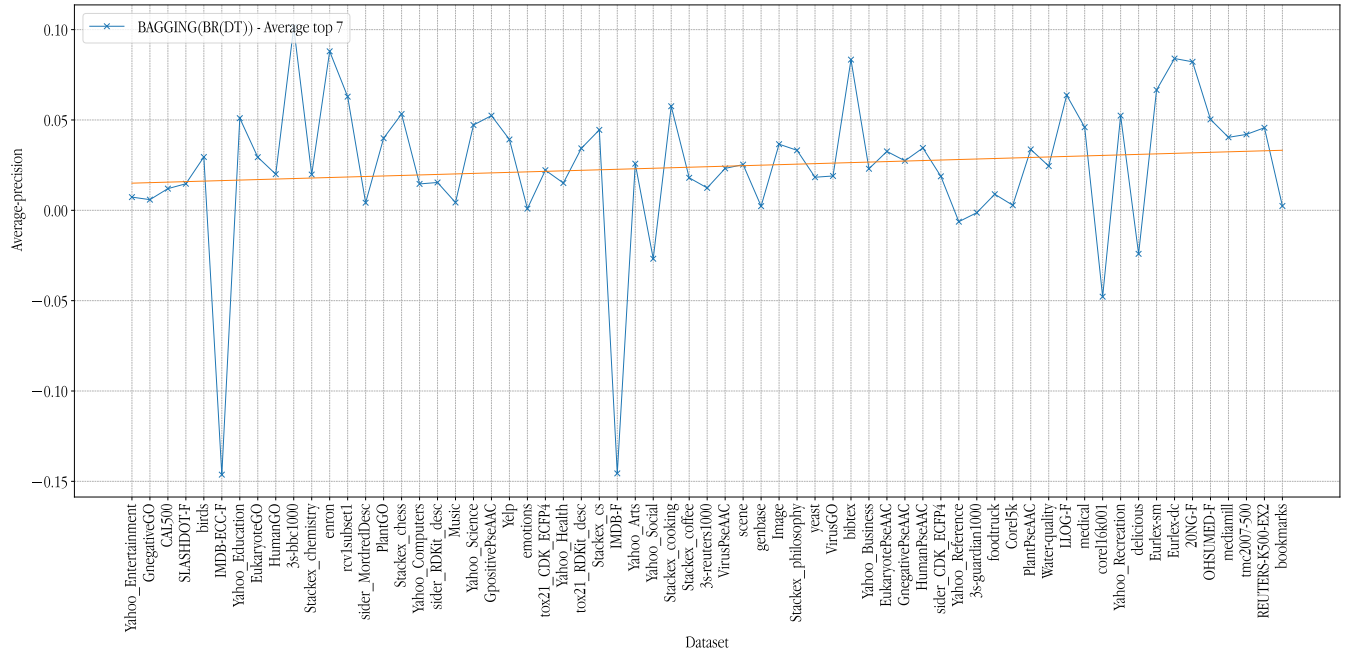


Figure 121: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

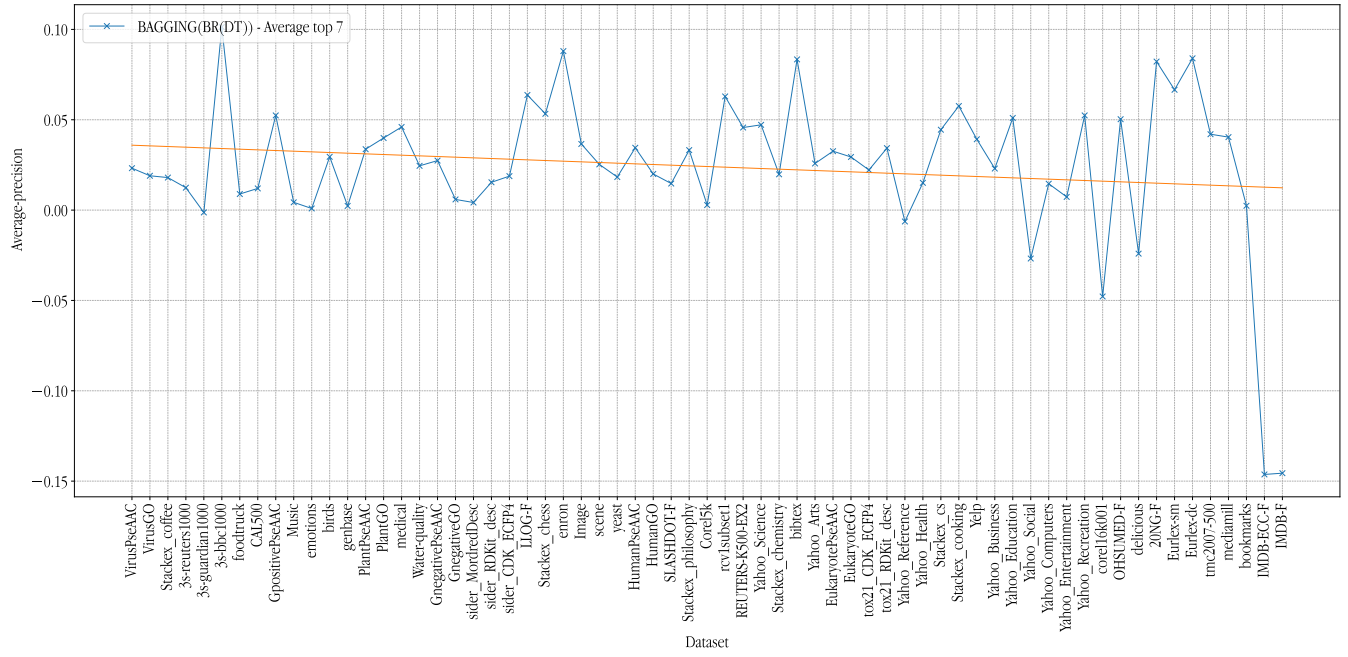


Figure 122: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

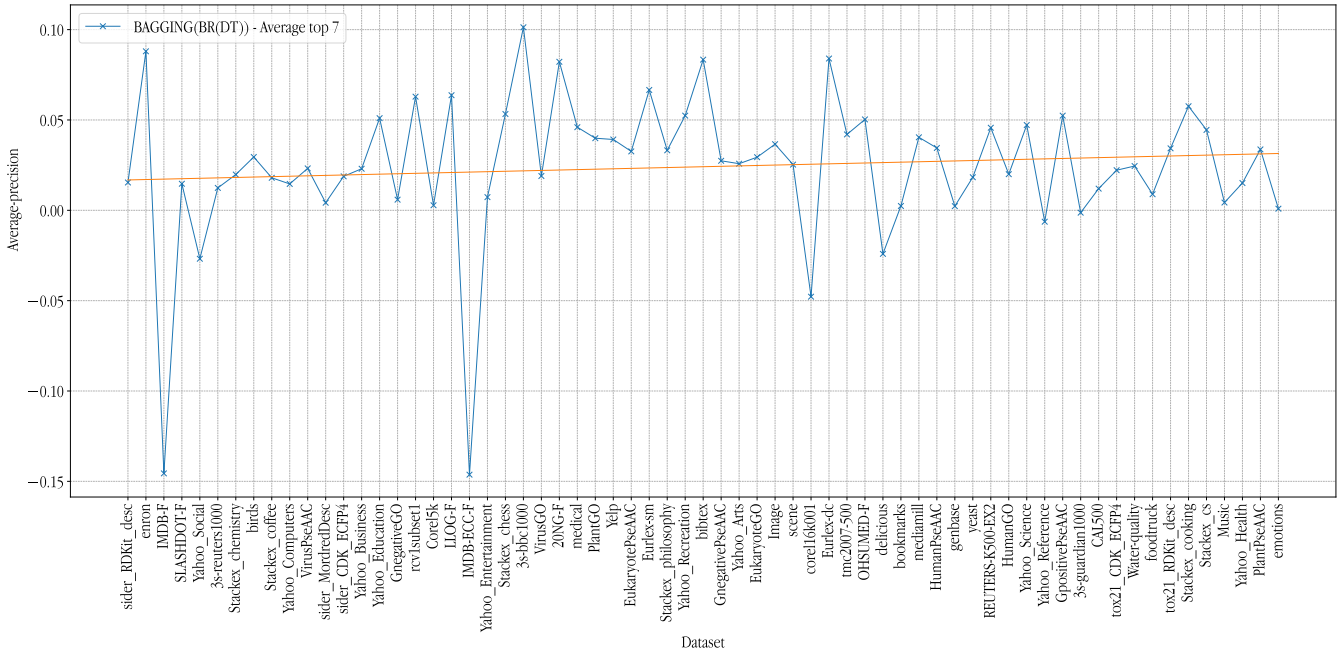


Figure 123: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

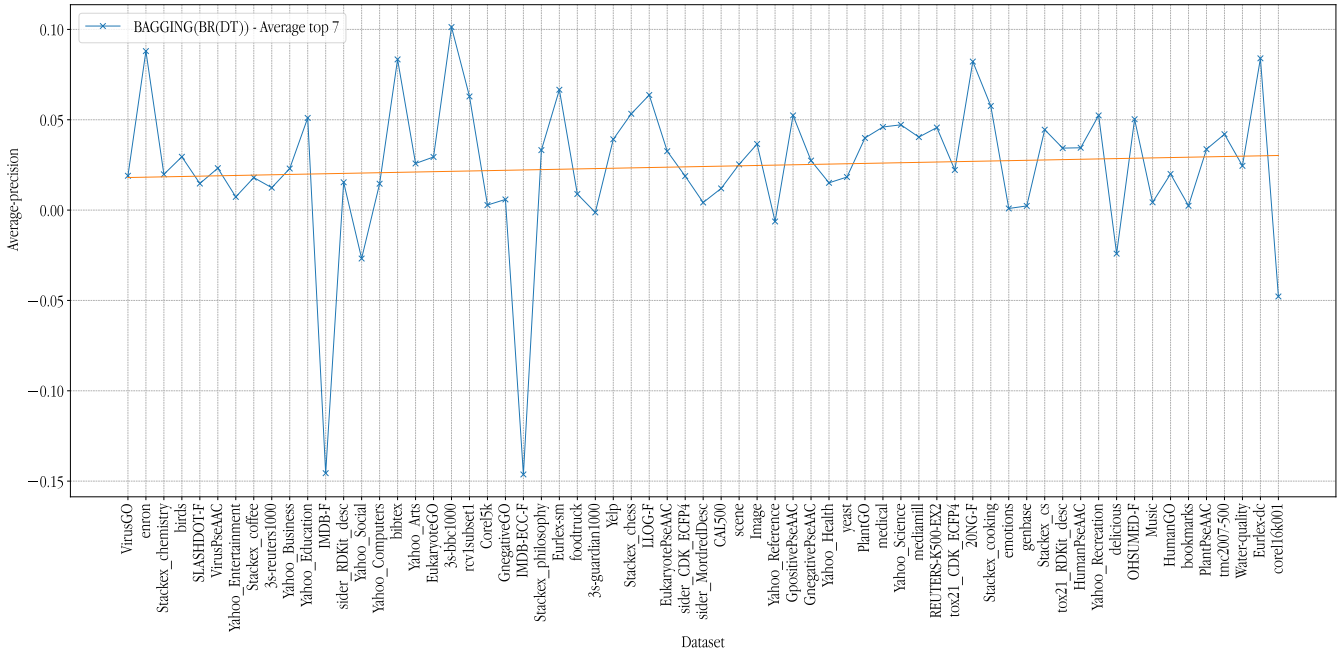


Figure 124: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

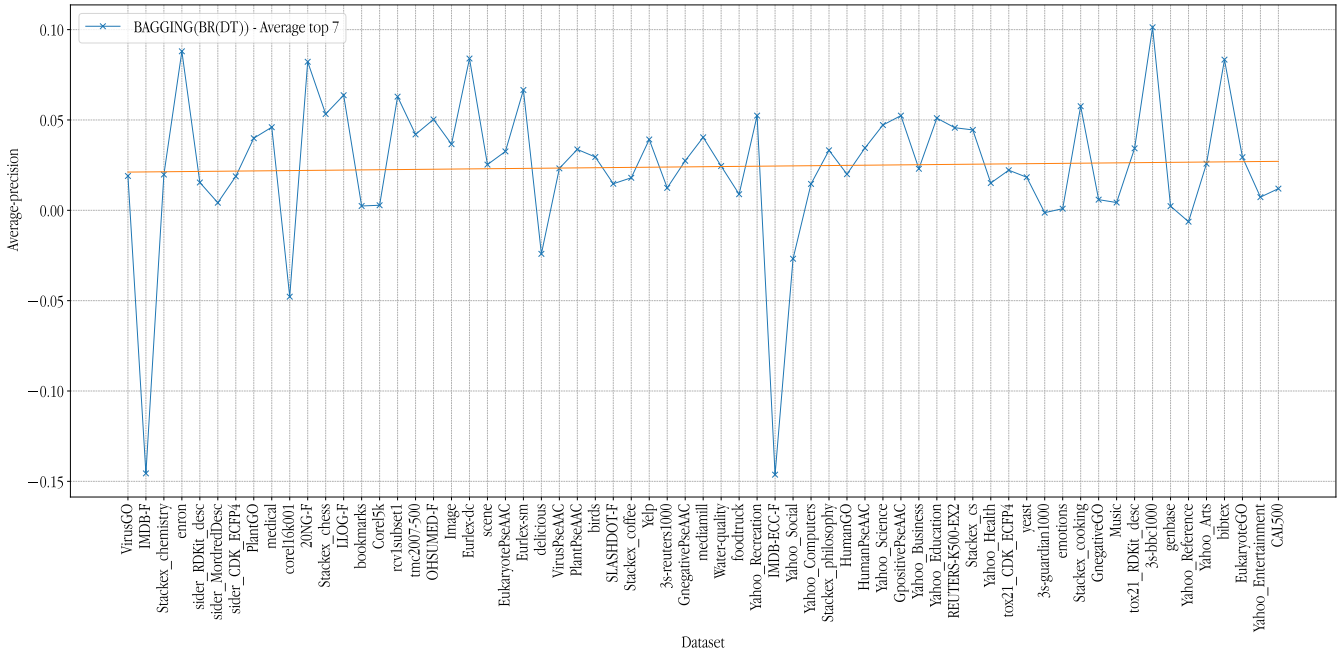


Figure 125: Difference in average precision performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

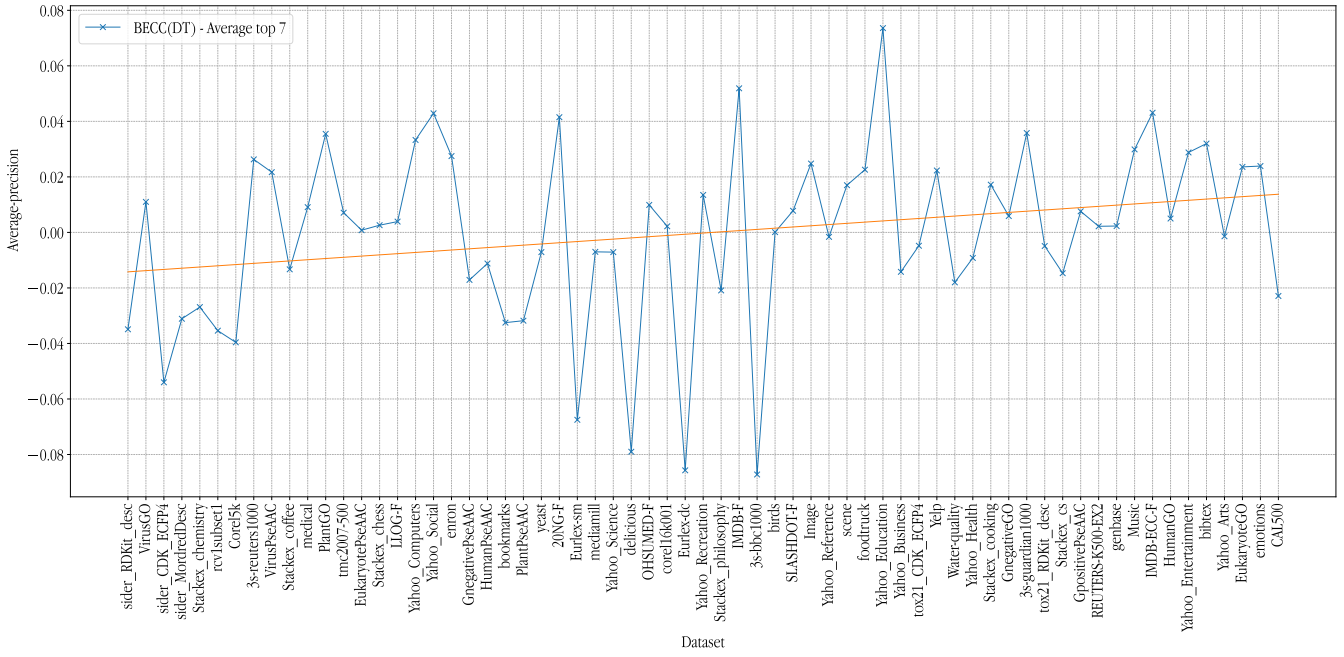


Figure 126: Difference in average precision performance between BECC and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

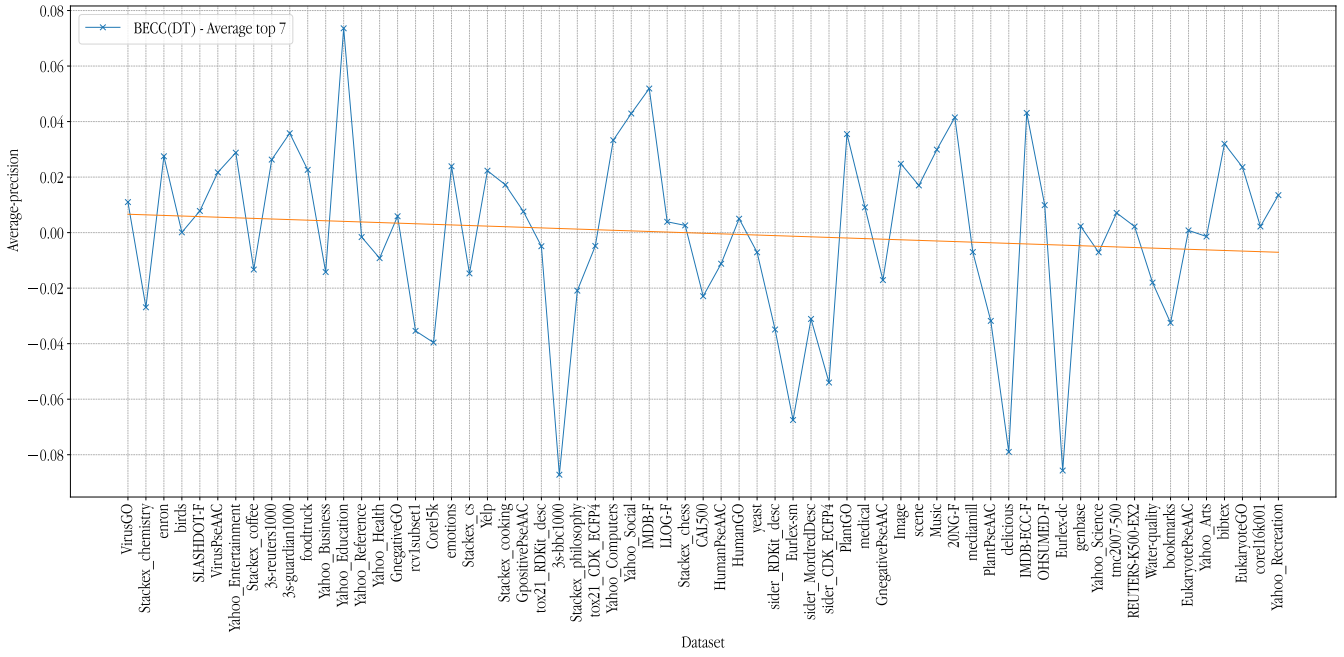


Figure 127: Difference in average precision performance between BECC and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

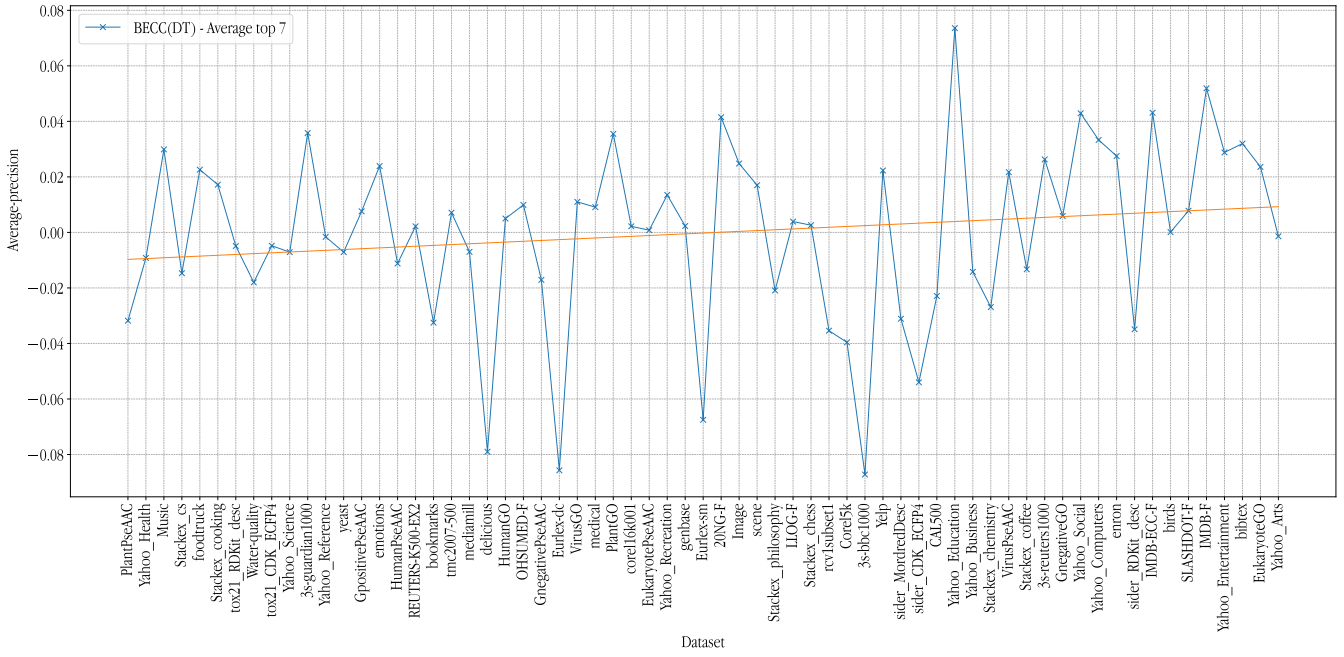


Figure 128: Difference in average precision performance between BECC and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

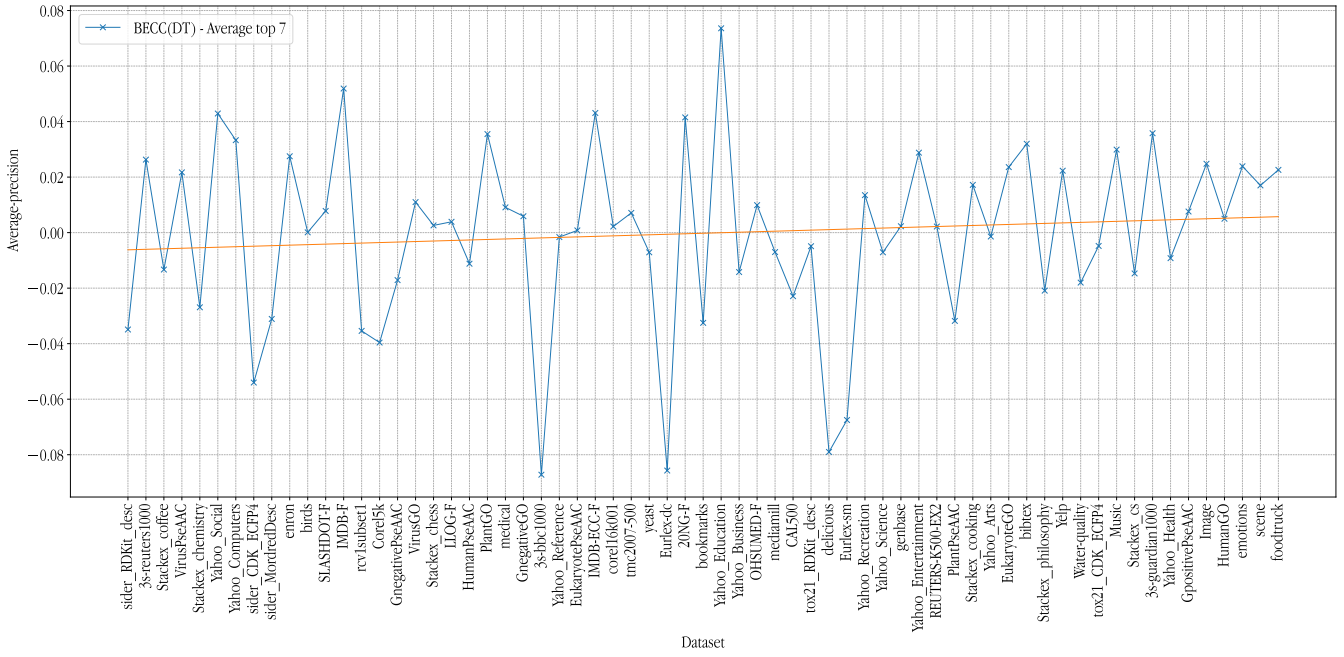


Figure 129: Difference in average precision performance between BECC and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

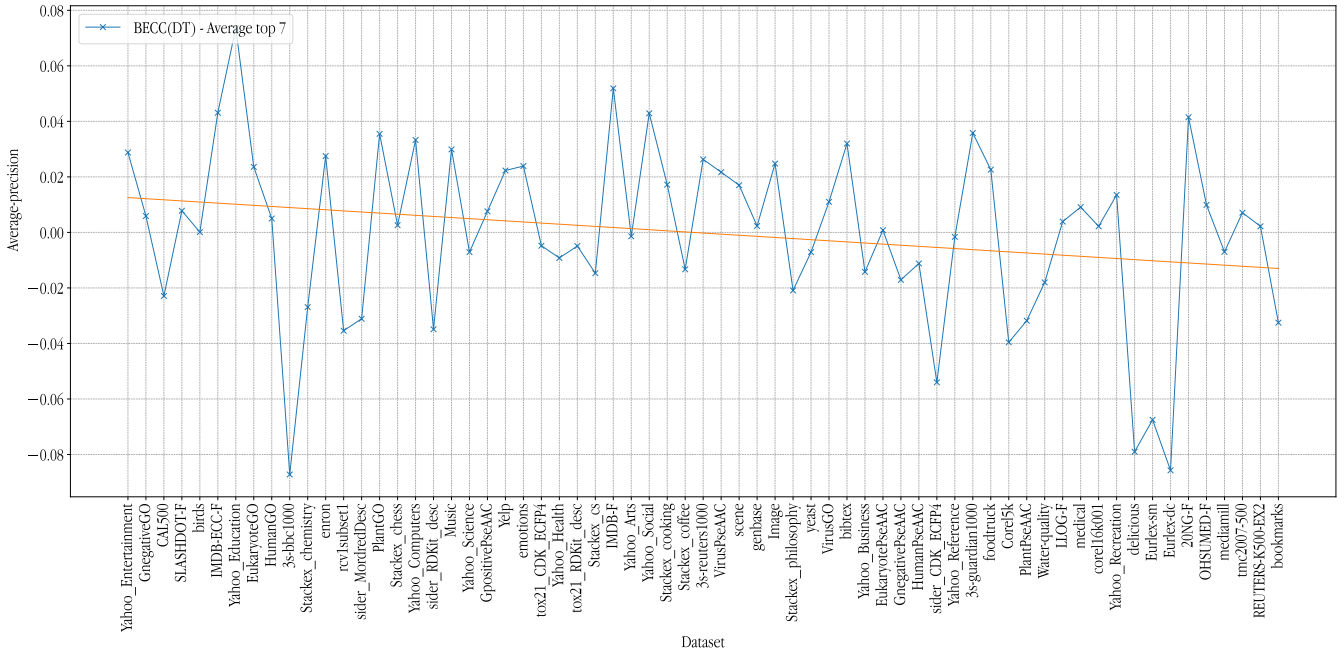


Figure 130: Difference in average precision performance between BECC and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

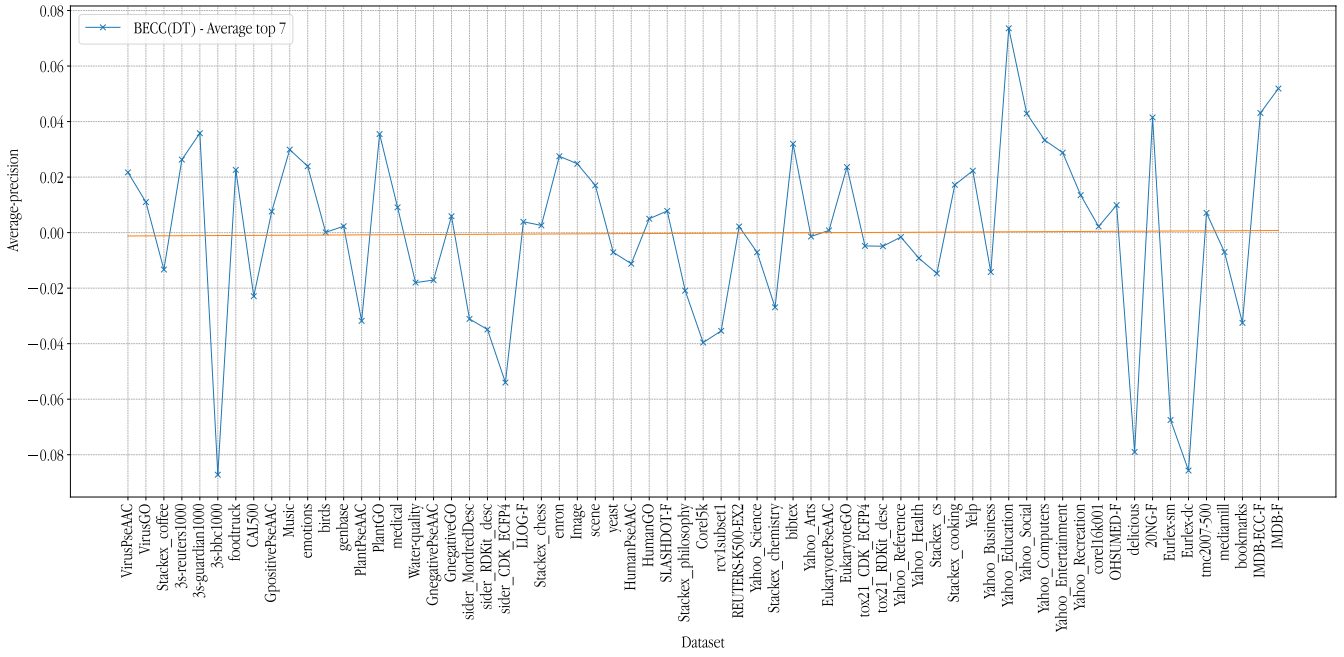


Figure 131: Difference in average precision performance between BECC and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

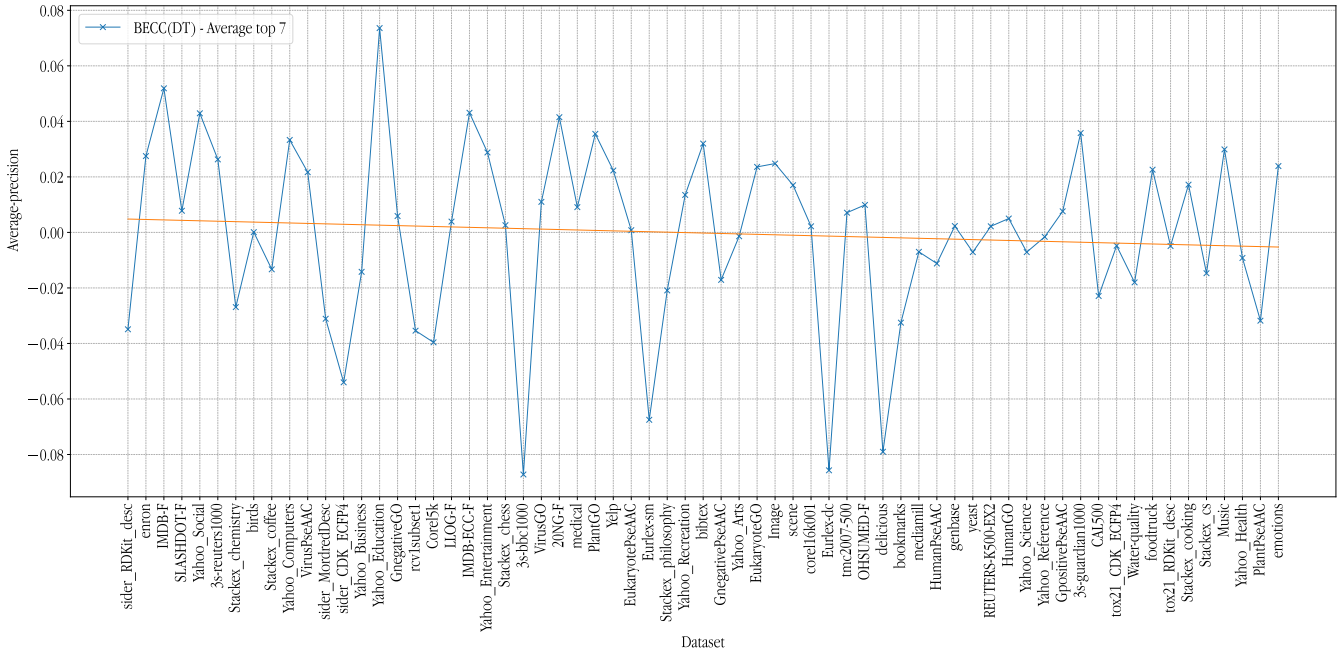


Figure 132: Difference in average precision performance between BECC and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

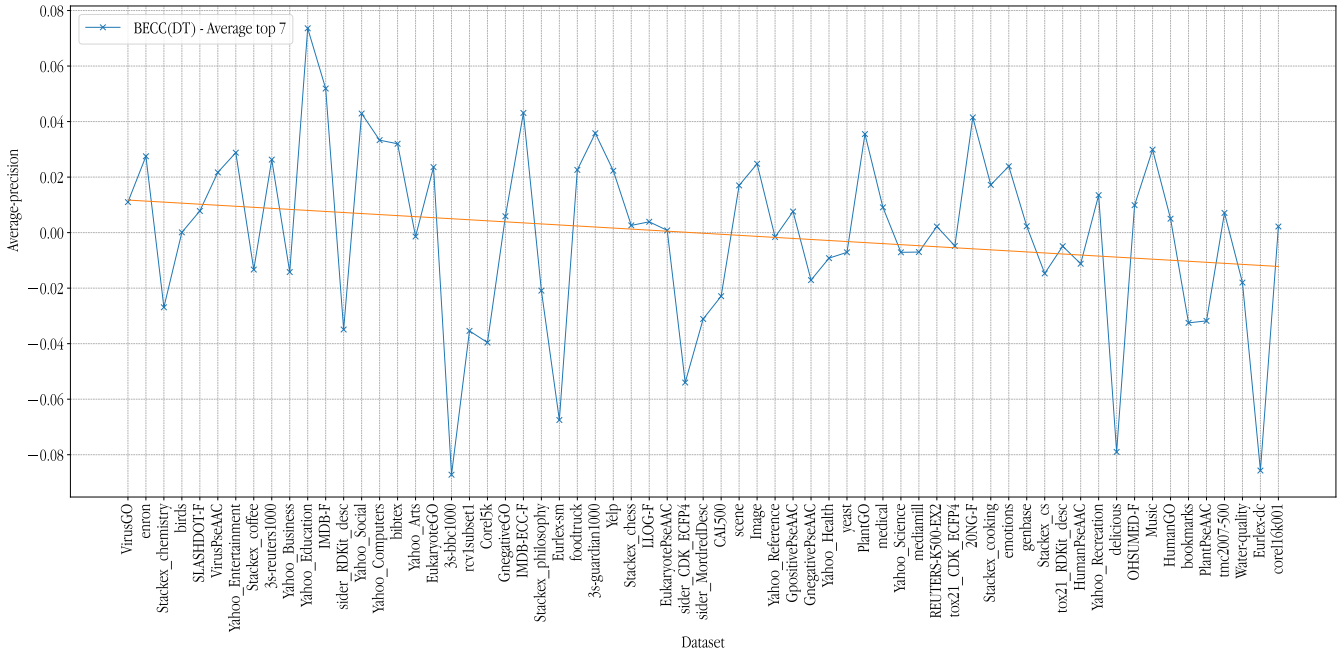


Figure 133: Difference in average precision performance between BECC and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

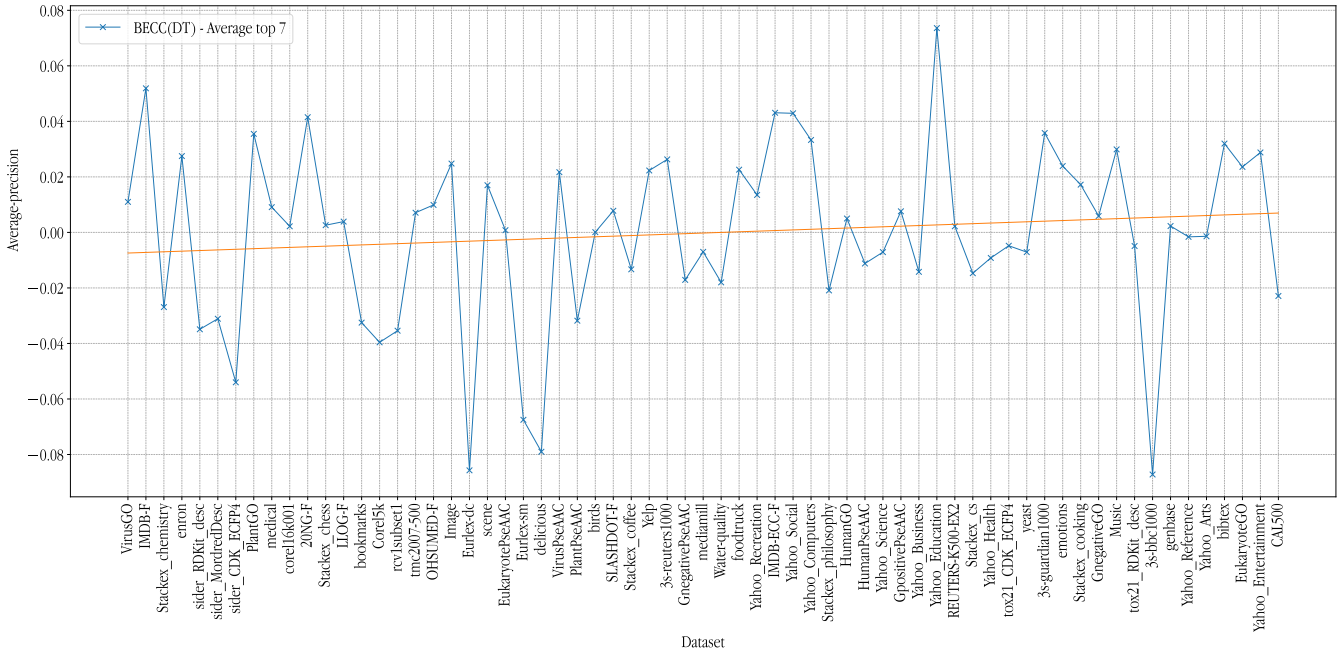


Figure 134: Difference in average precision performance between BECC and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

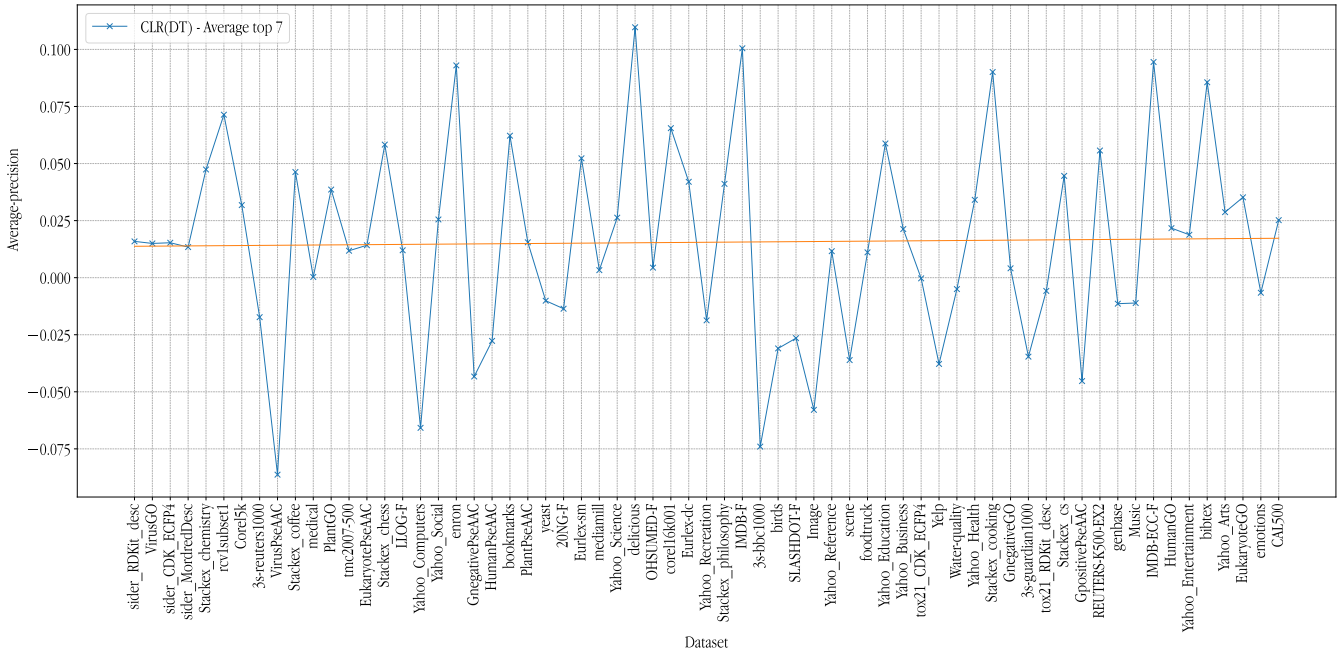


Figure 135: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

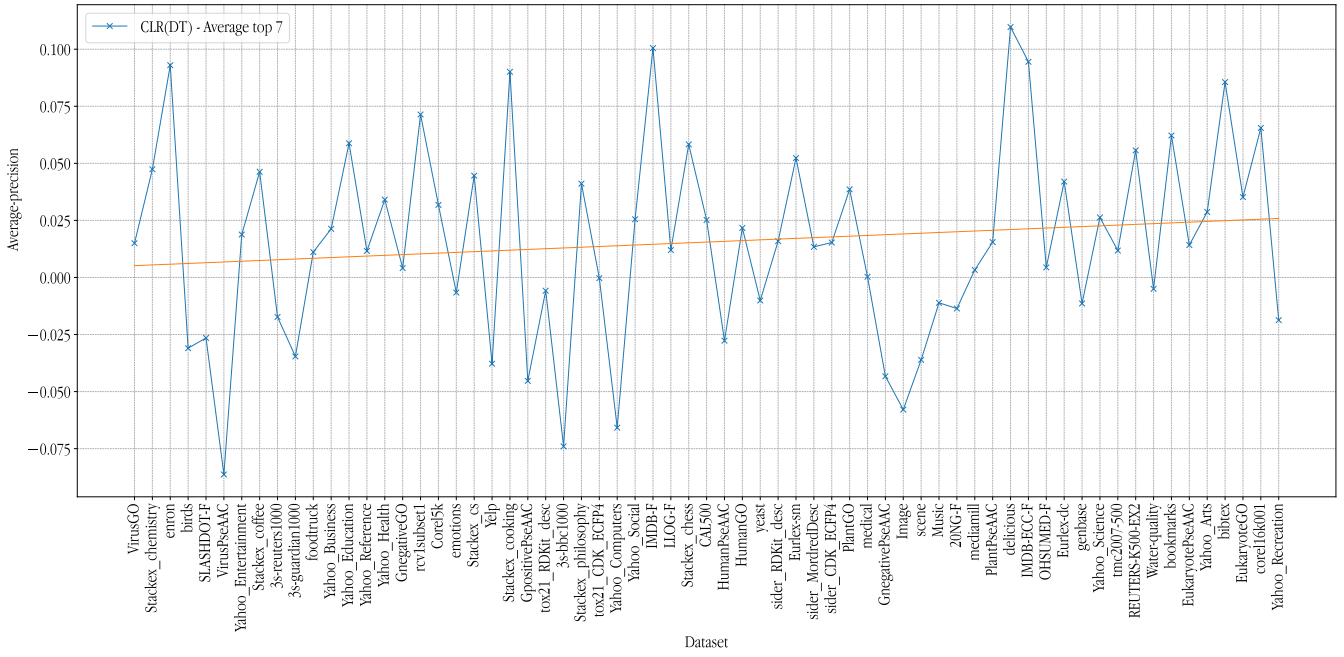


Figure 136: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

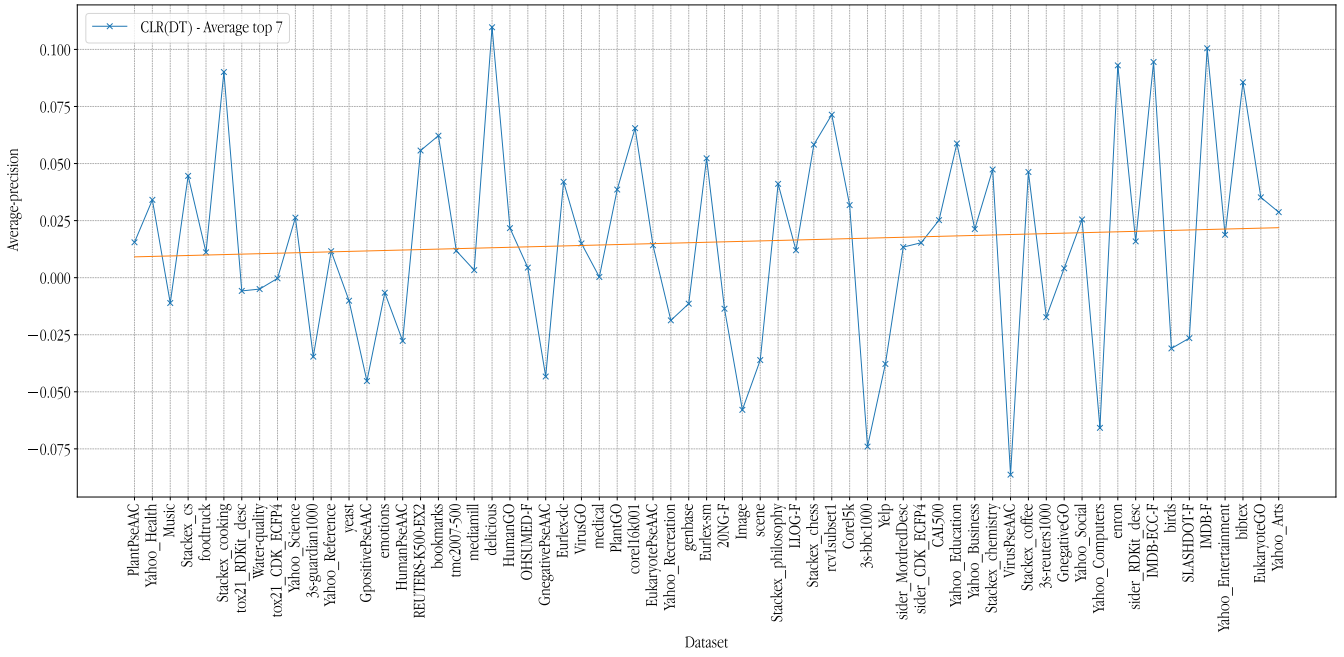


Figure 137: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

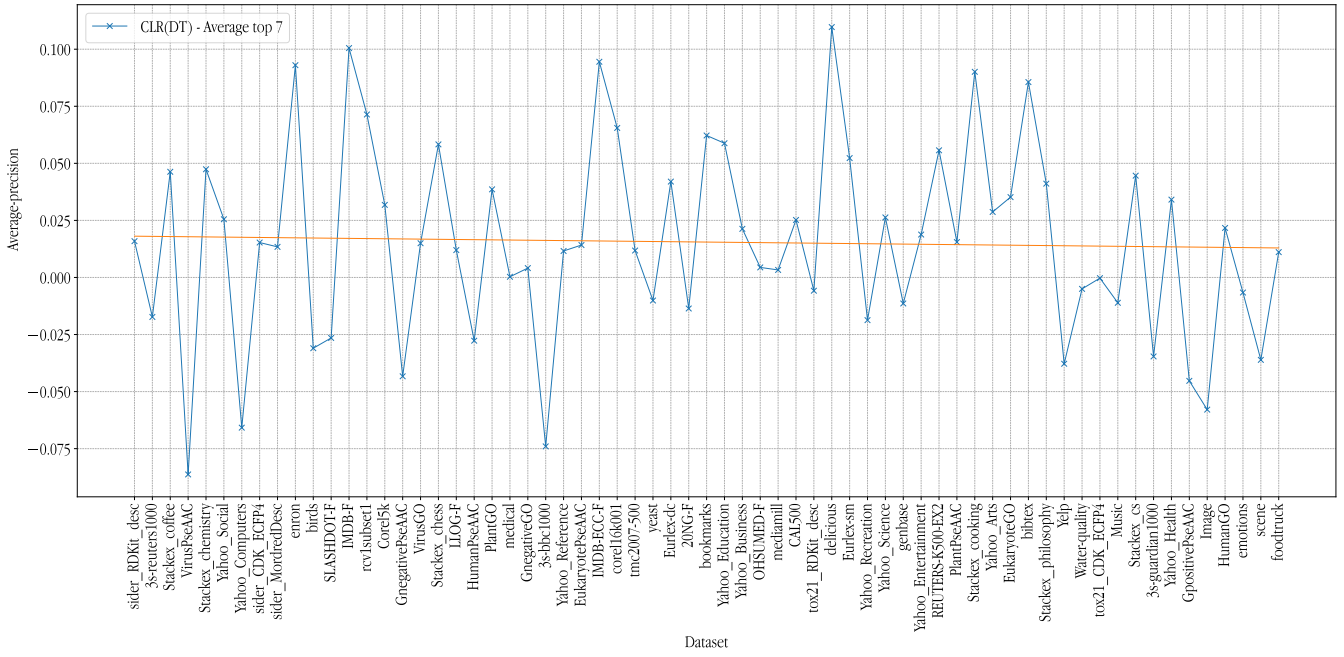


Figure 138: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

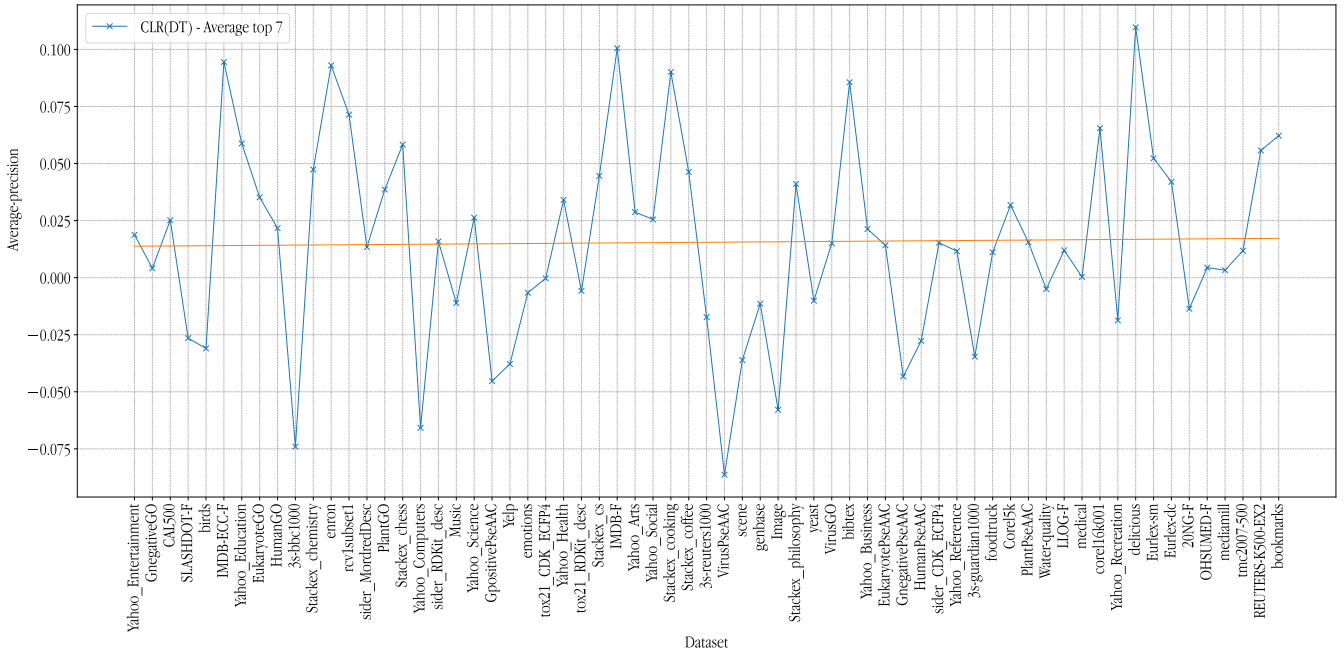


Figure 139: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

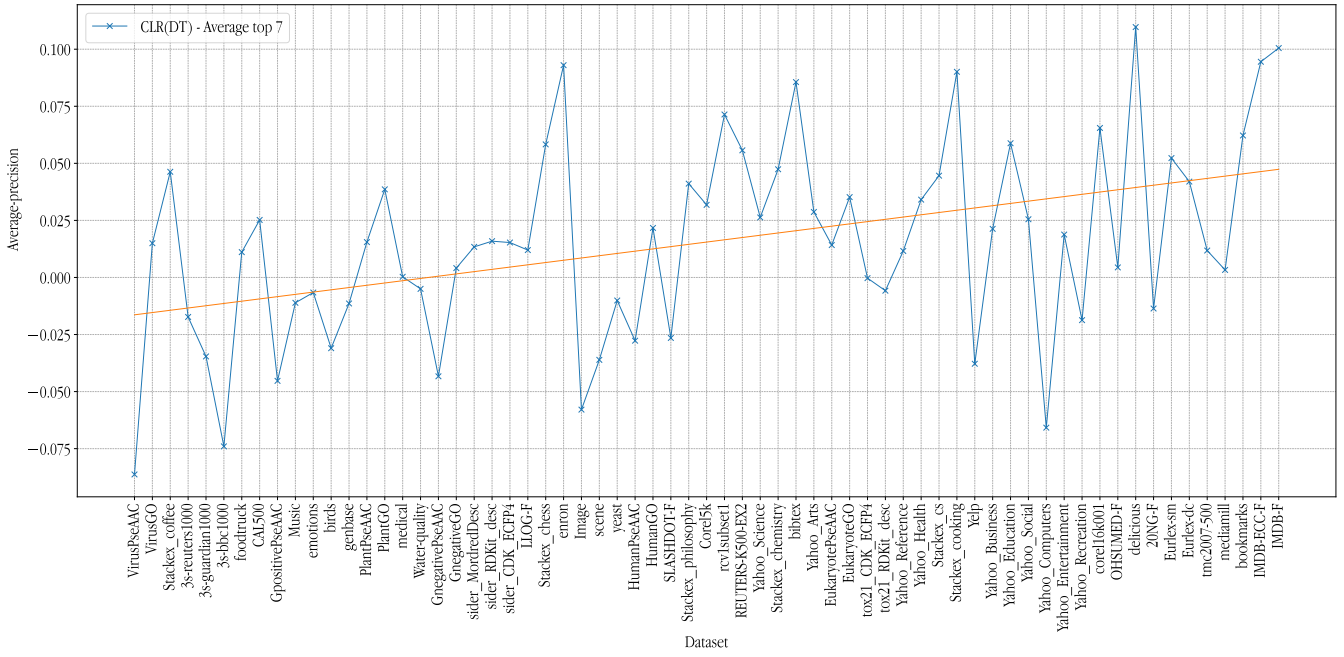


Figure 140: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

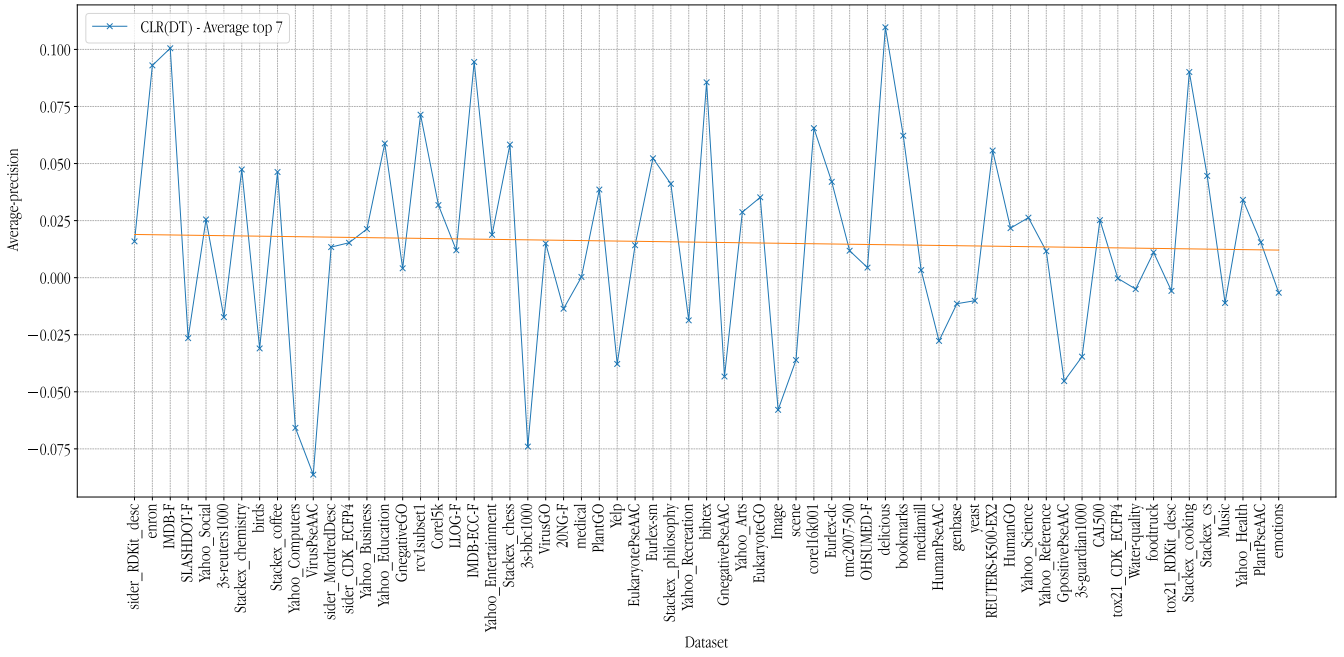


Figure 141: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

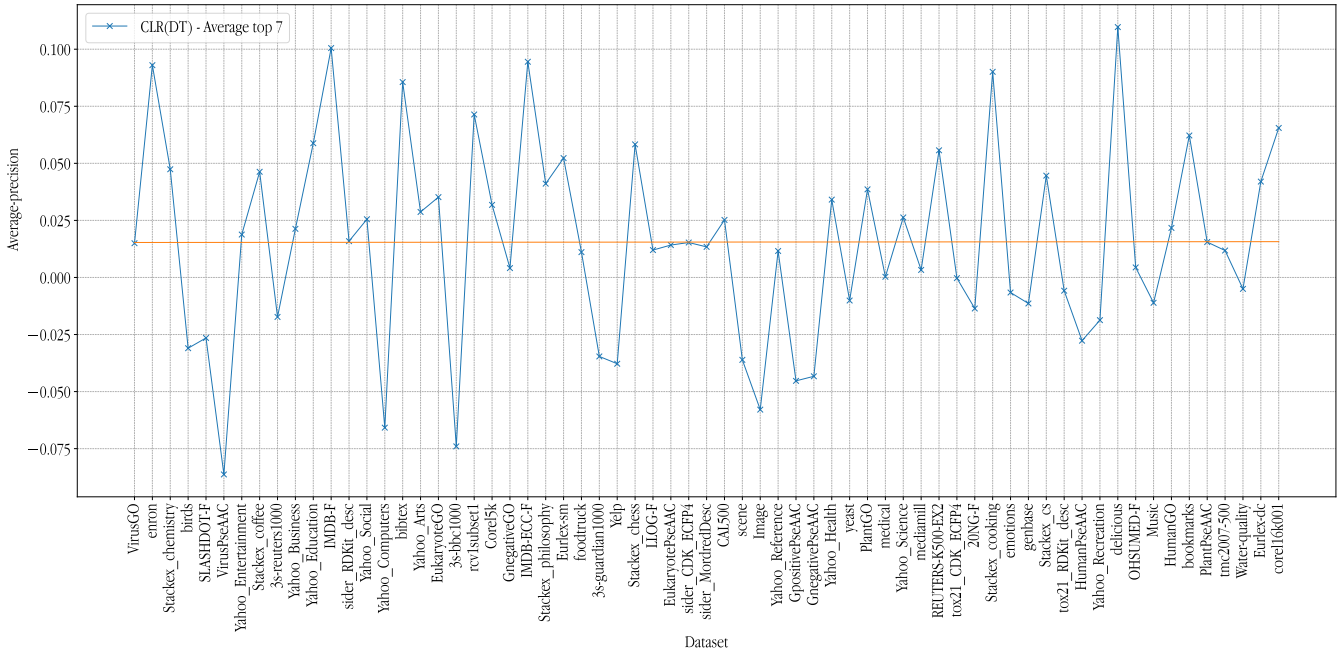


Figure 142: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

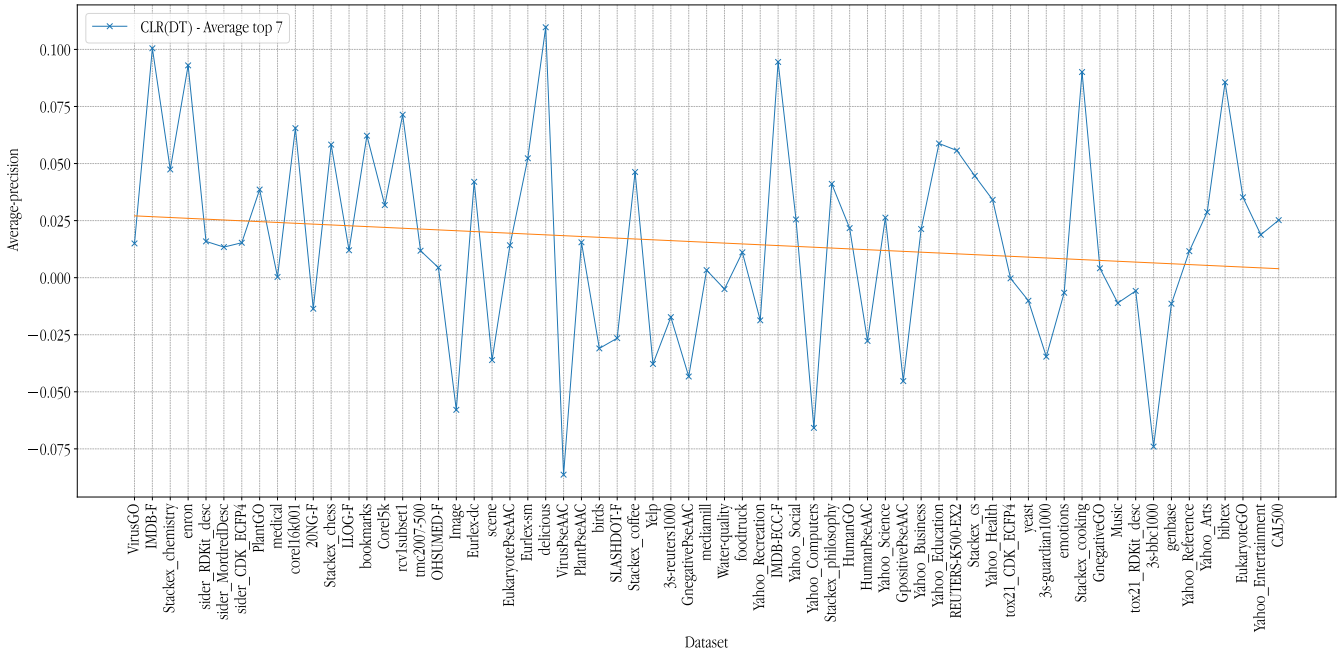


Figure 143: Difference in average precision performance between CLR(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

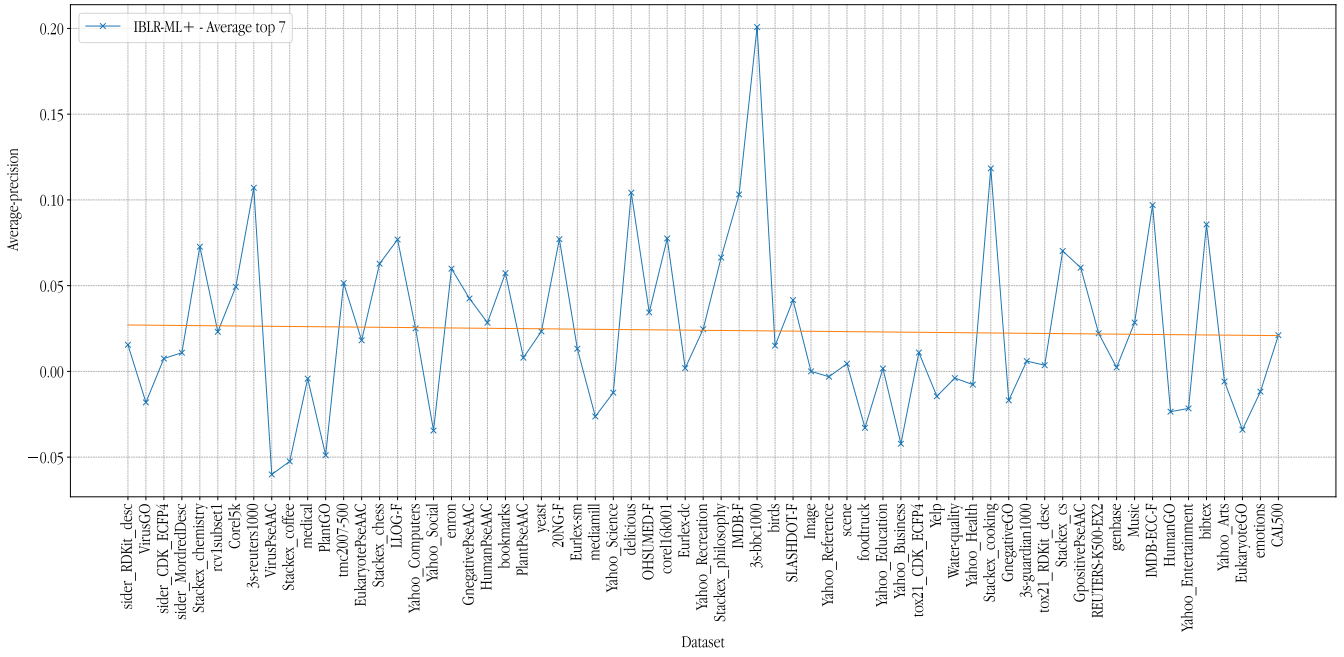


Figure 144: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

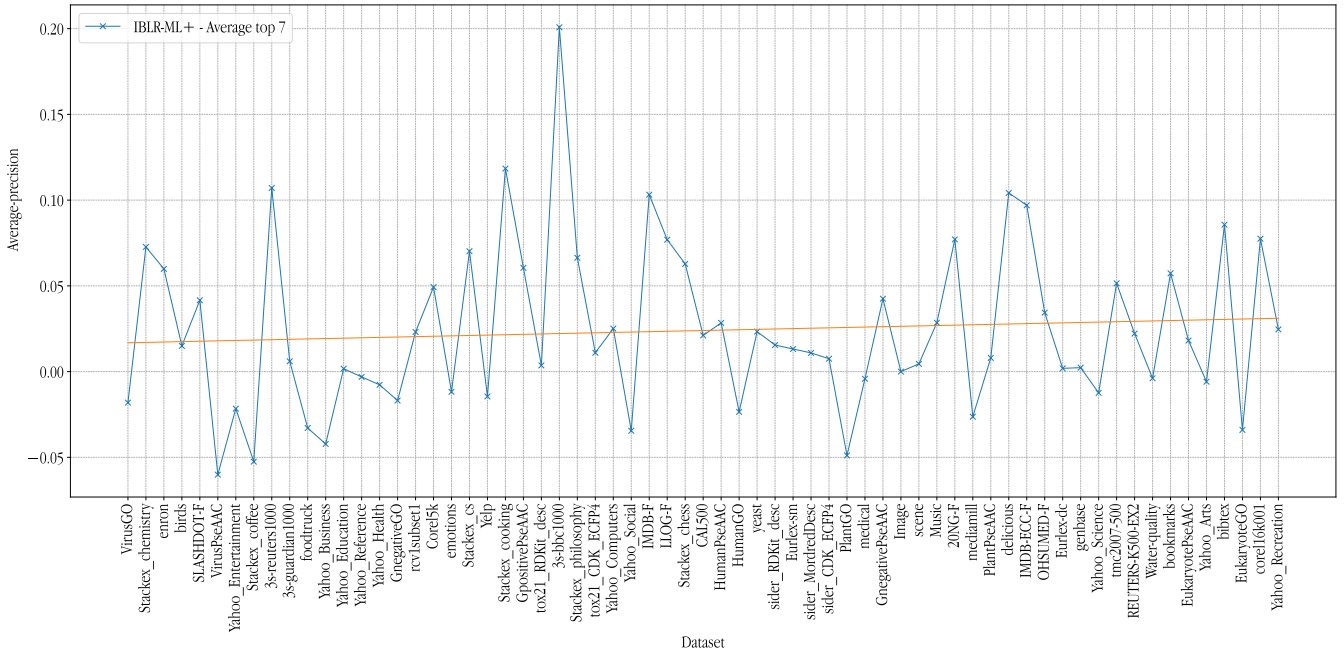


Figure 145: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

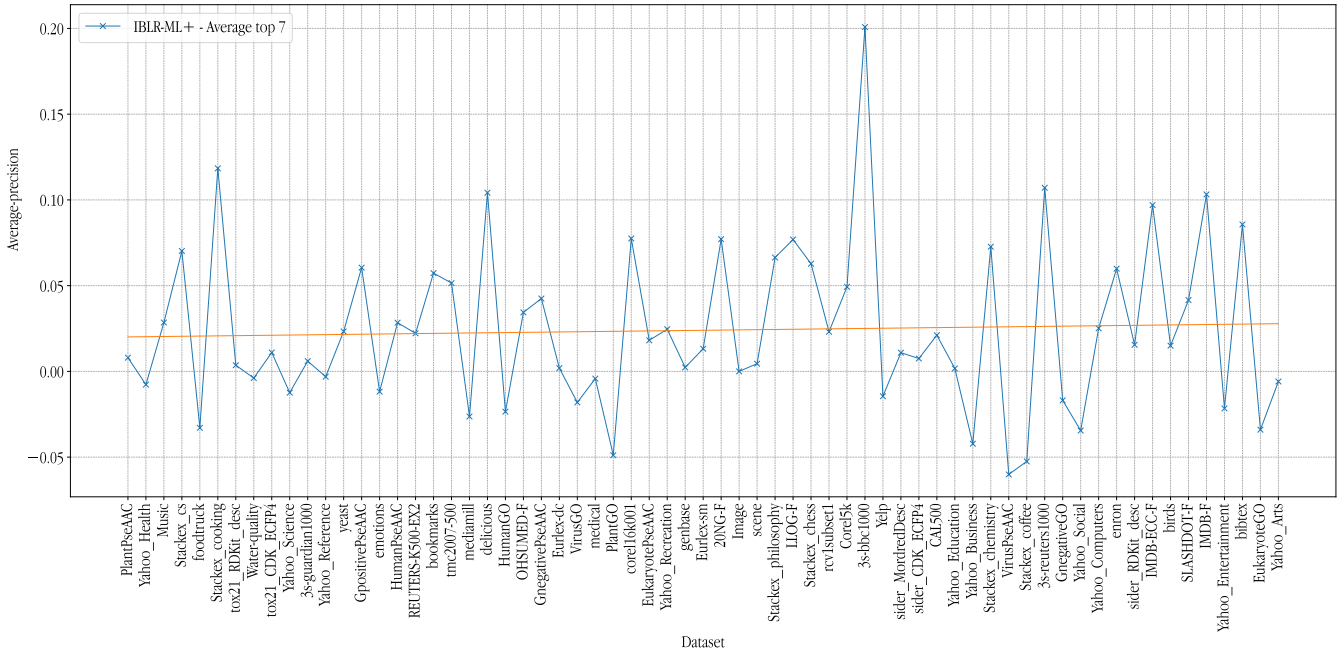


Figure 146: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

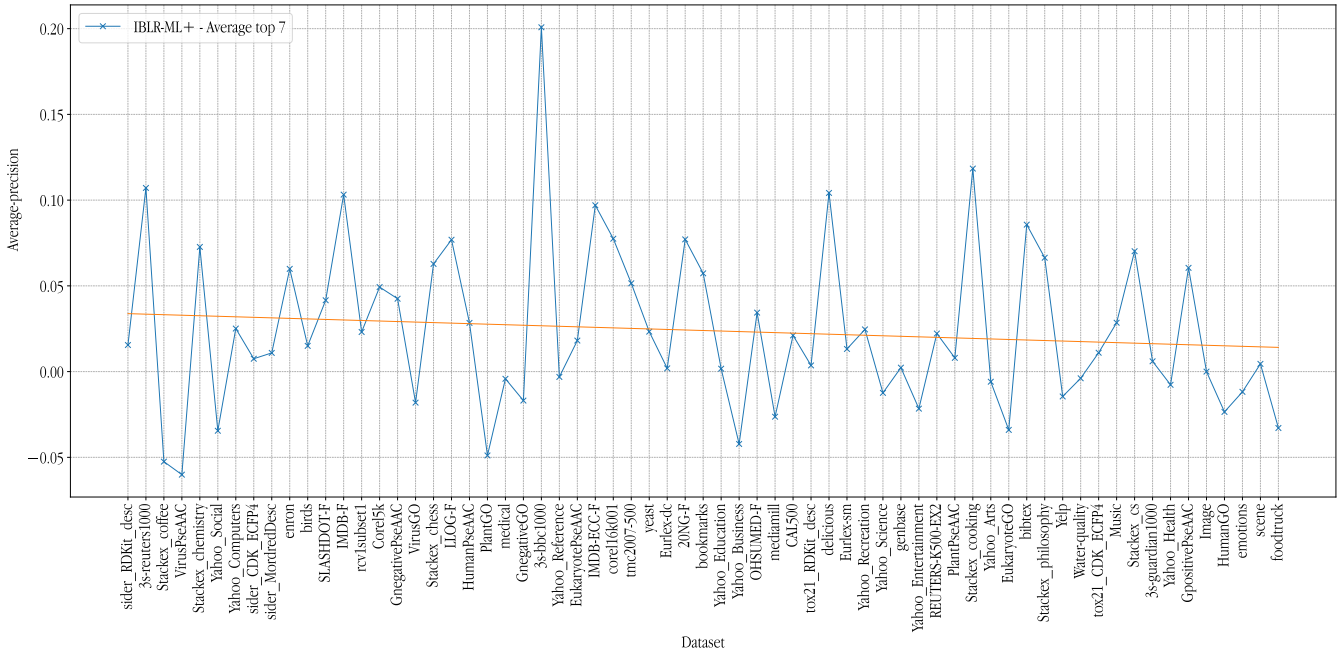


Figure 147: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

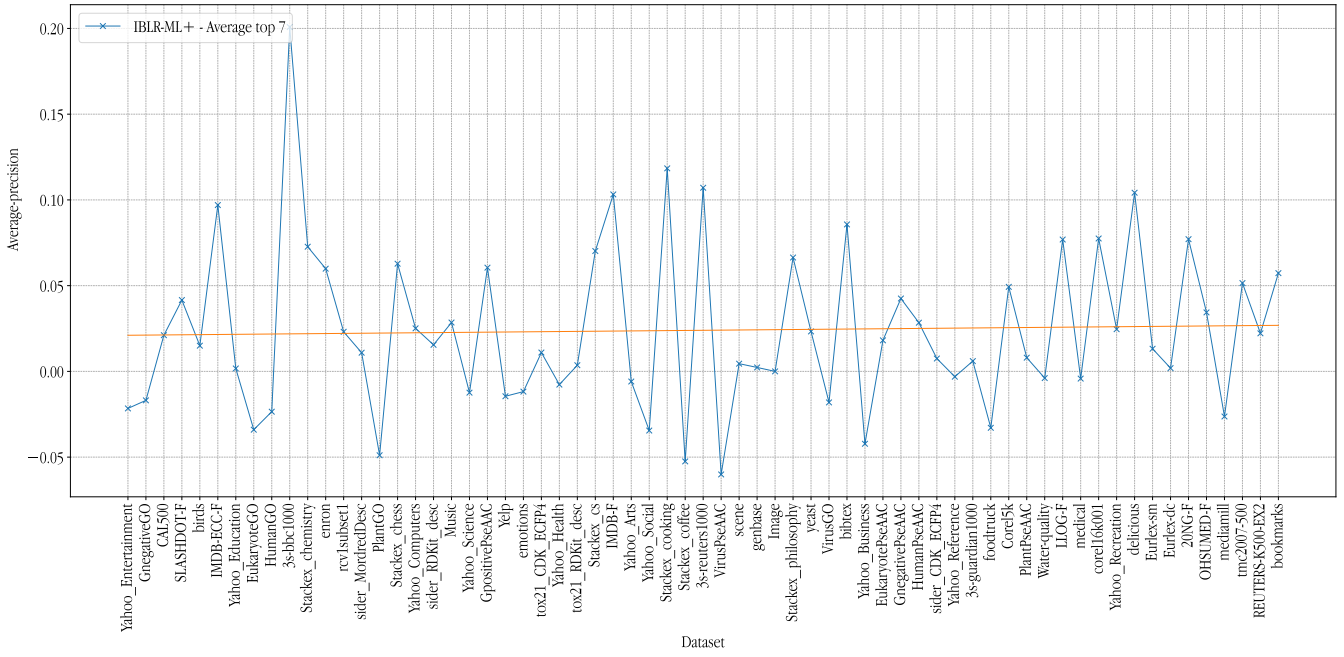


Figure 148: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

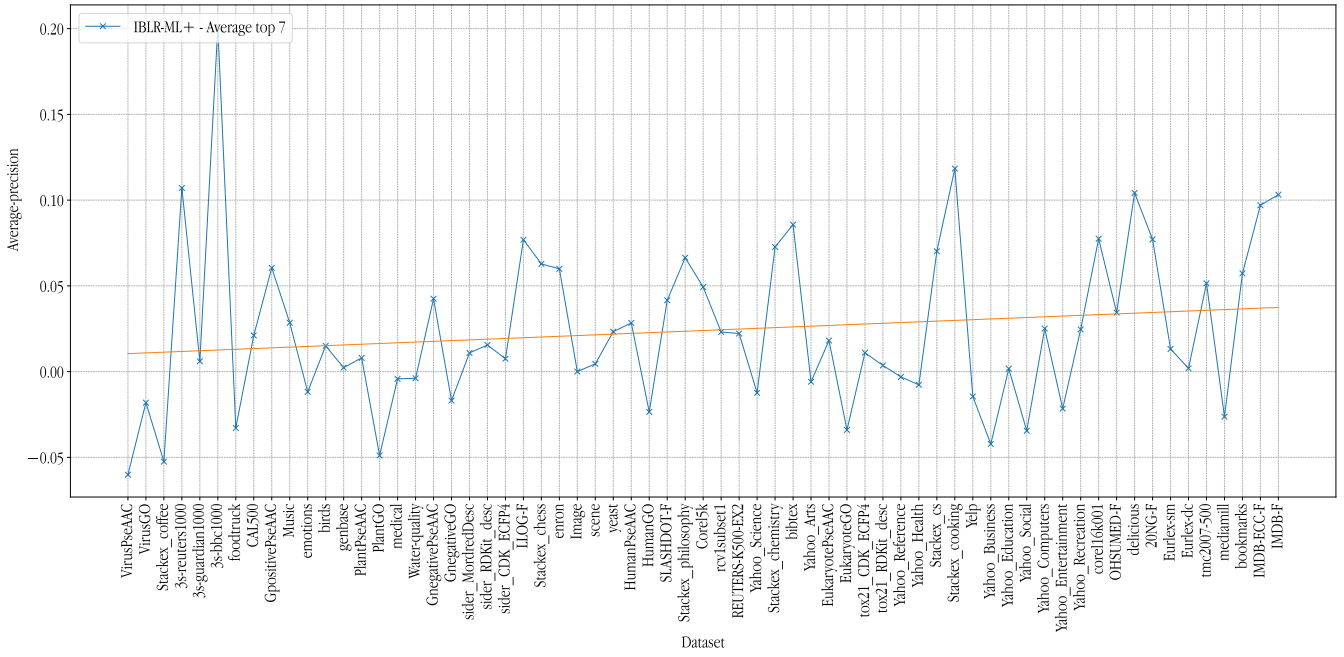


Figure 149: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

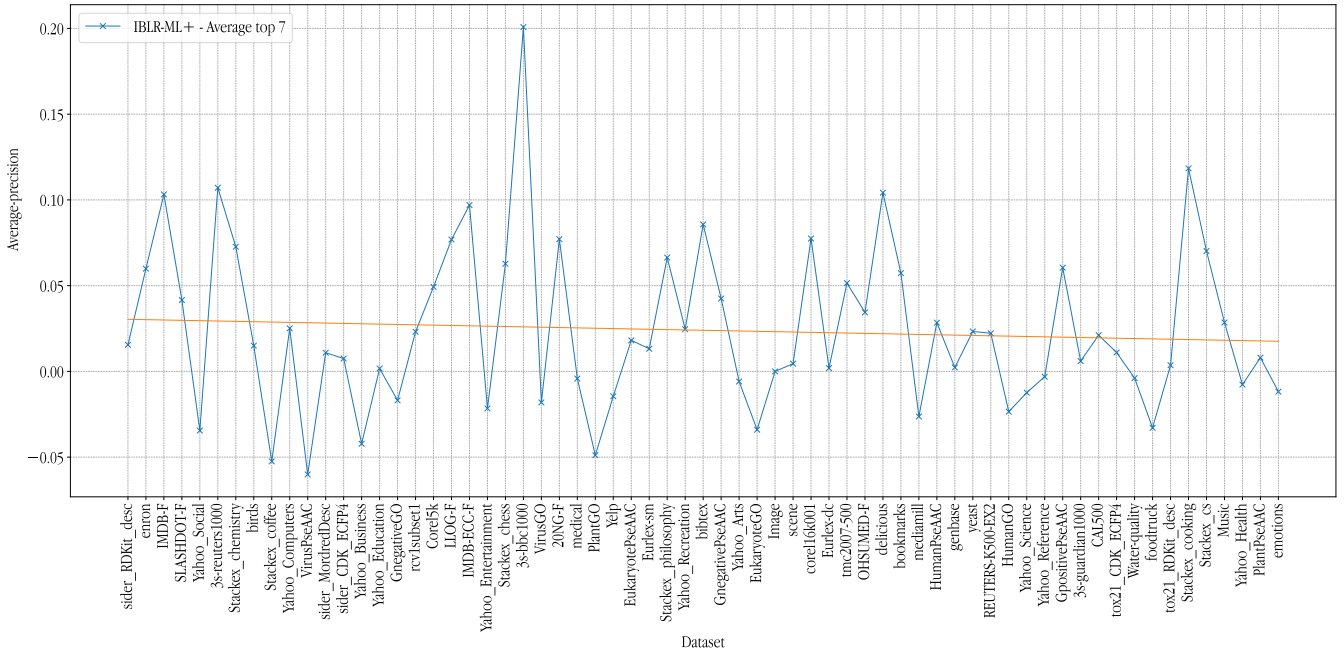


Figure 150: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

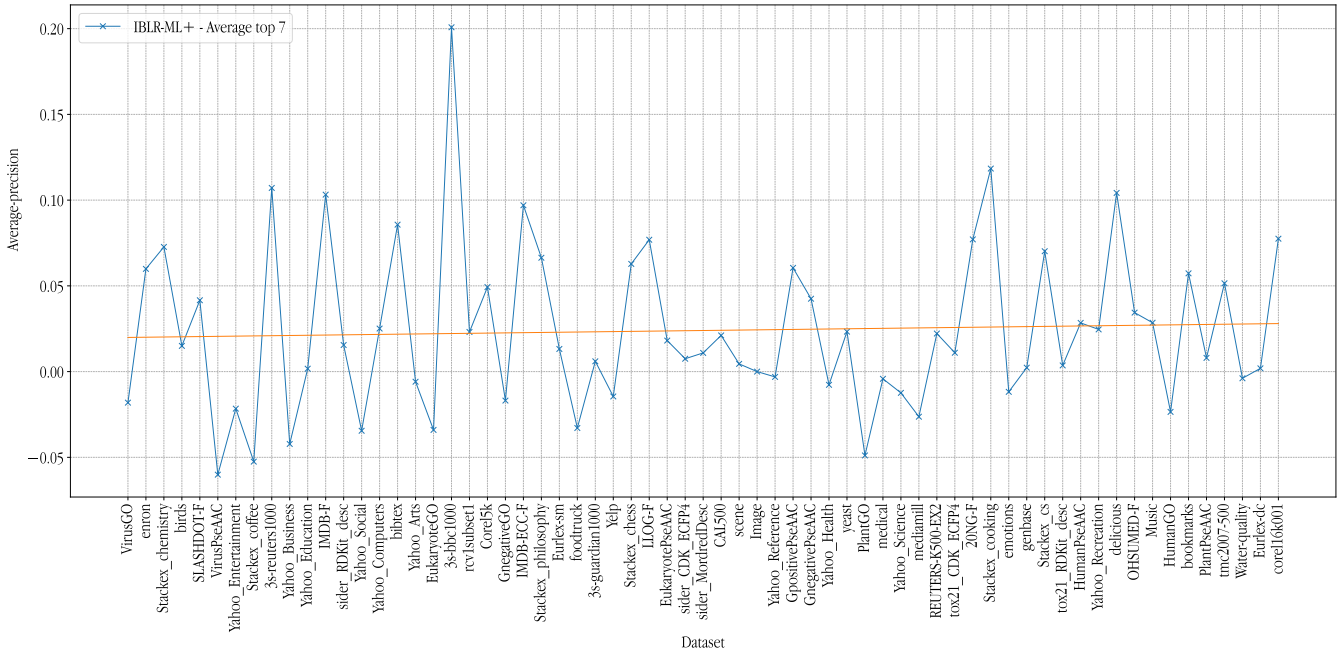


Figure 151: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

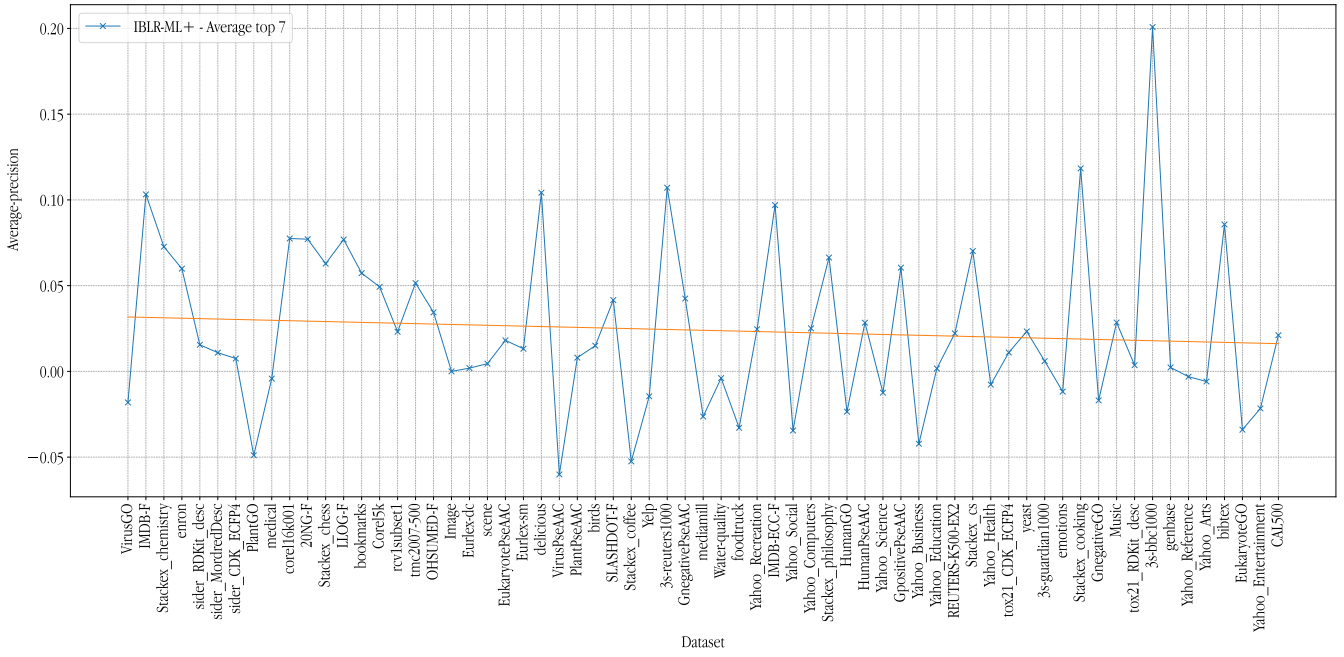


Figure 152: Difference in average precision performance between IBLR-ML+ and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

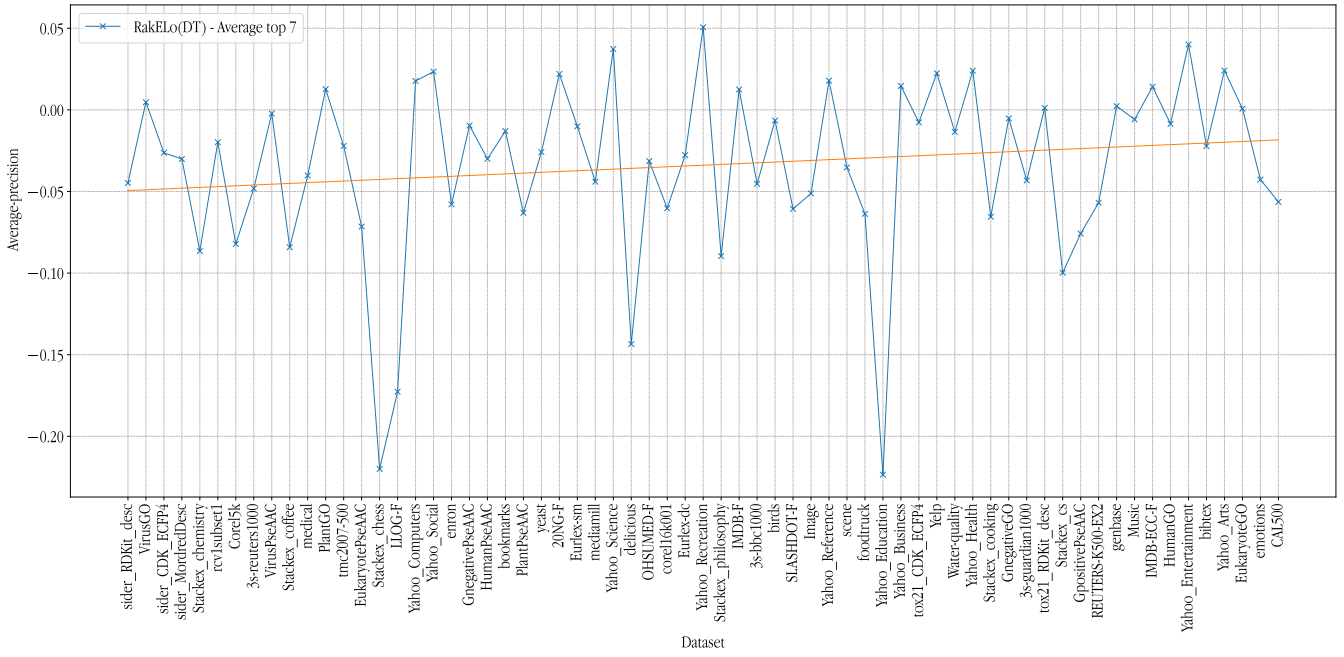


Figure 153: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

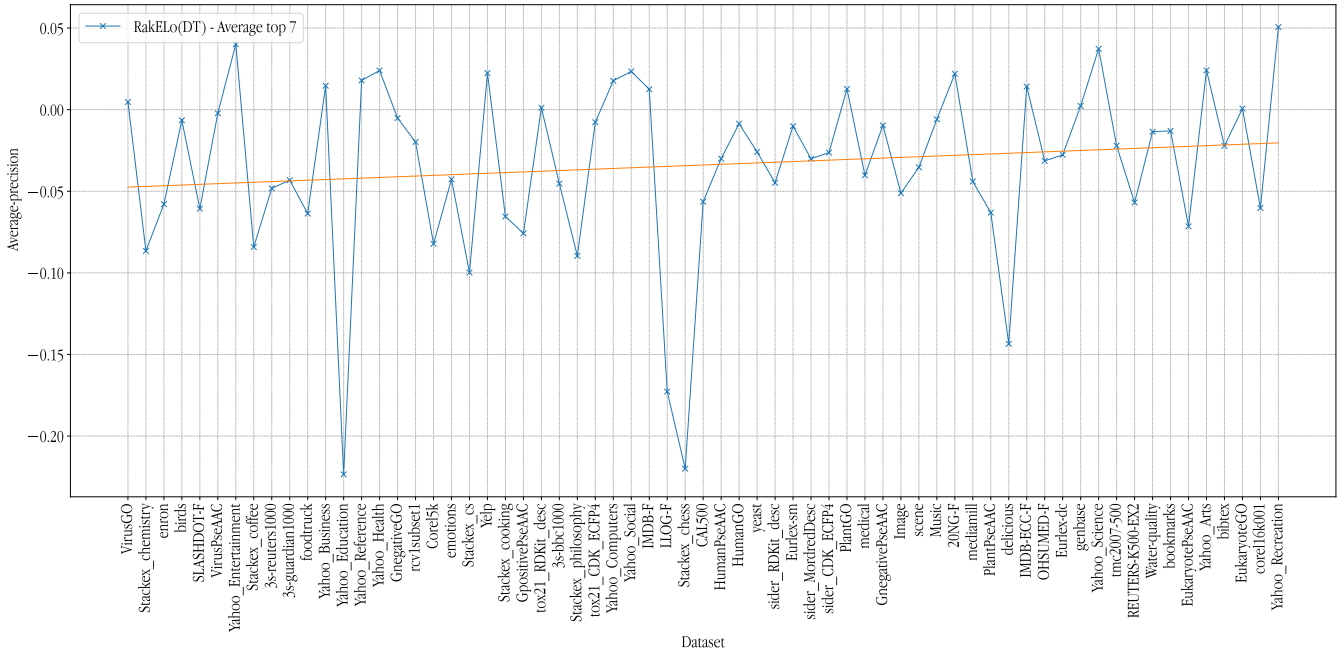


Figure 154: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

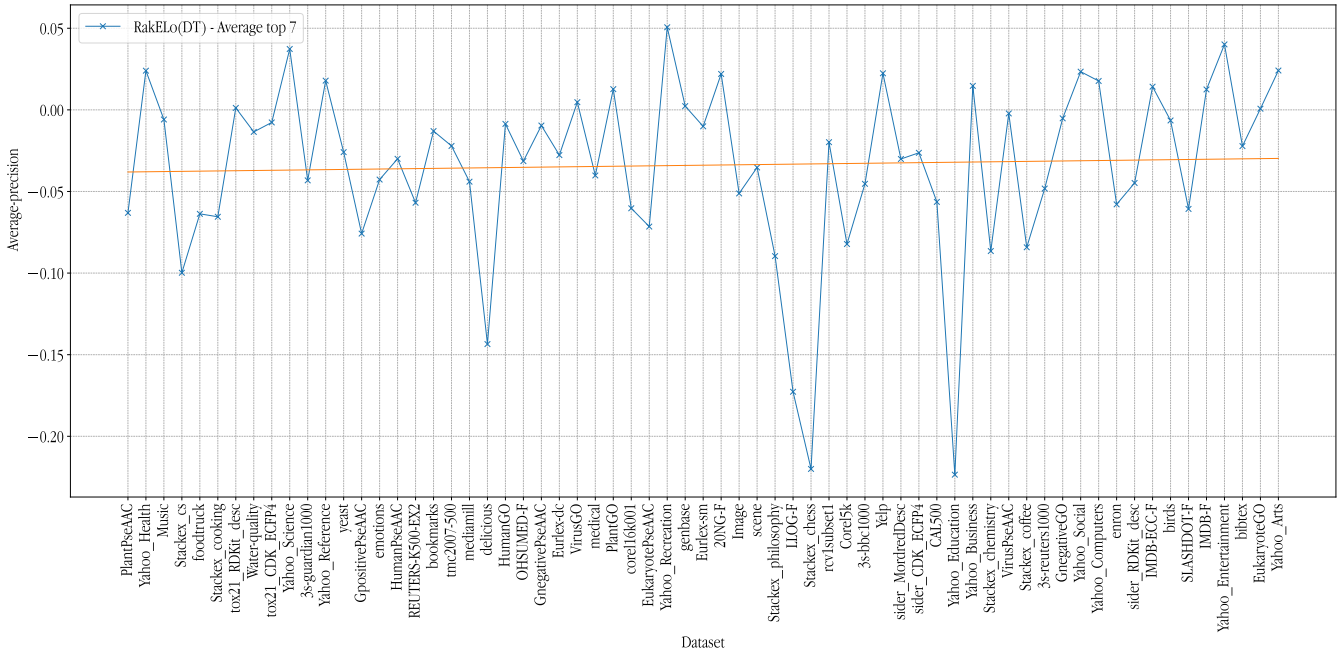


Figure 155: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

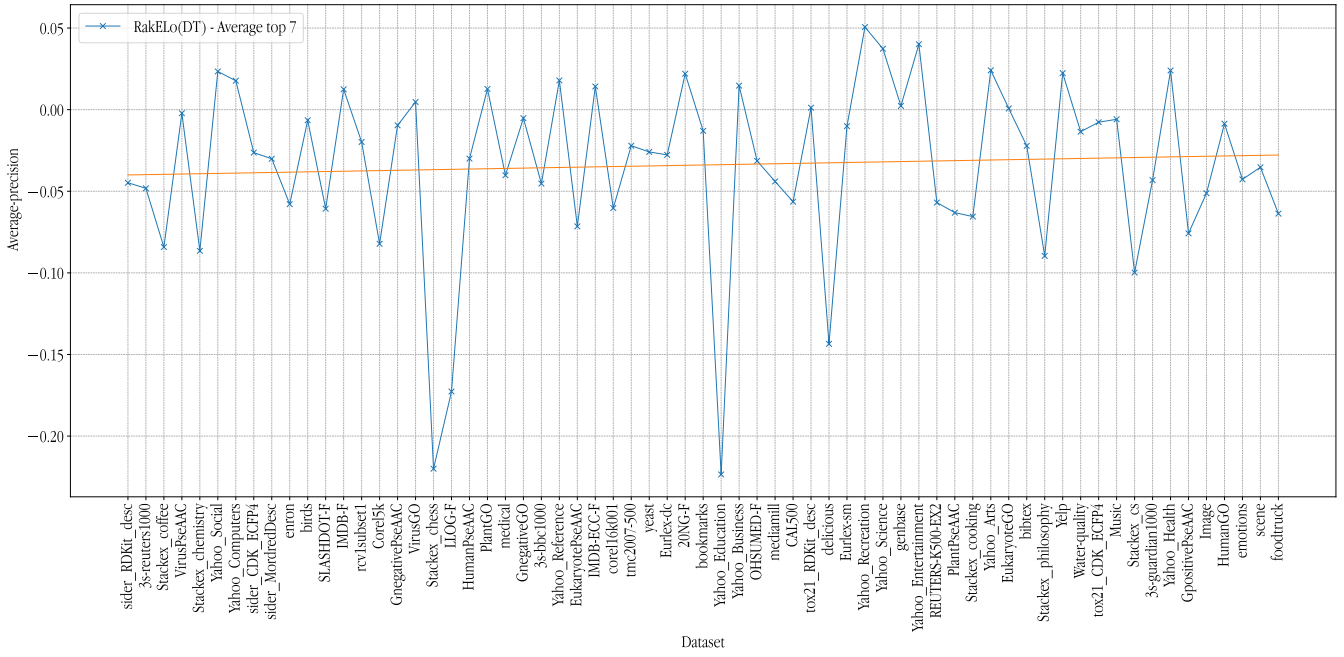


Figure 156: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

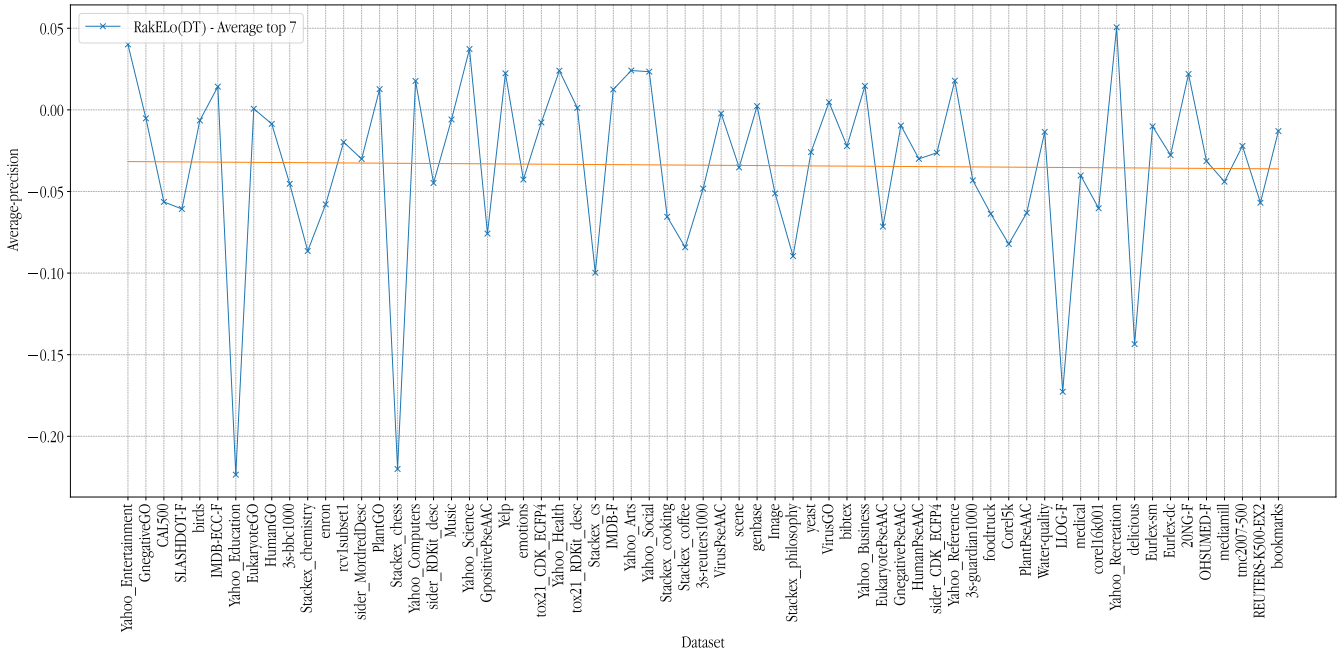


Figure 157: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

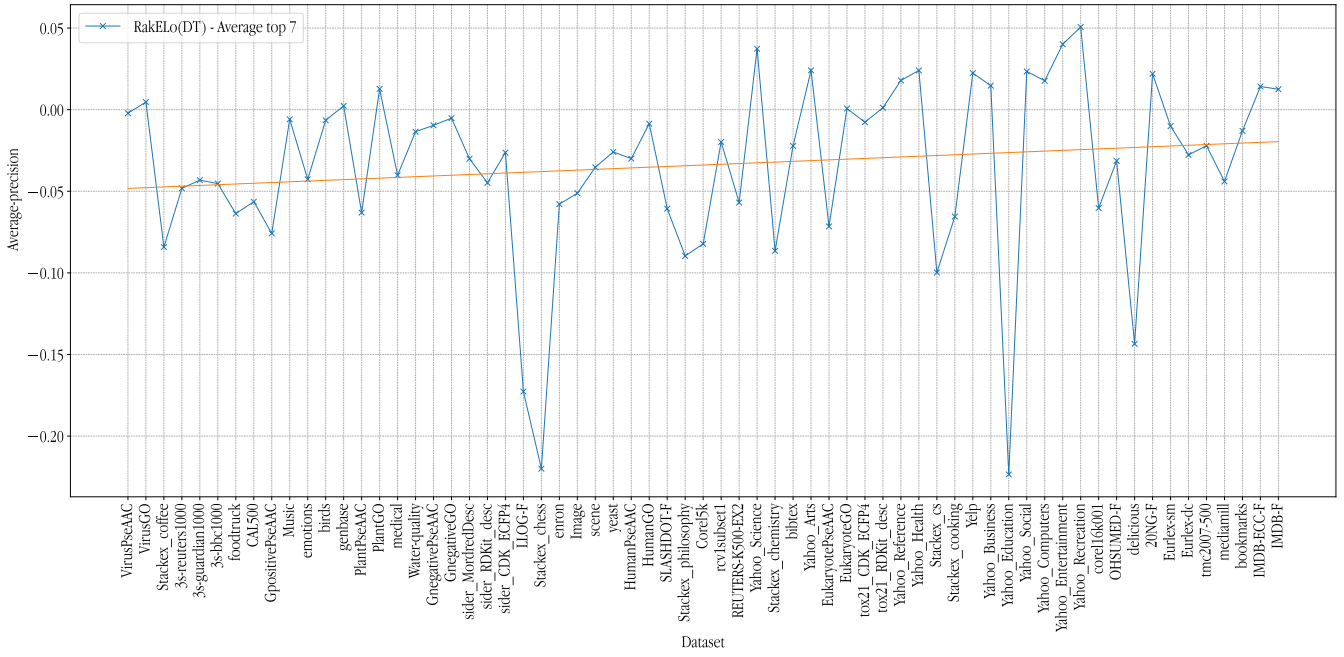


Figure 158: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

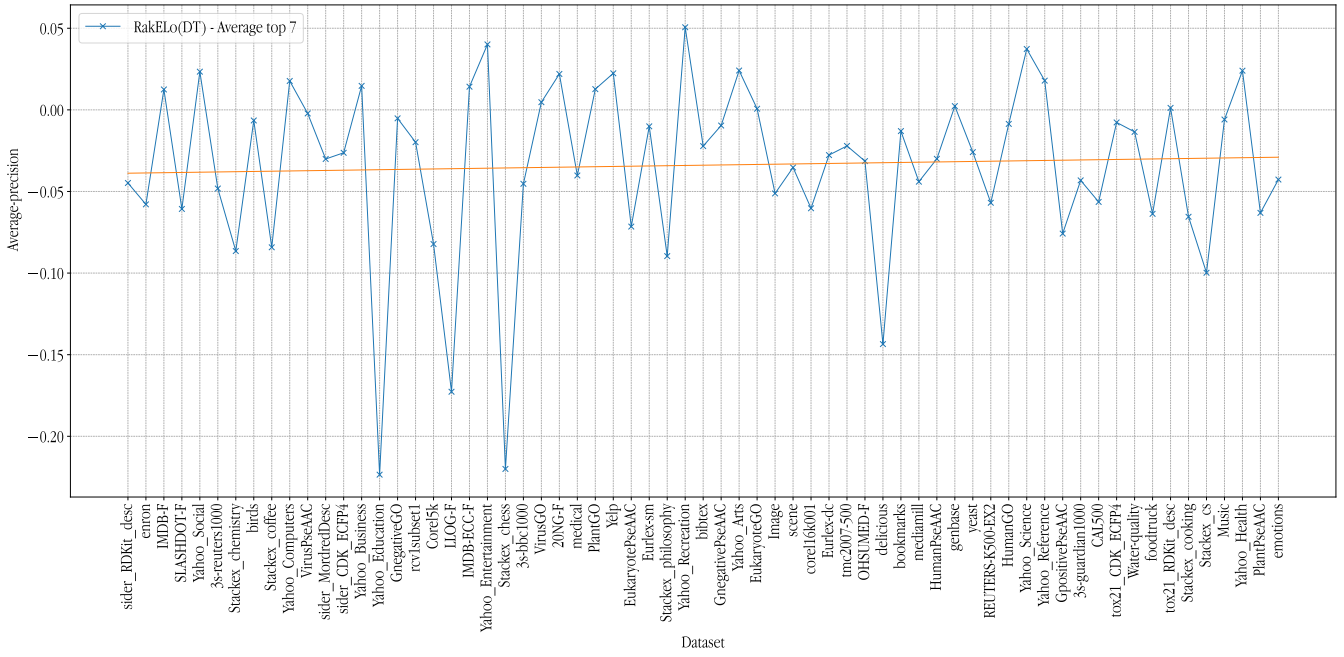


Figure 159: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

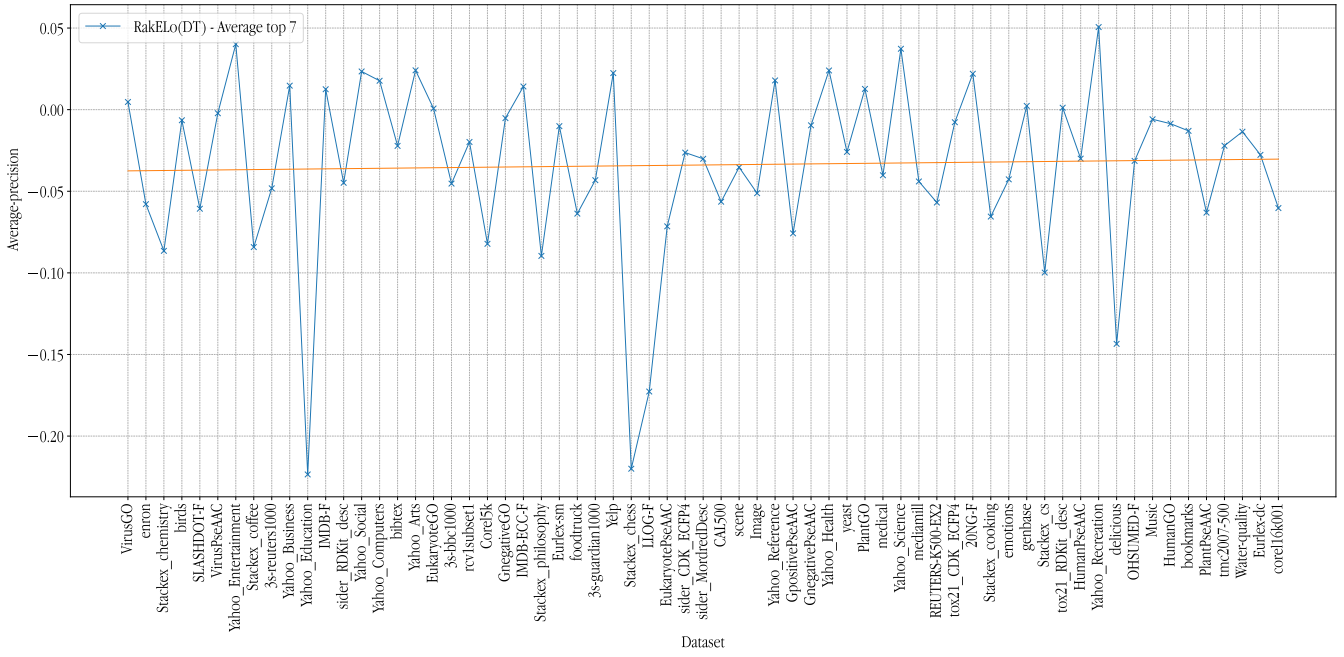


Figure 160: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

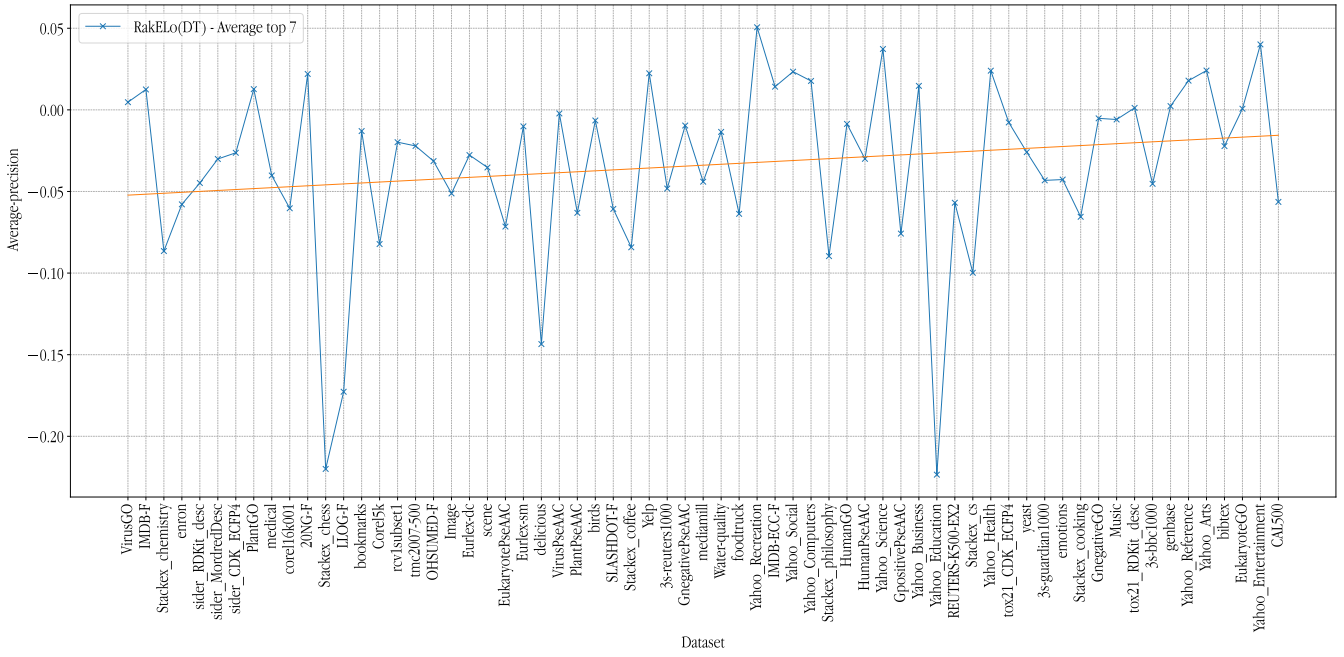


Figure 161: Difference in average precision performance between RAkELo(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

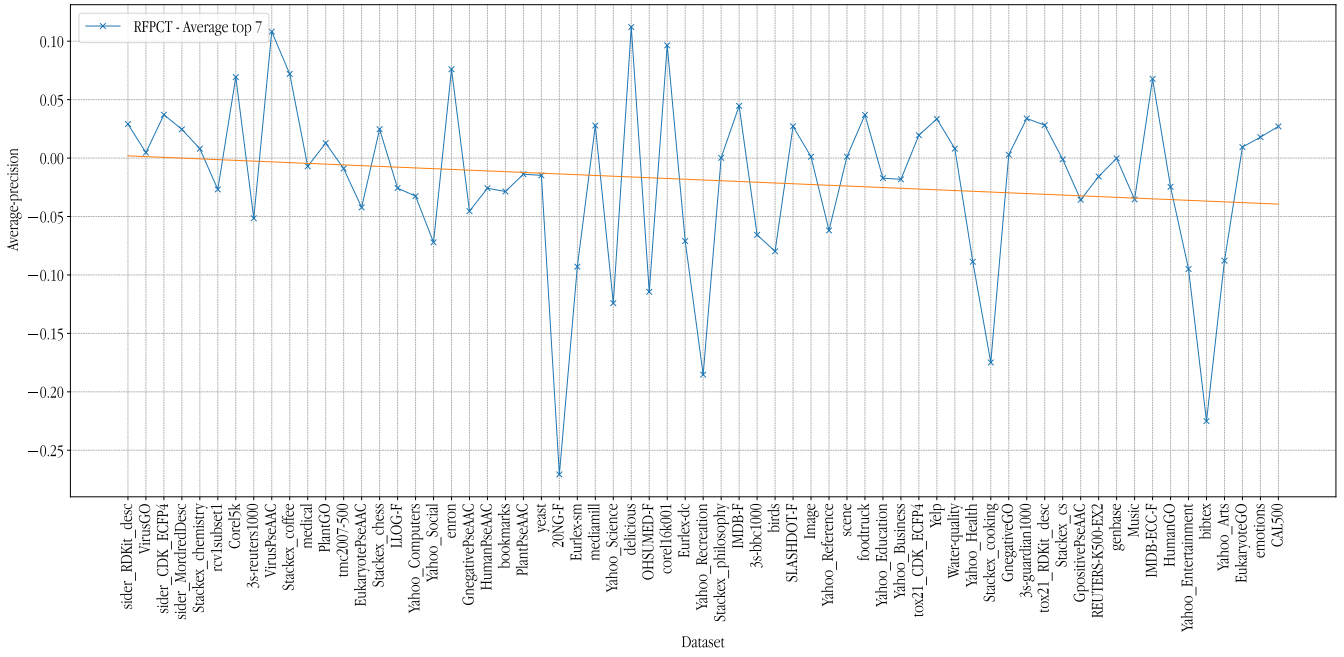


Figure 162: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

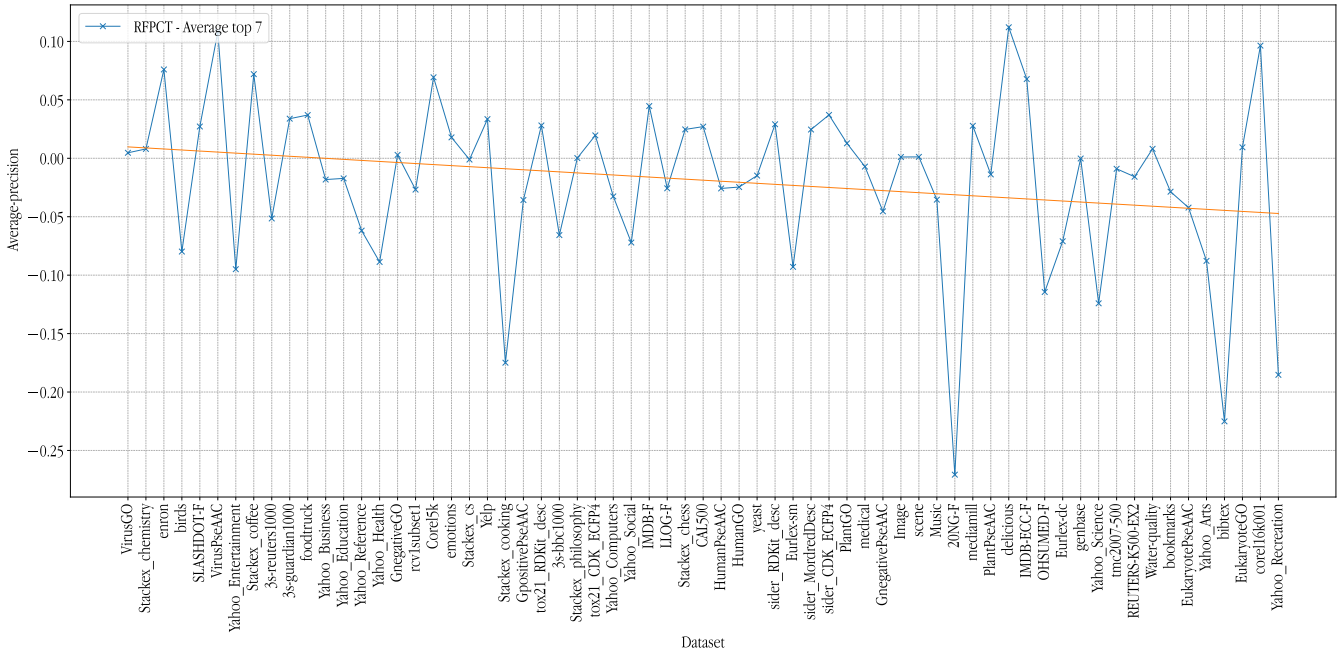


Figure 163: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

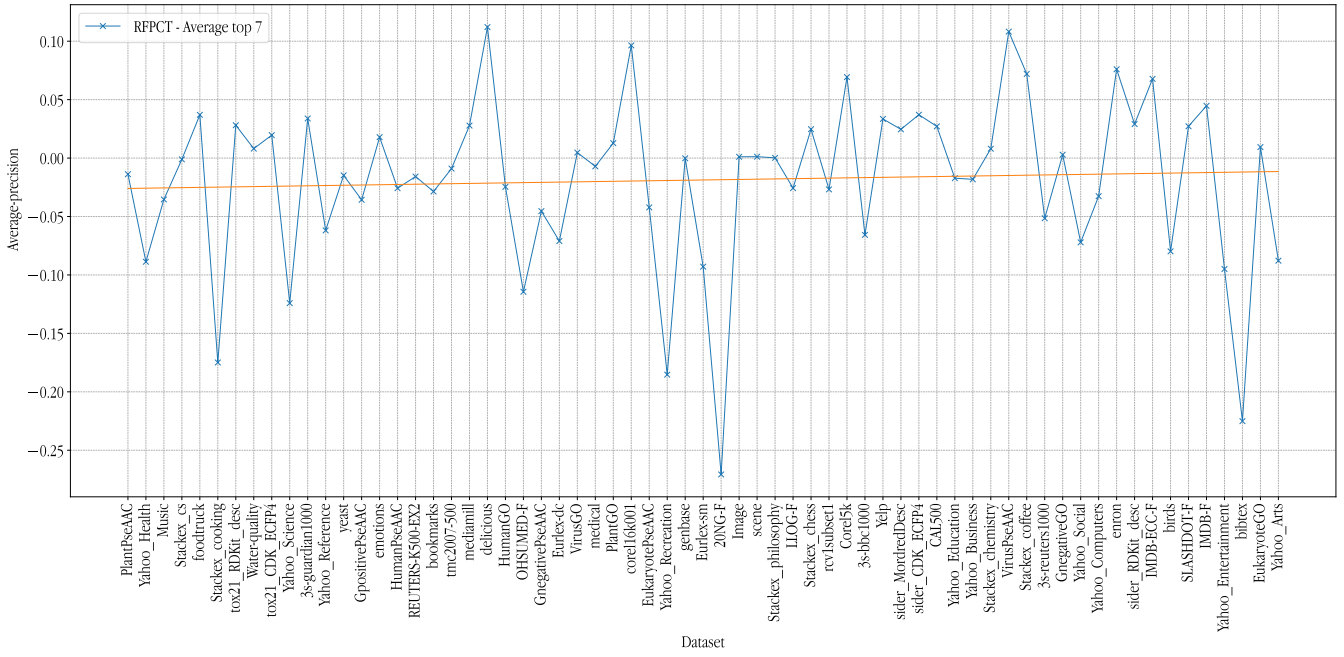


Figure 164: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

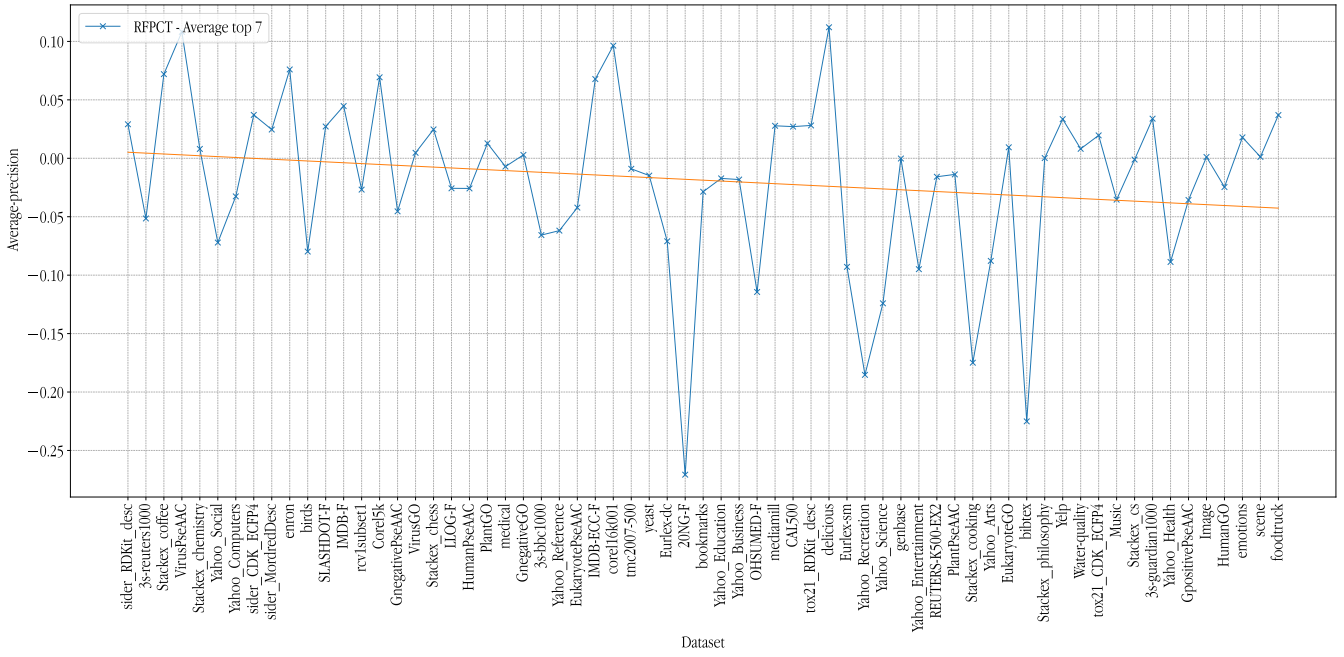


Figure 165: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

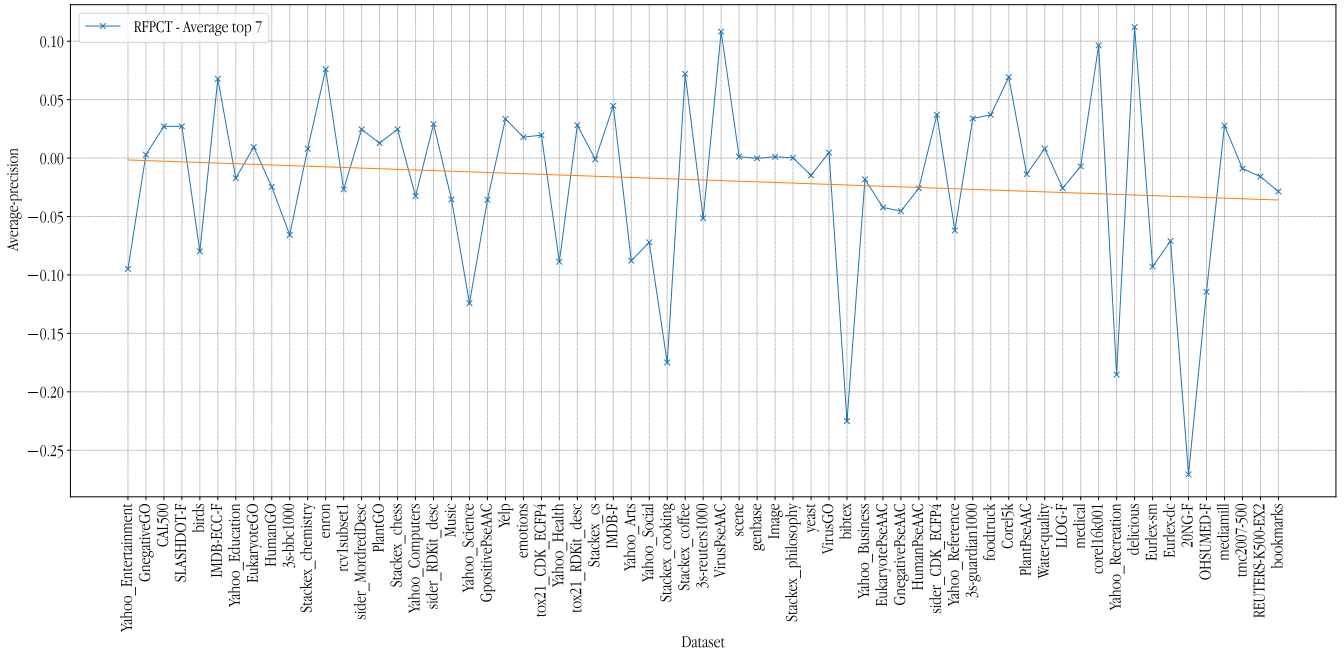


Figure 166: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

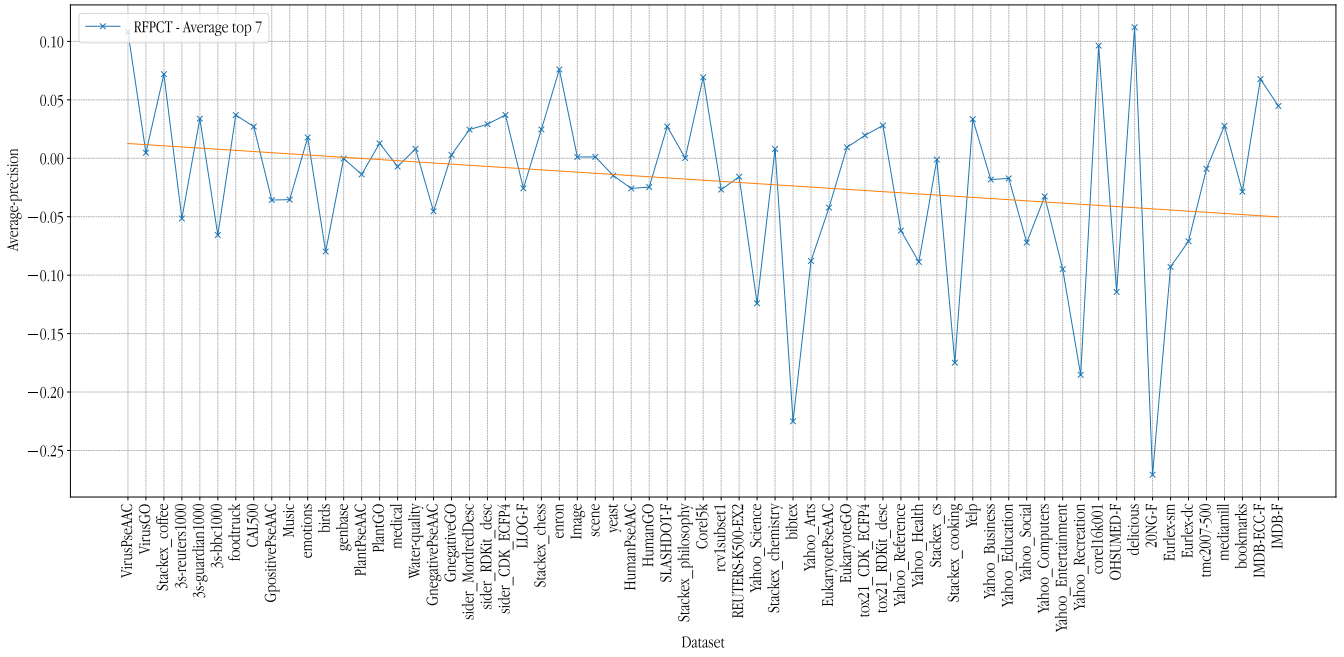


Figure 167: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

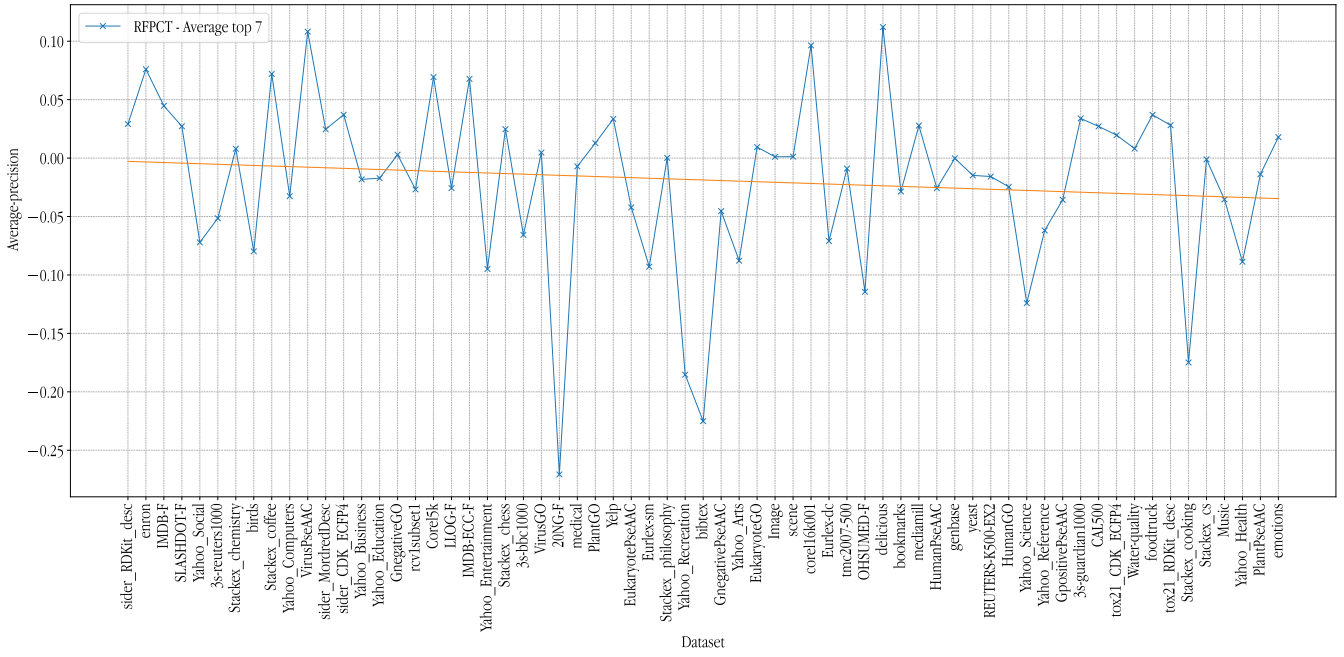


Figure 168: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

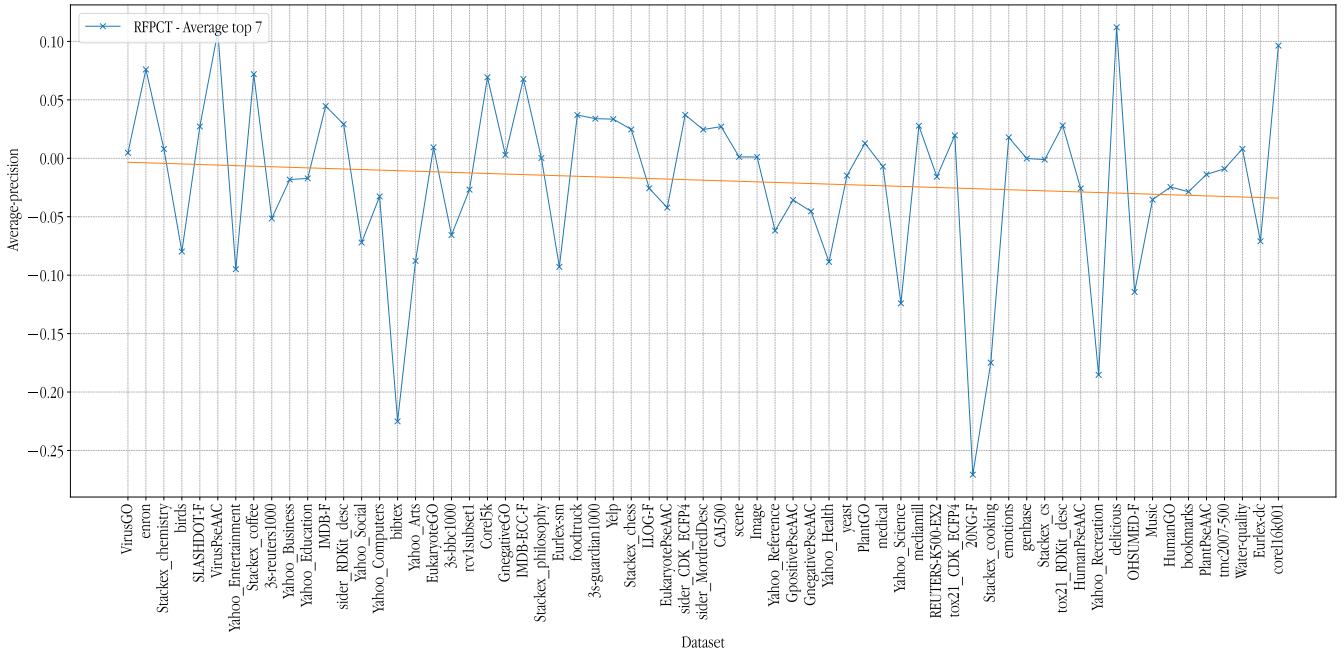


Figure 169: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

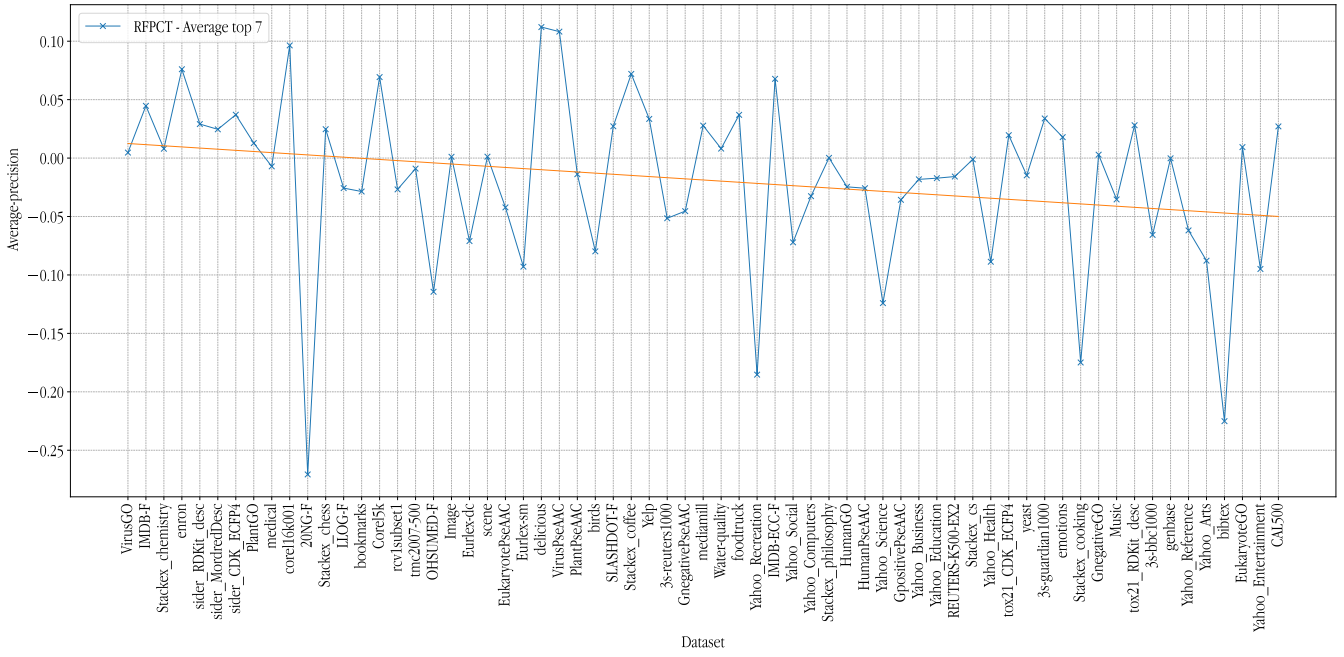


Figure 170: Difference in average precision performance between RFPCT and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

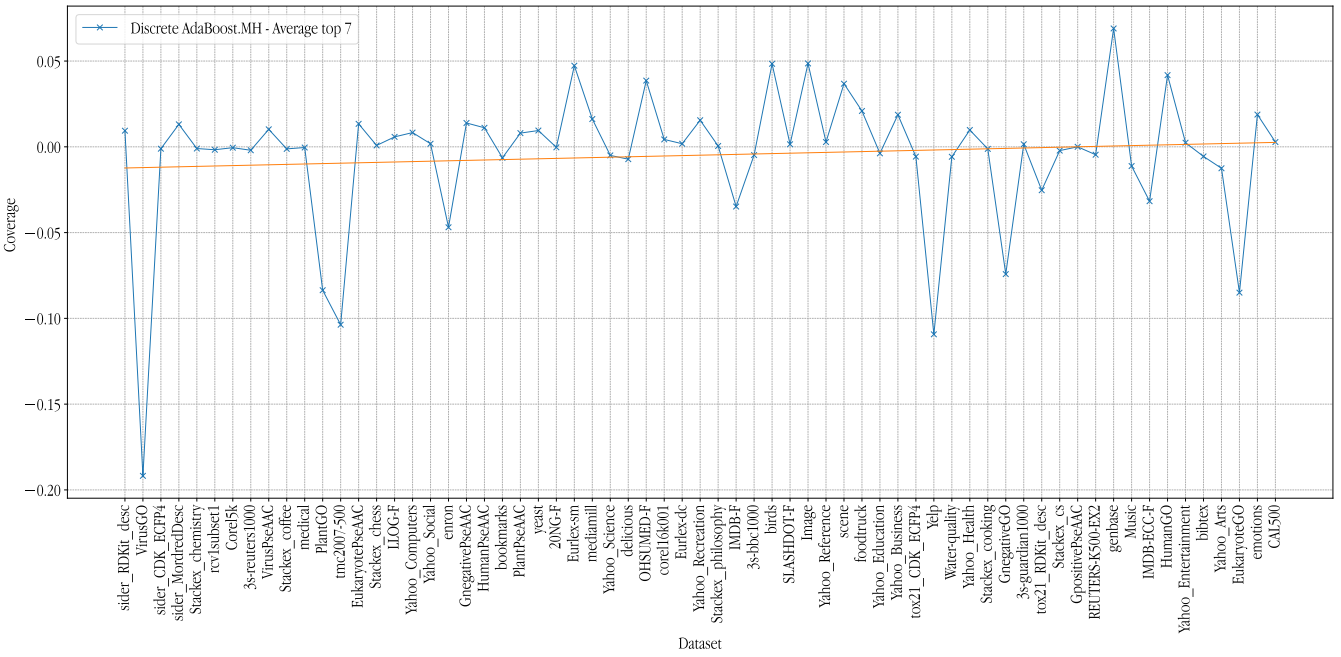


Figure 171: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

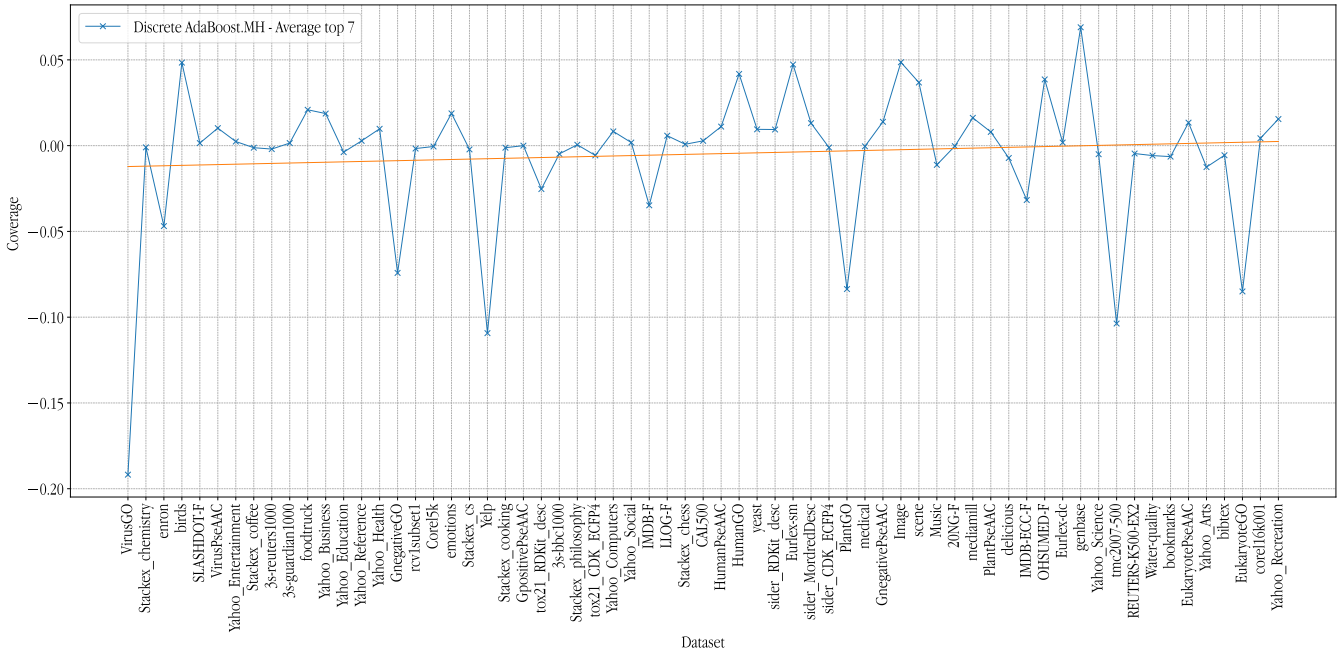


Figure 172: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

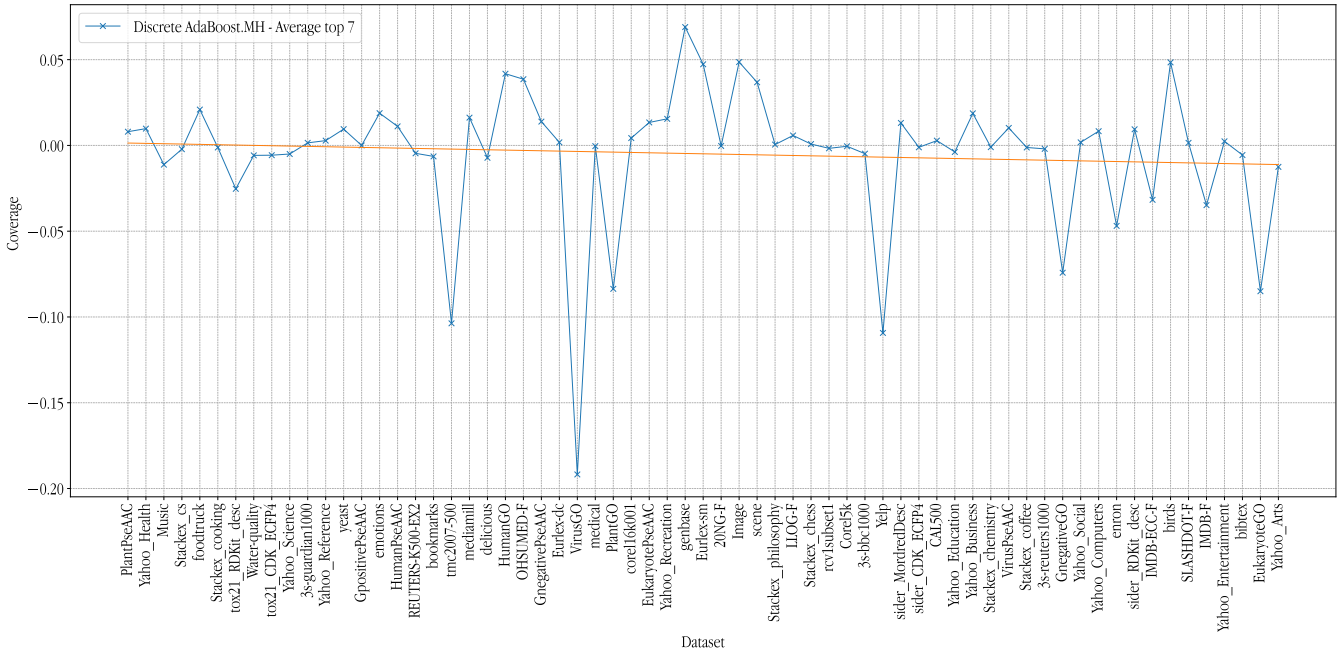


Figure 173: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

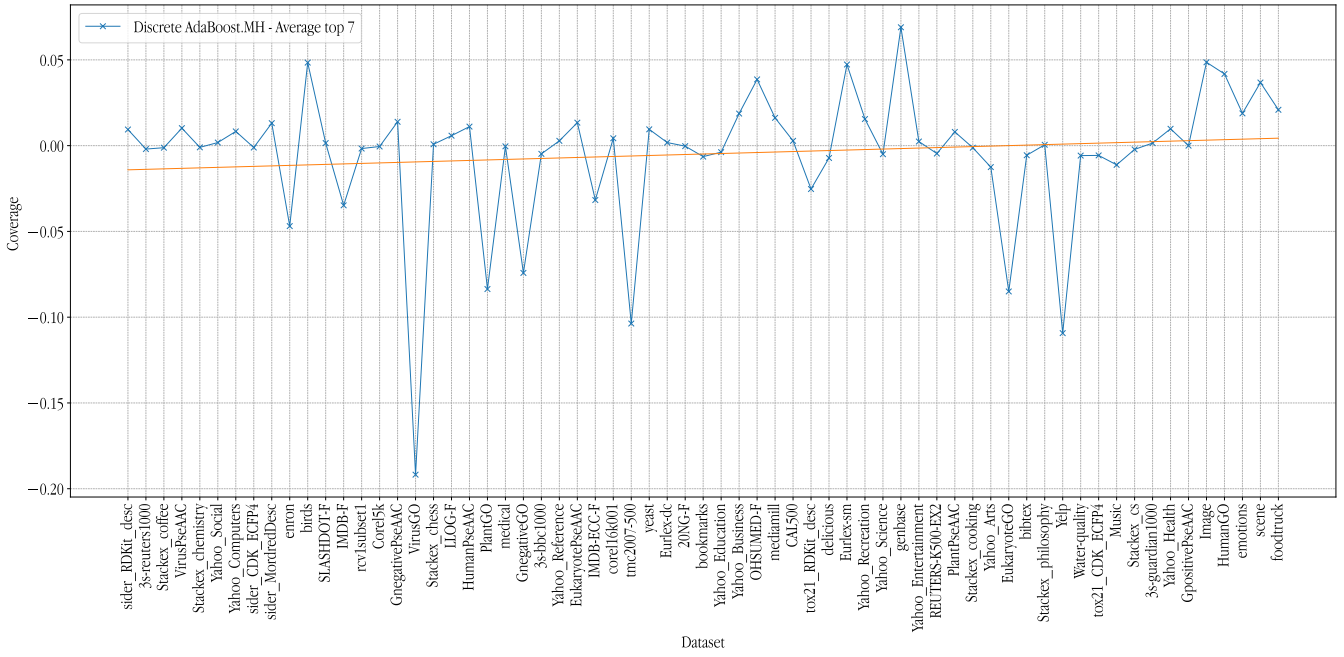


Figure 174: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

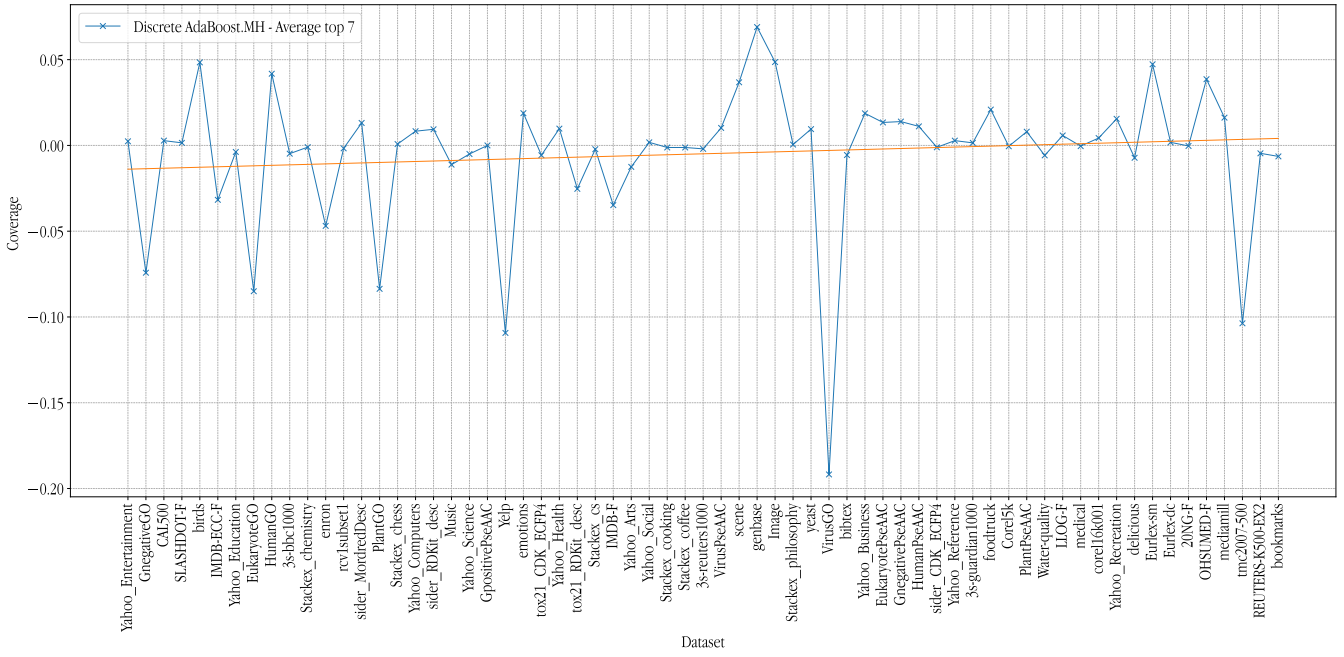


Figure 175: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

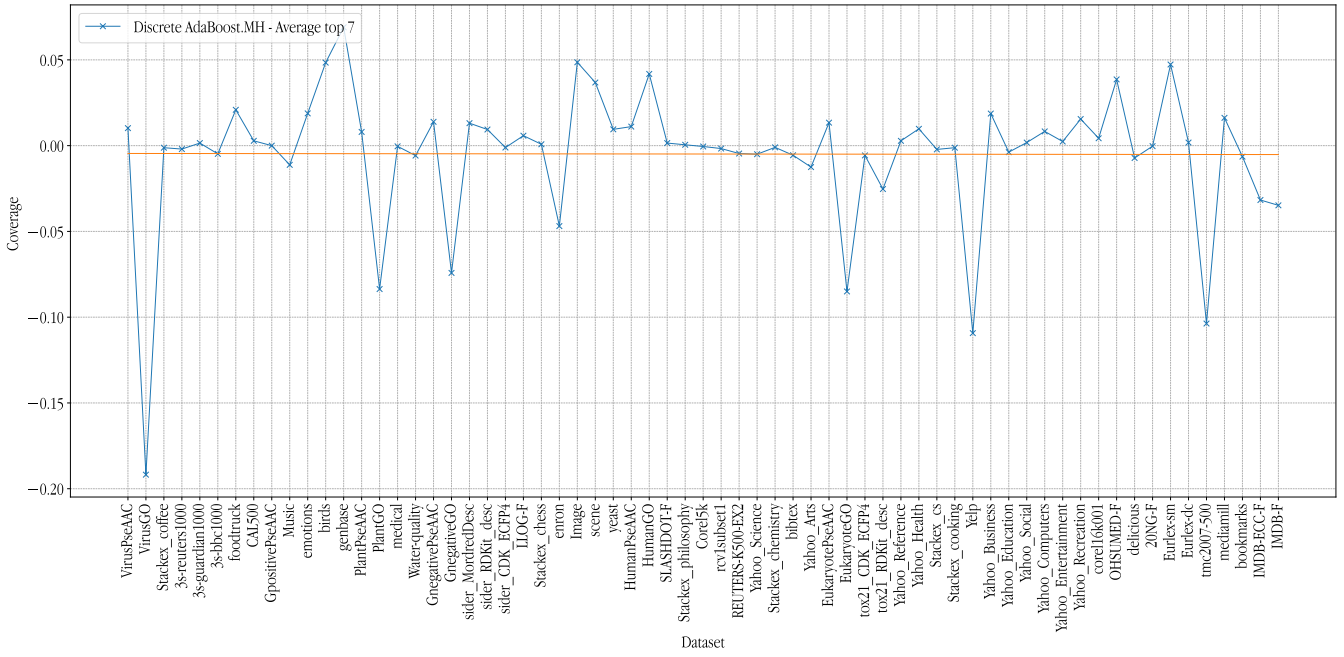


Figure 176: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

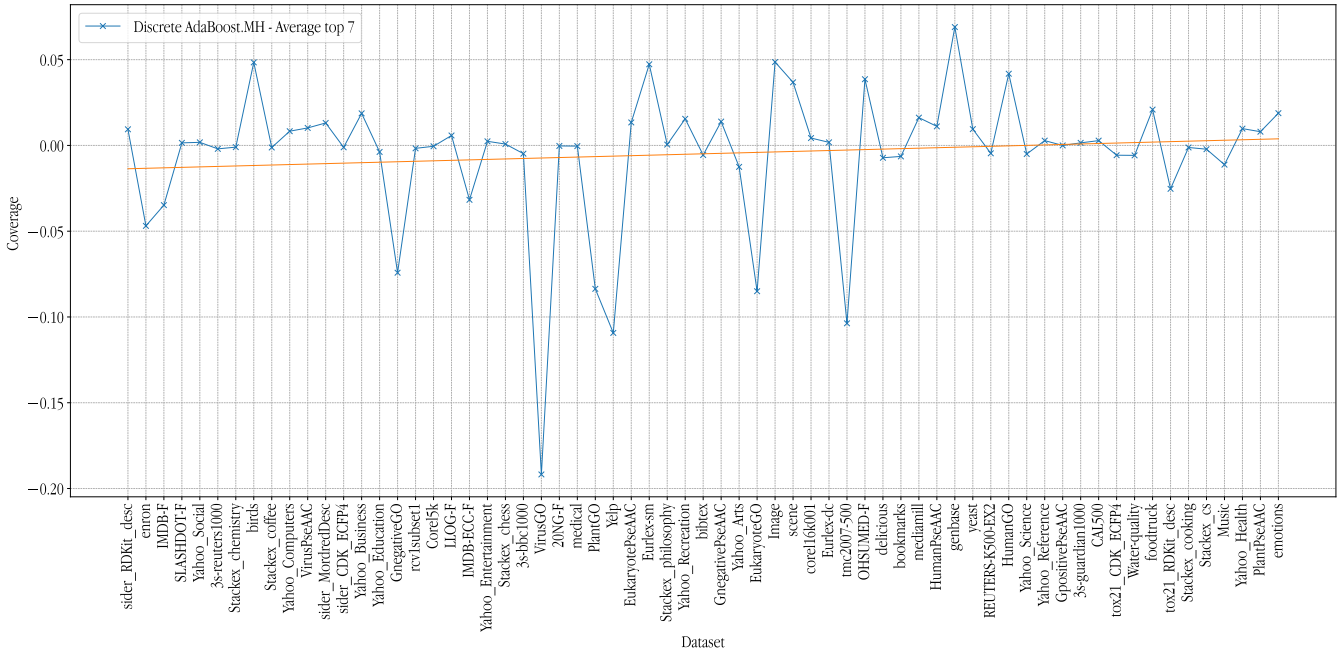


Figure 177: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

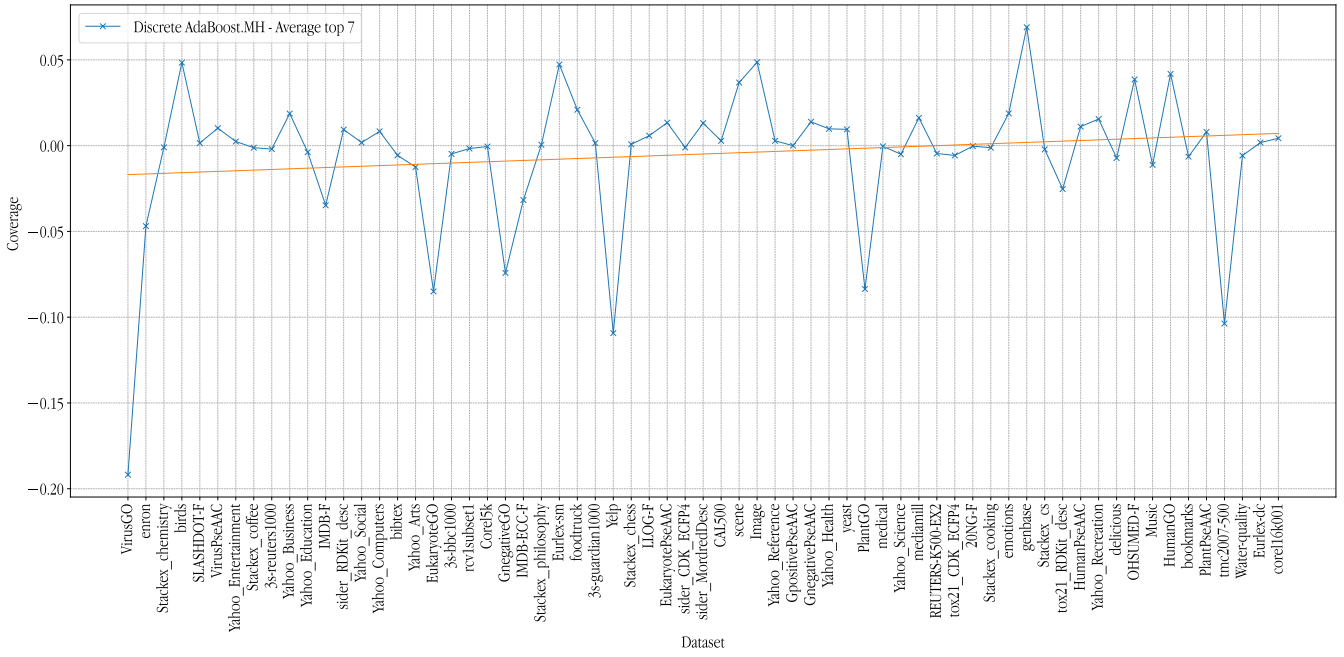


Figure 178: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

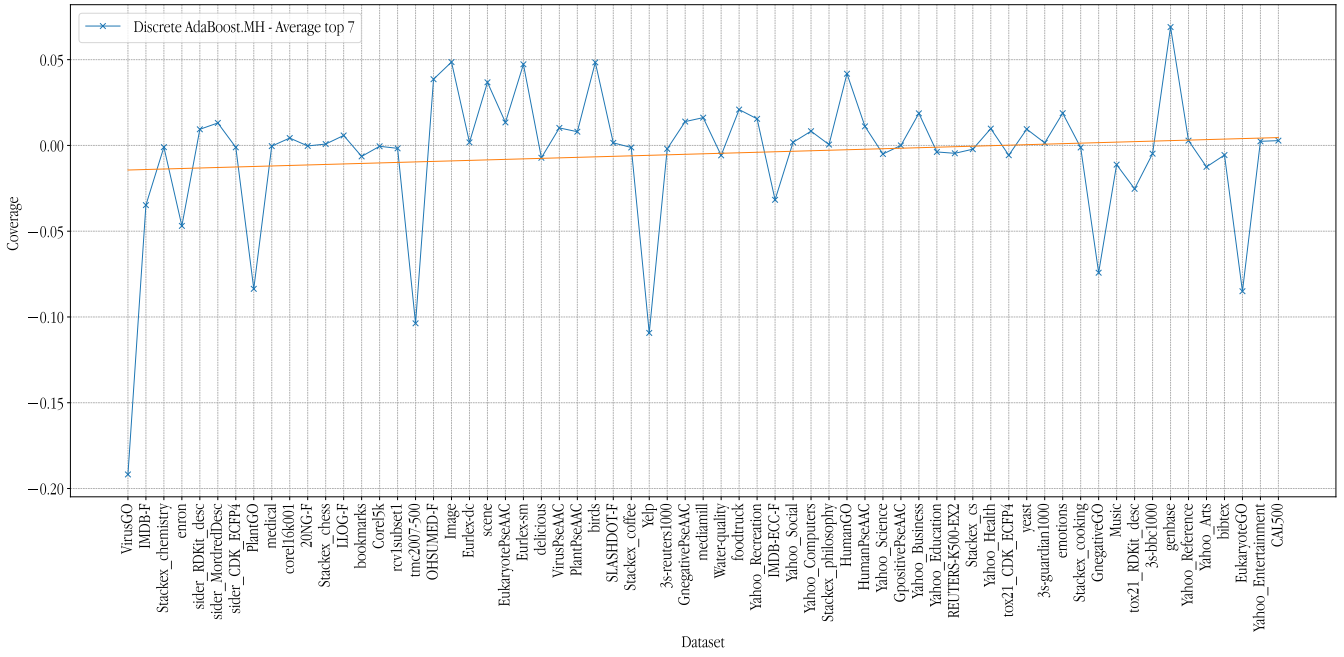


Figure 179: Difference in coverage performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

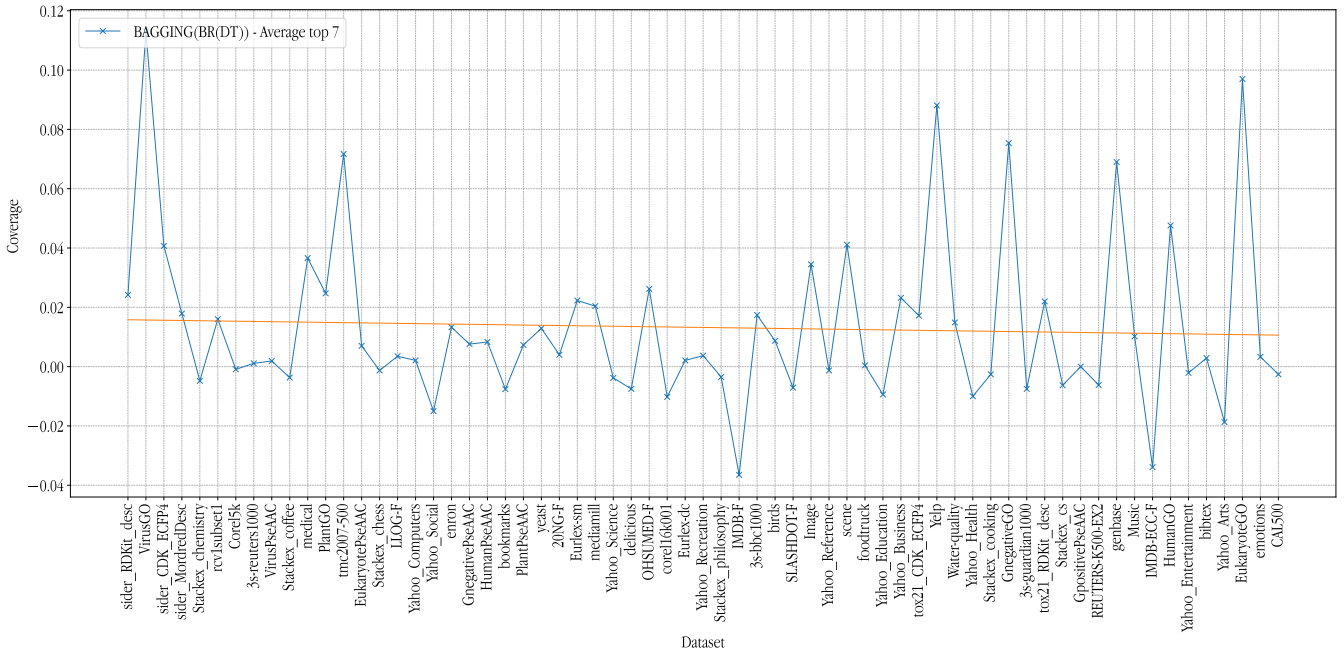


Figure 180: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

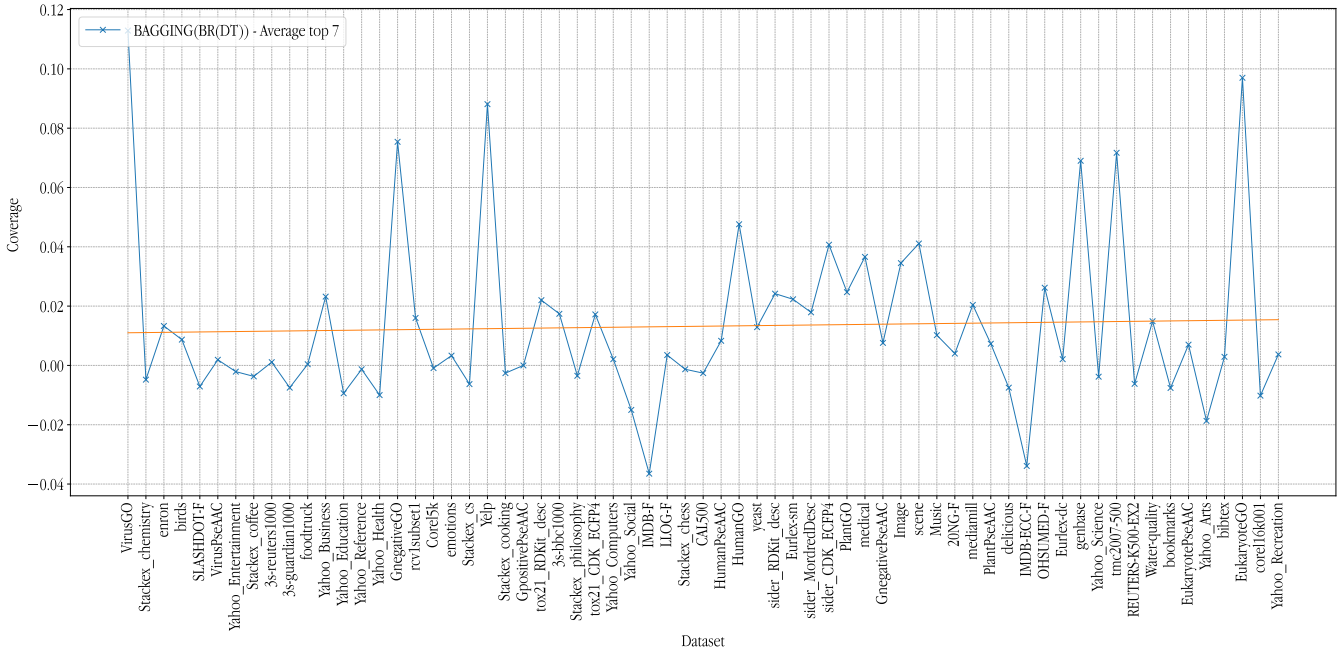


Figure 181: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

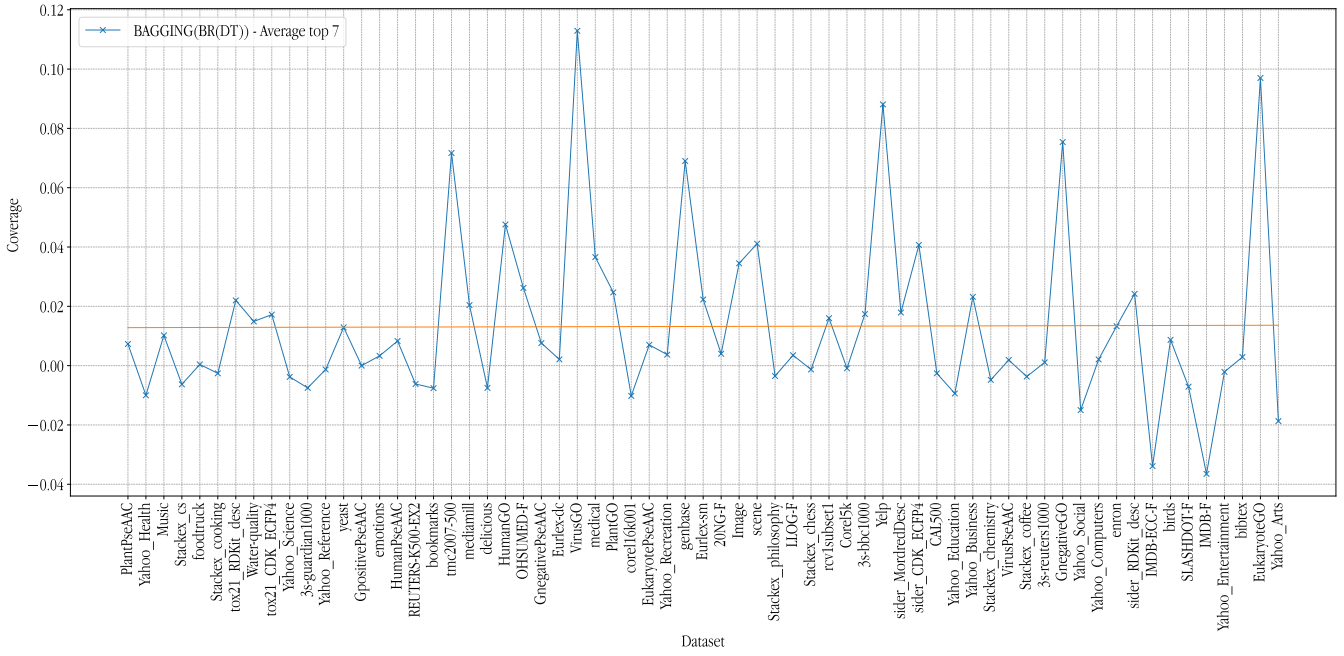


Figure 182: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

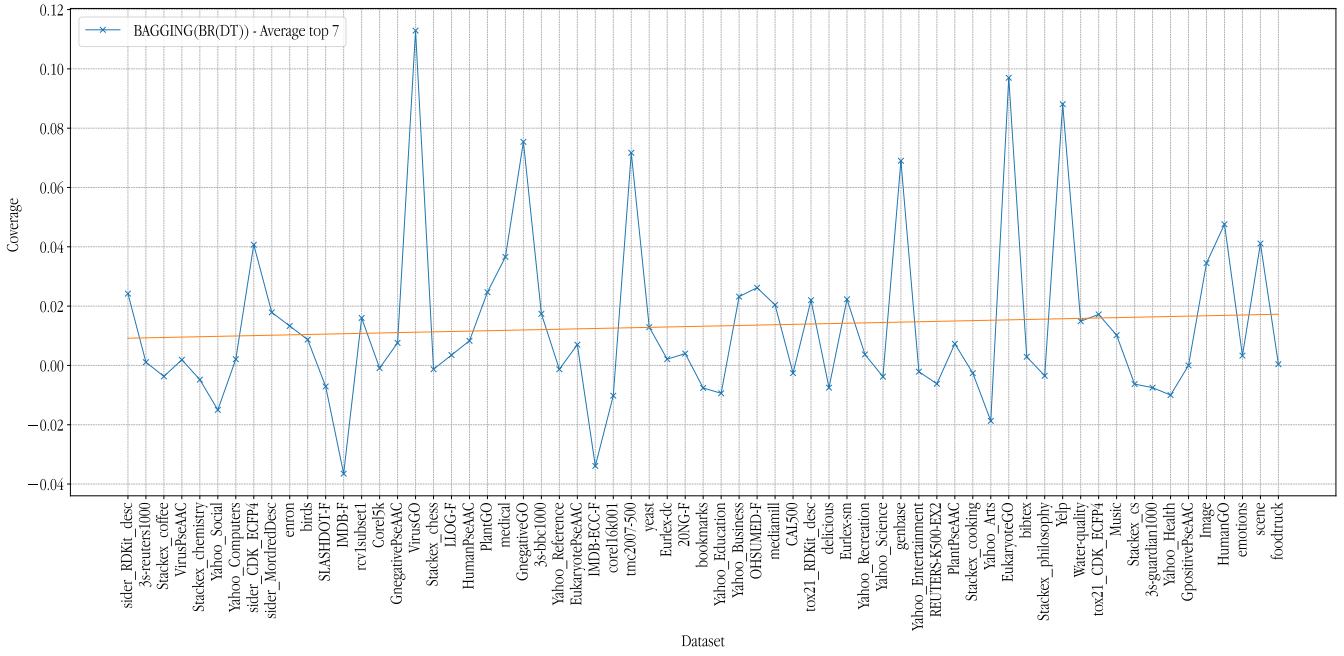


Figure 183: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

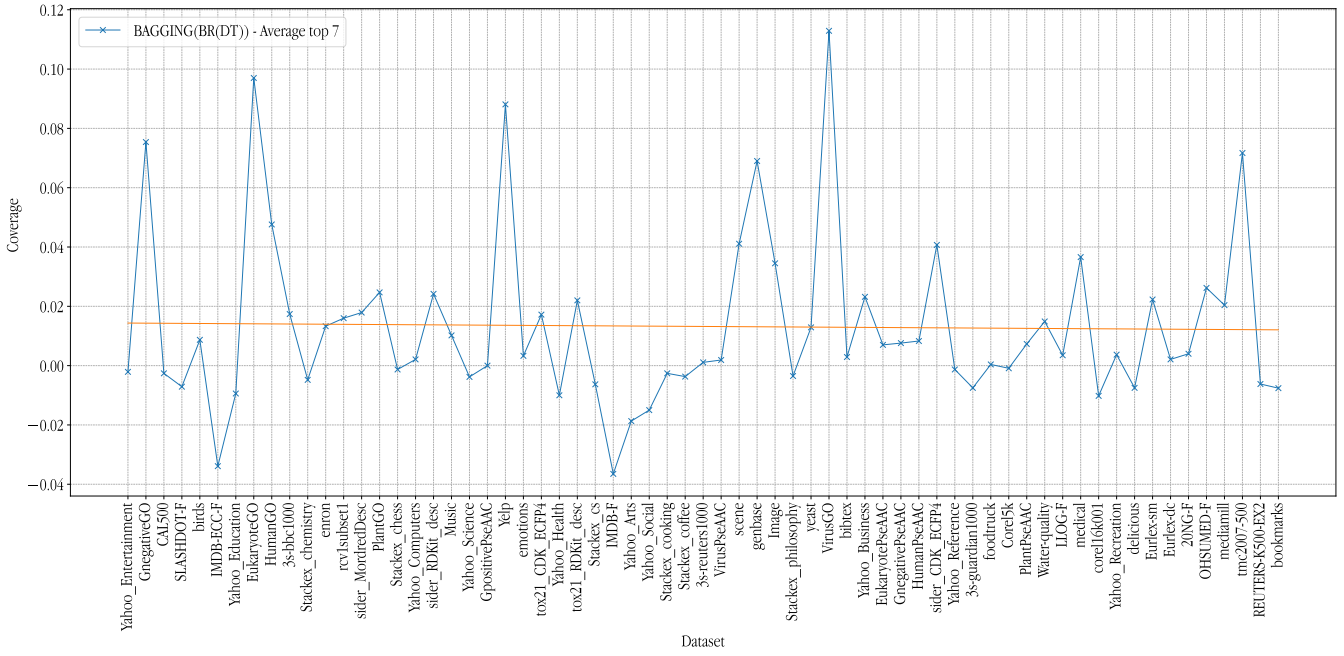


Figure 184: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

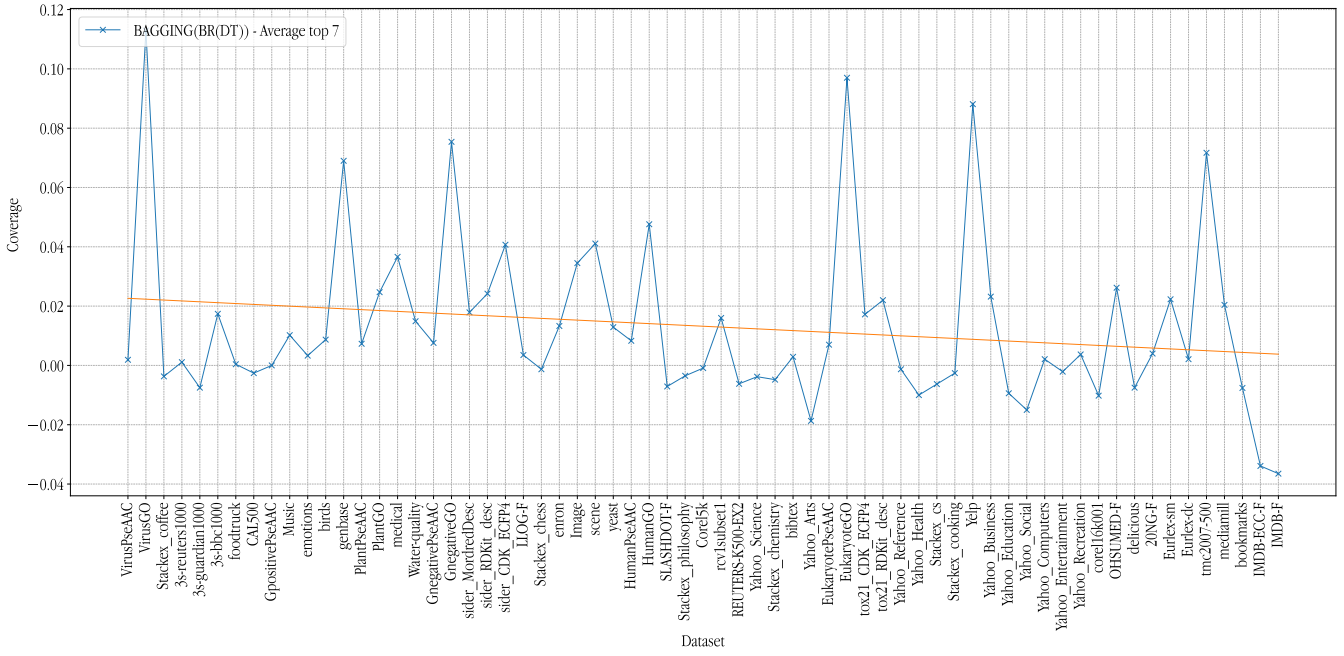


Figure 185: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

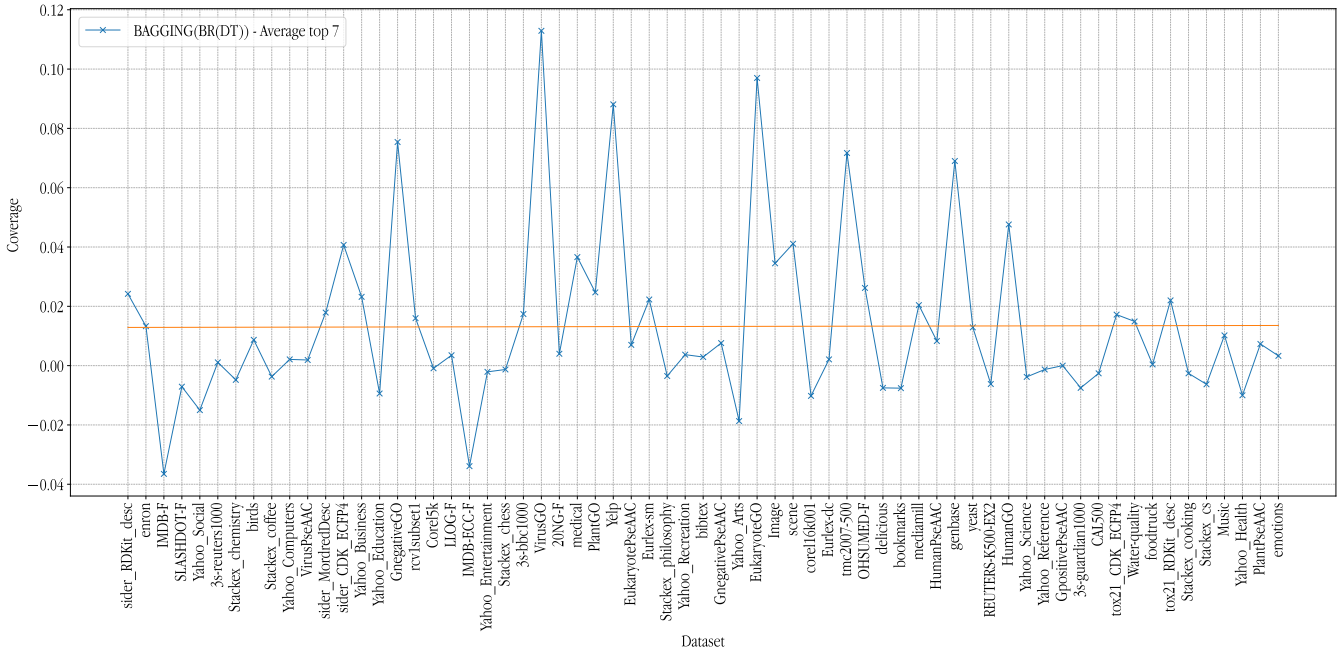


Figure 186: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

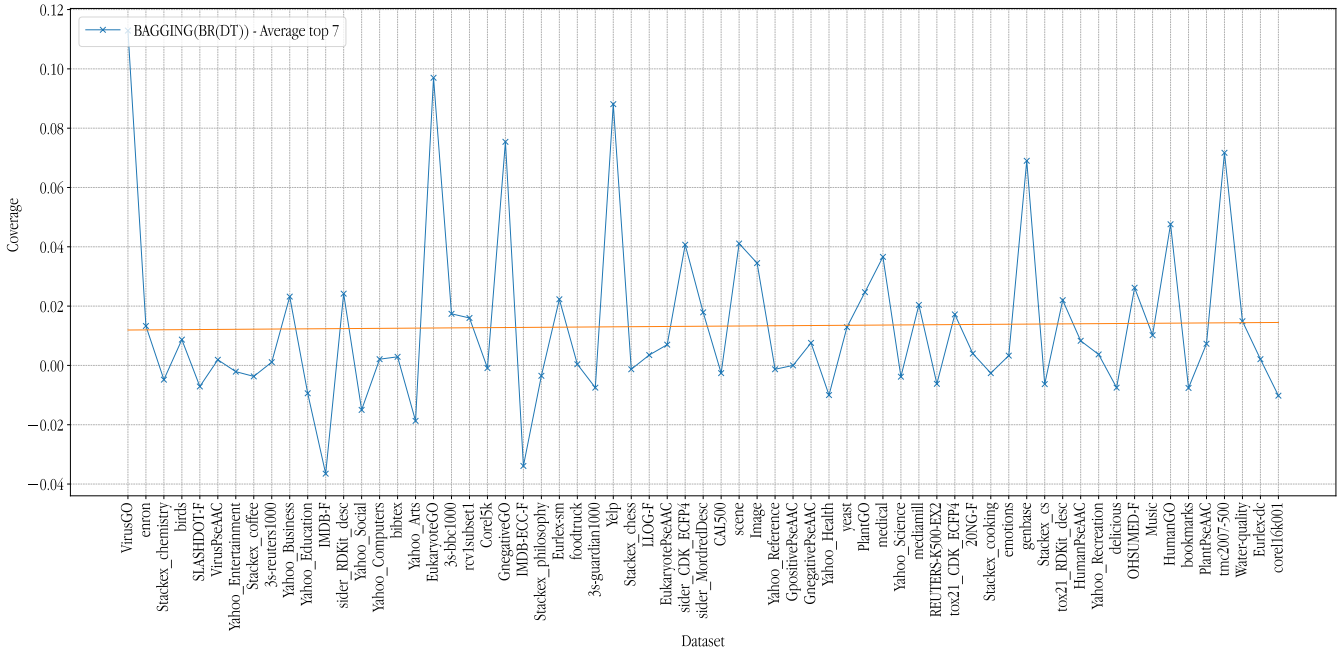


Figure 187: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

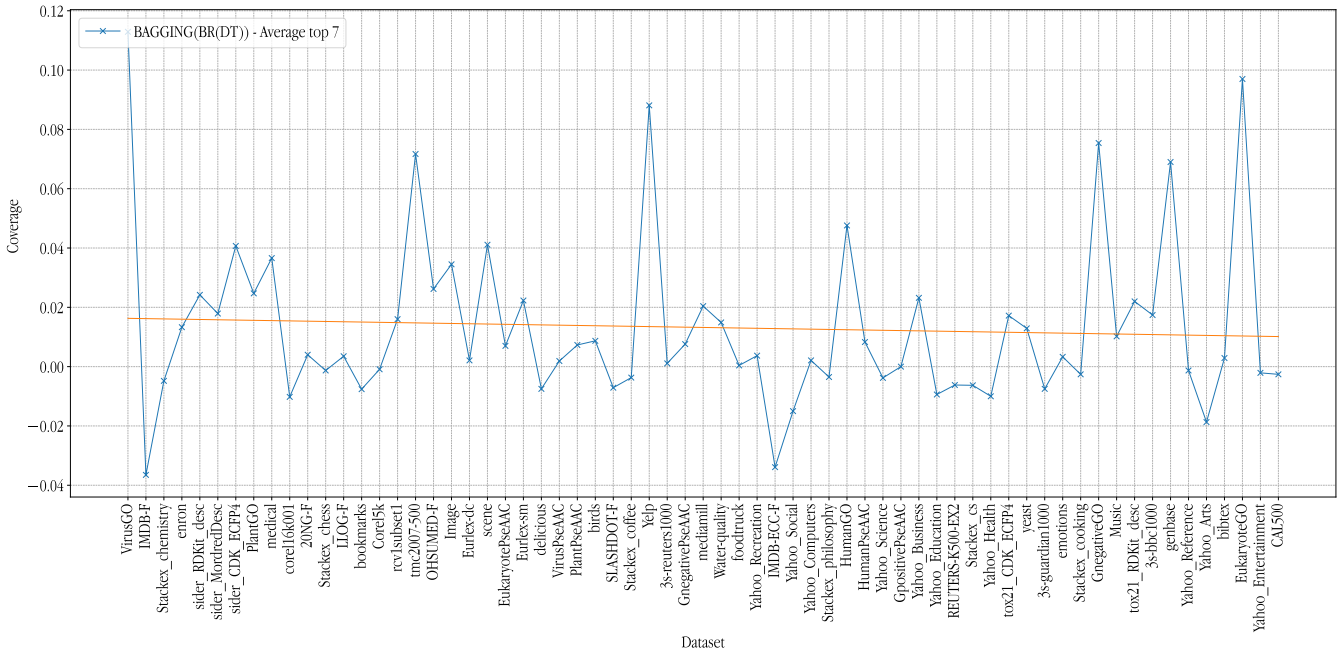


Figure 188: Difference in coverage performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

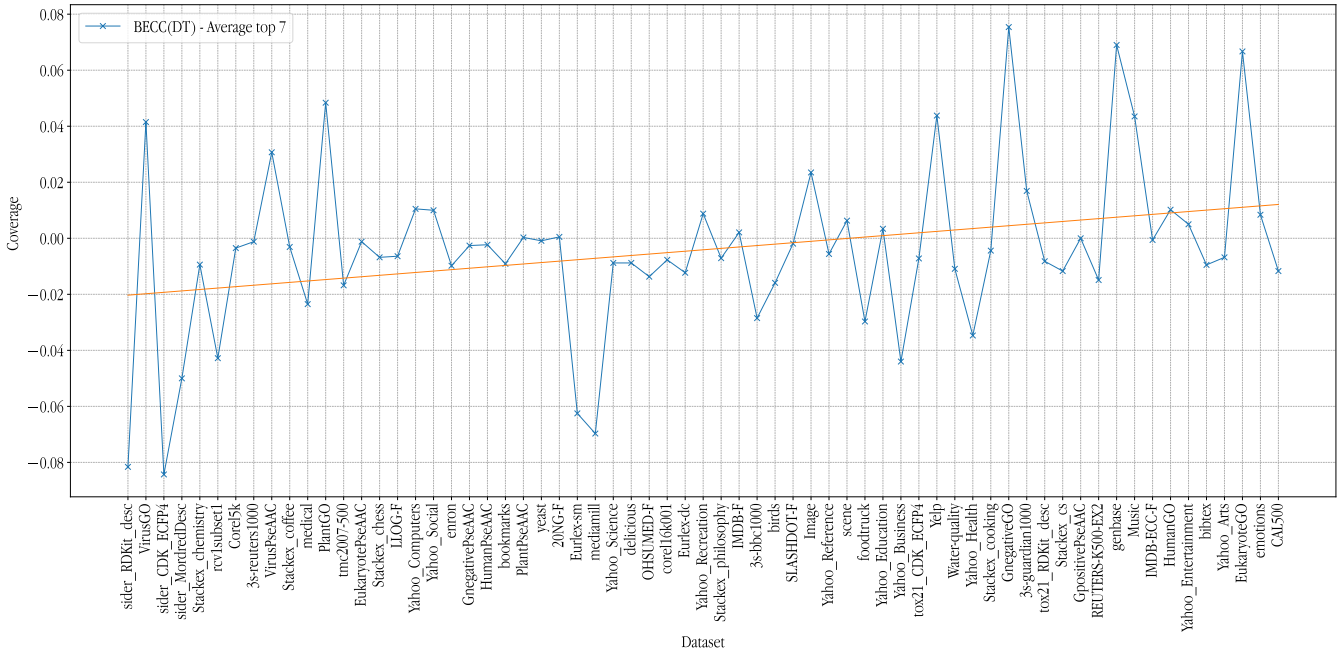


Figure 189: Difference in coverage performance between BECC and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

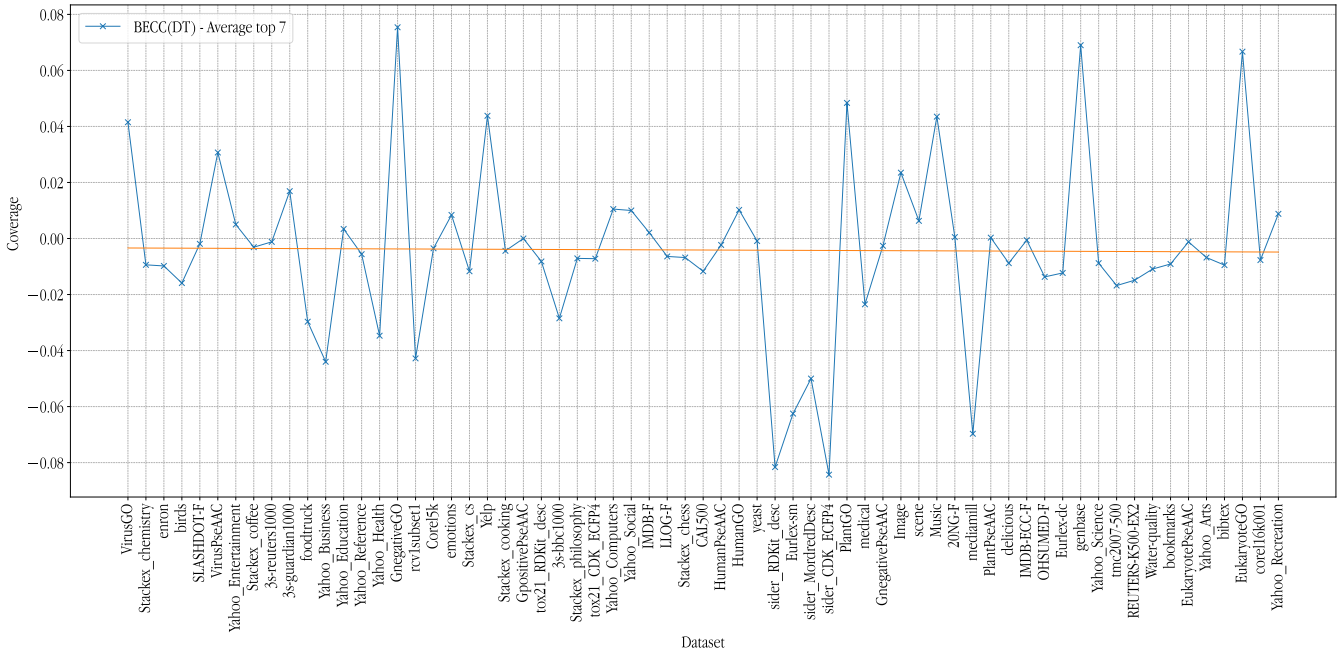


Figure 190: Difference in coverage performance between BECC and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

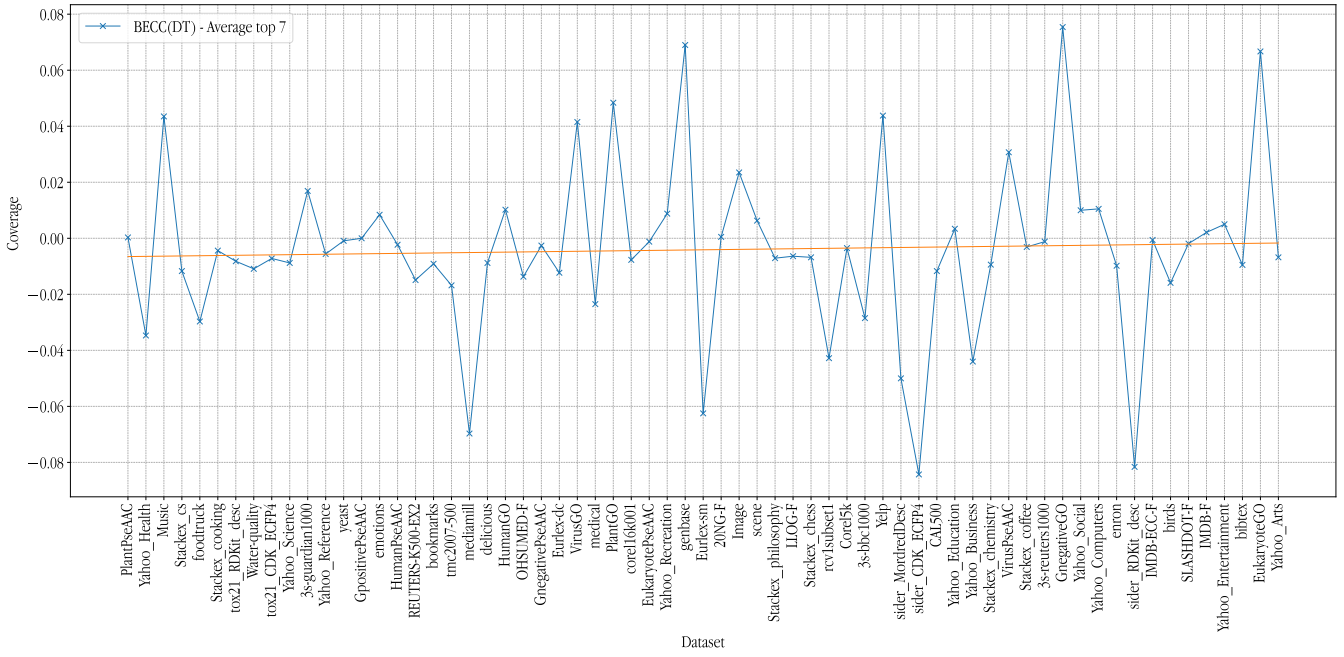


Figure 191: Difference in coverage performance between BECC and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

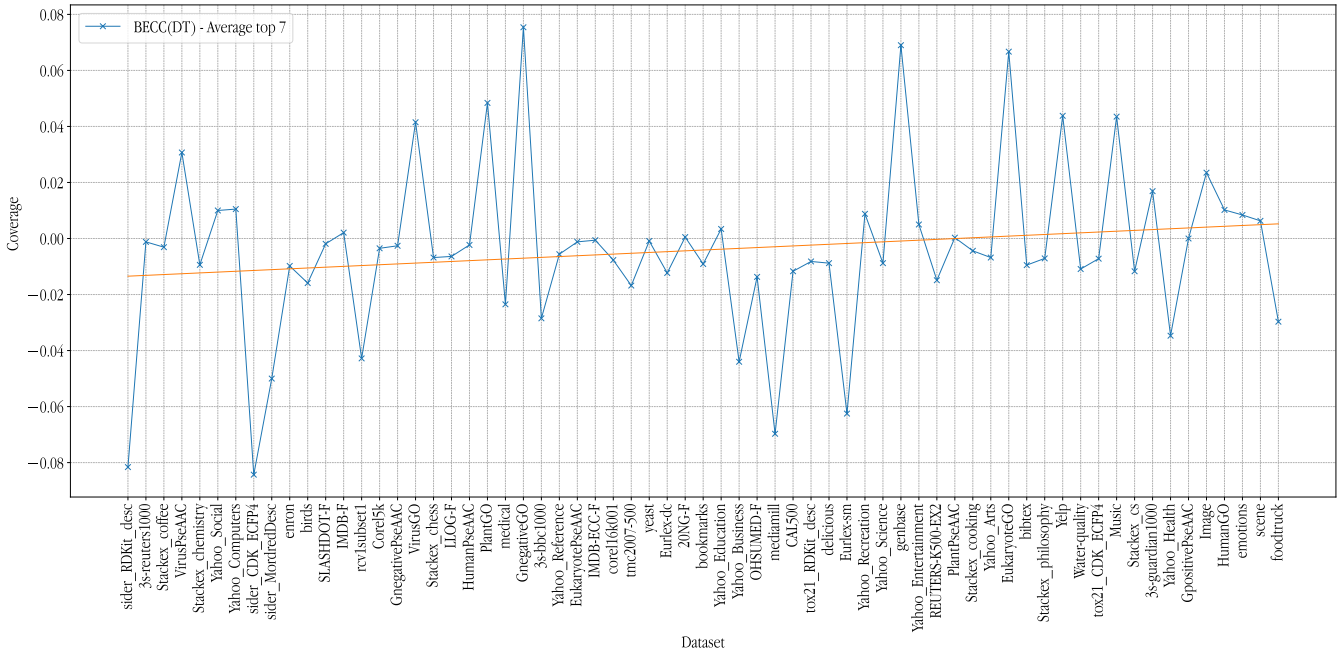


Figure 192: Difference in coverage performance between BECC and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

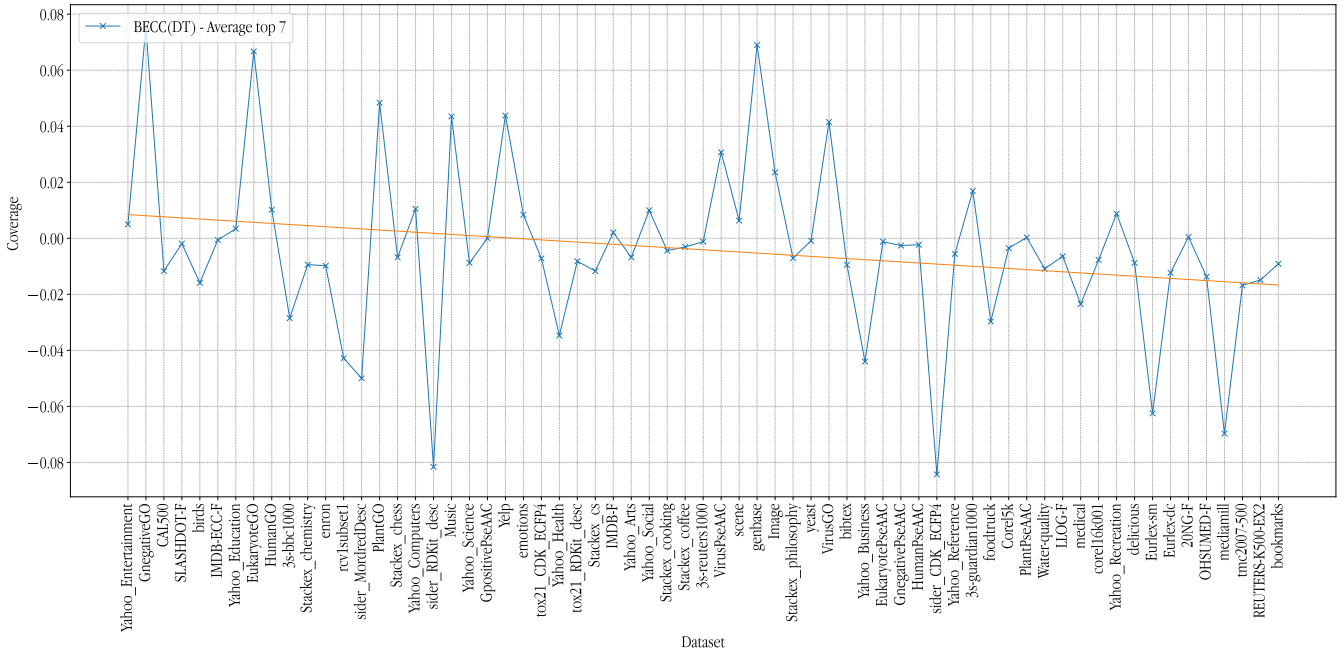


Figure 193: Difference in coverage performance between BECC and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

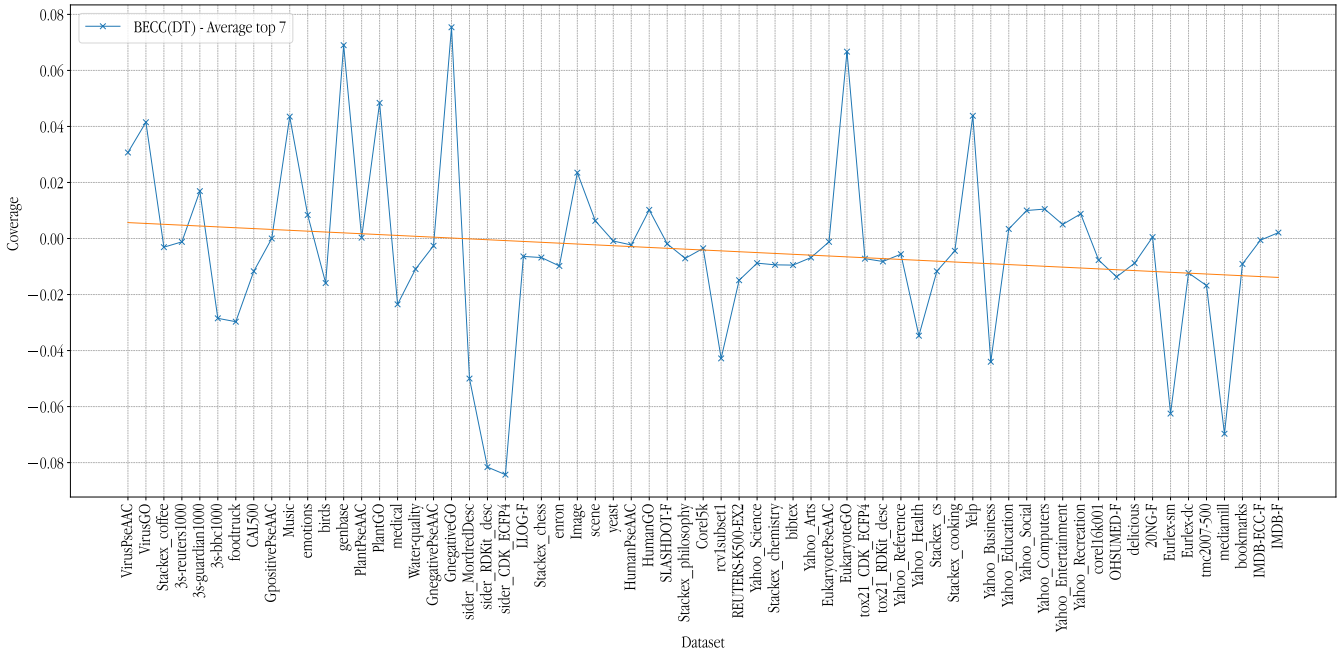


Figure 194: Difference in coverage performance between BECC and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

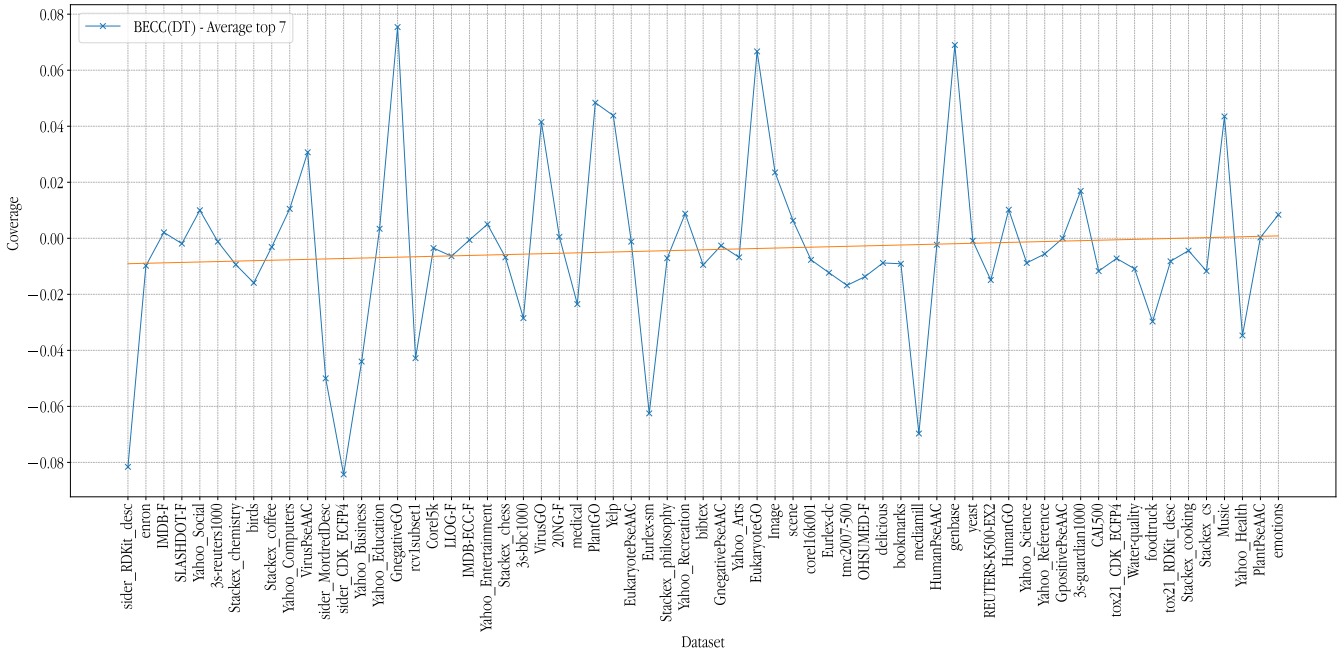


Figure 195: Difference in coverage performance between BECC and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

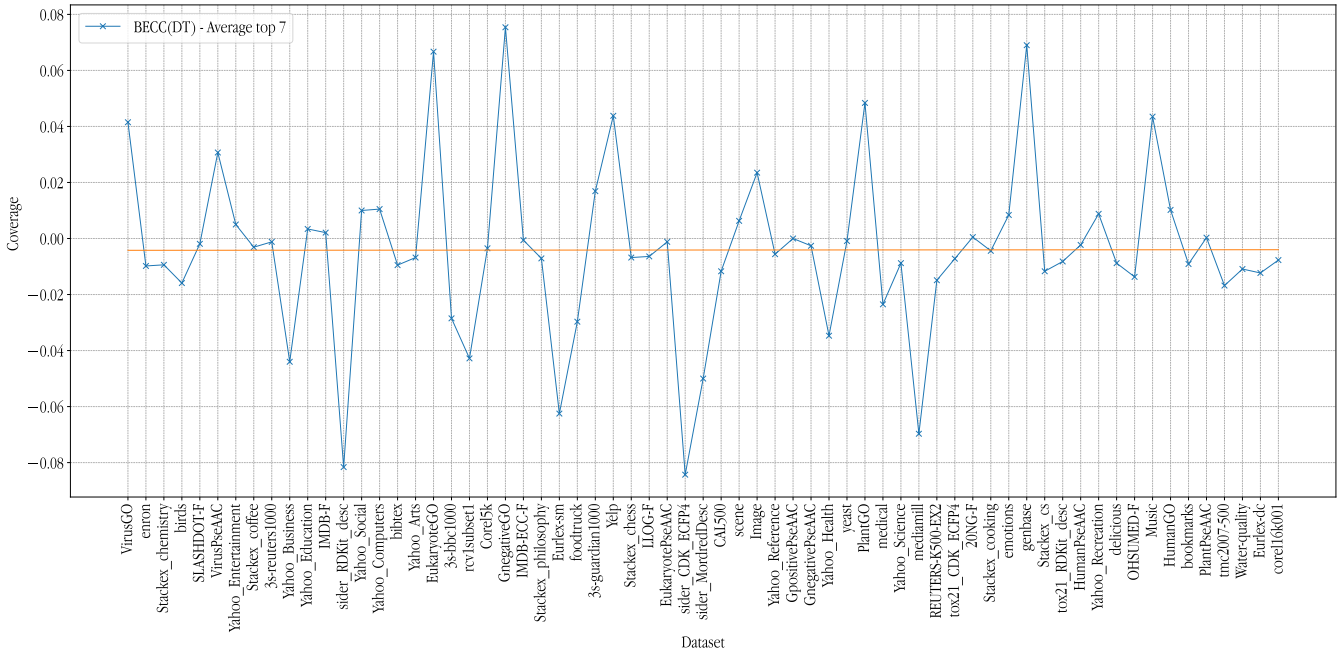


Figure 196: Difference in coverage performance between BECC and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

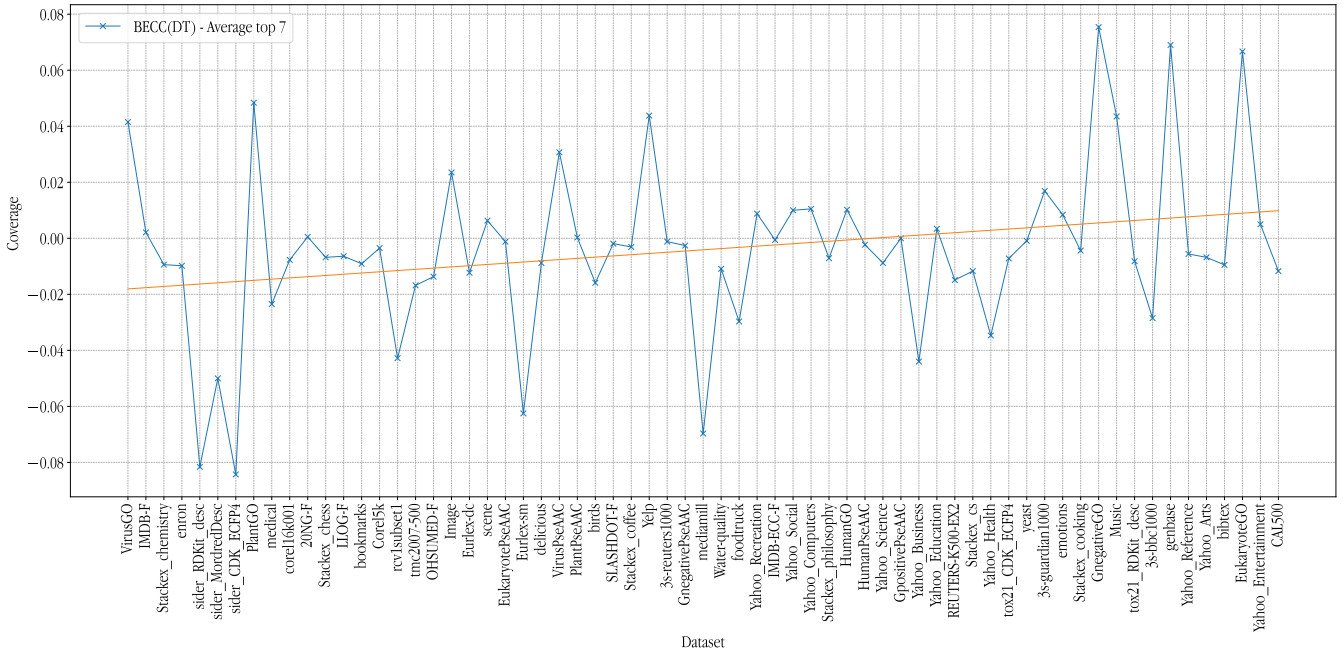


Figure 197: Difference in coverage performance between BECC and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

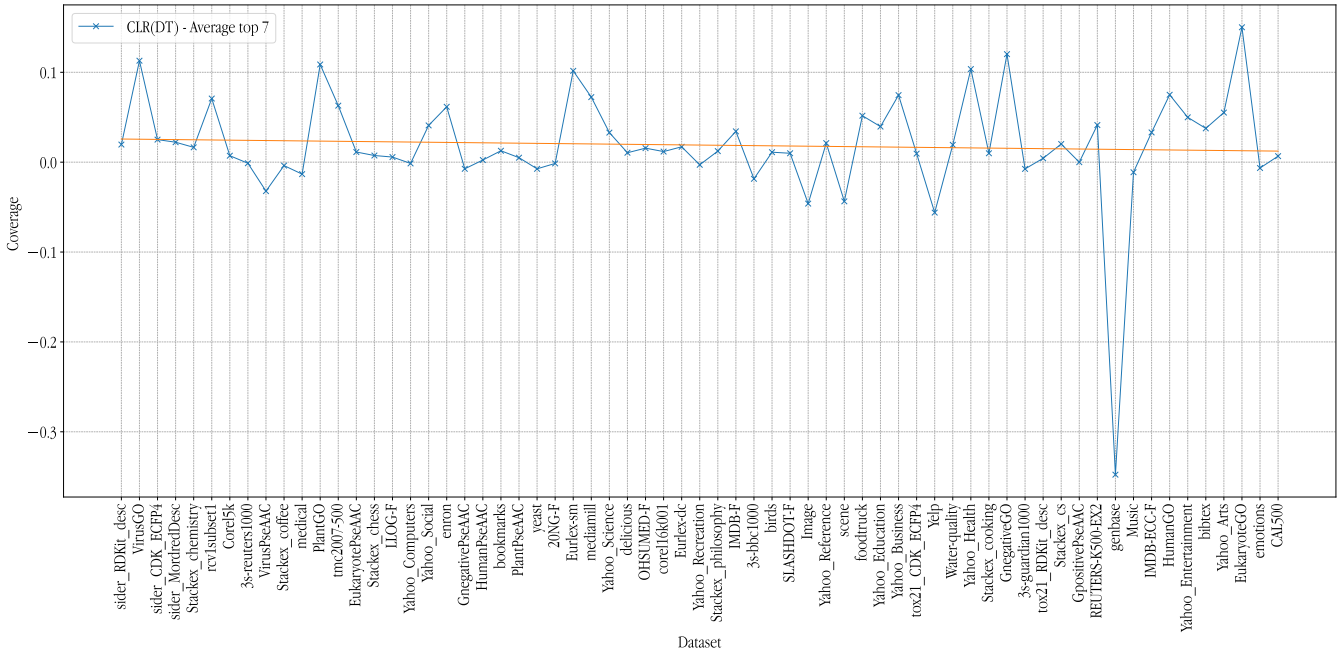


Figure 198: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

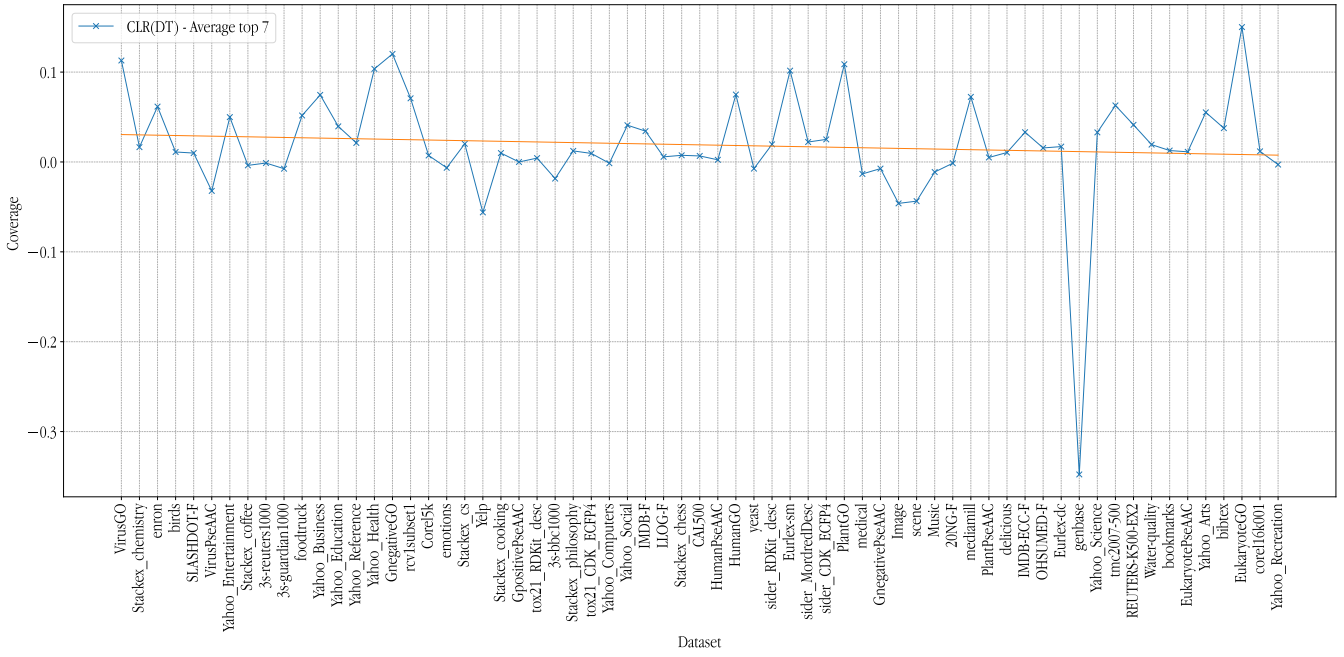


Figure 199: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

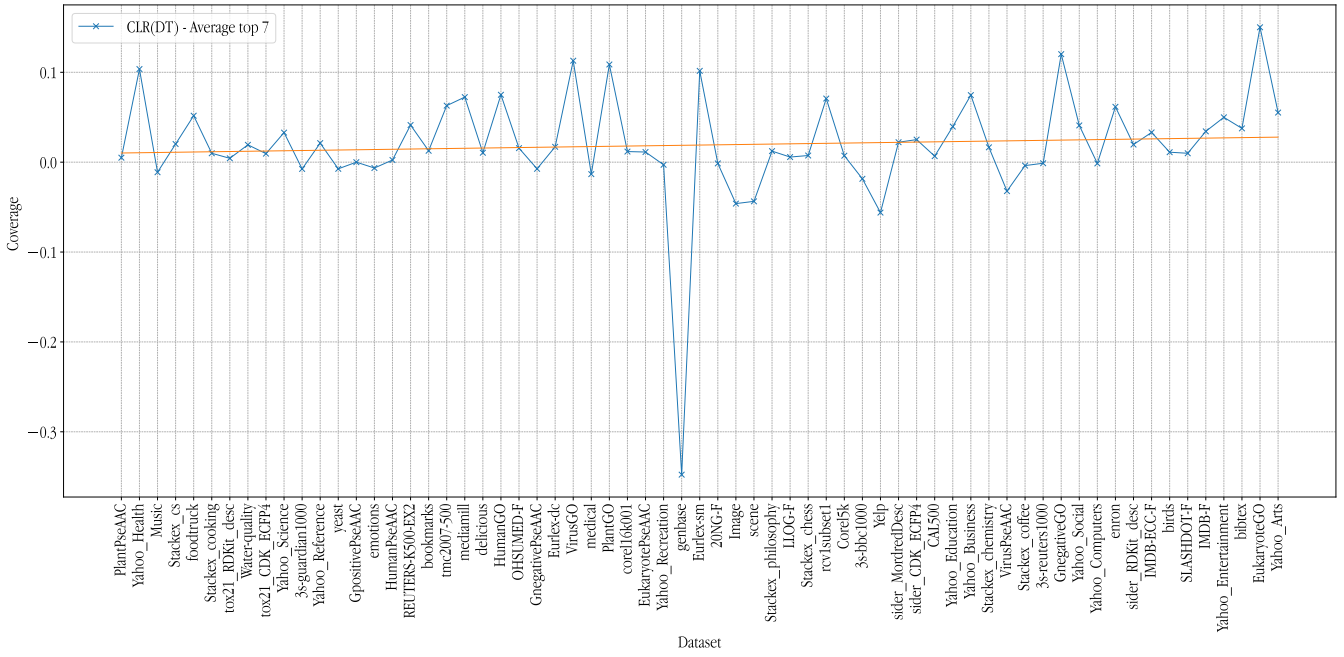


Figure 200: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

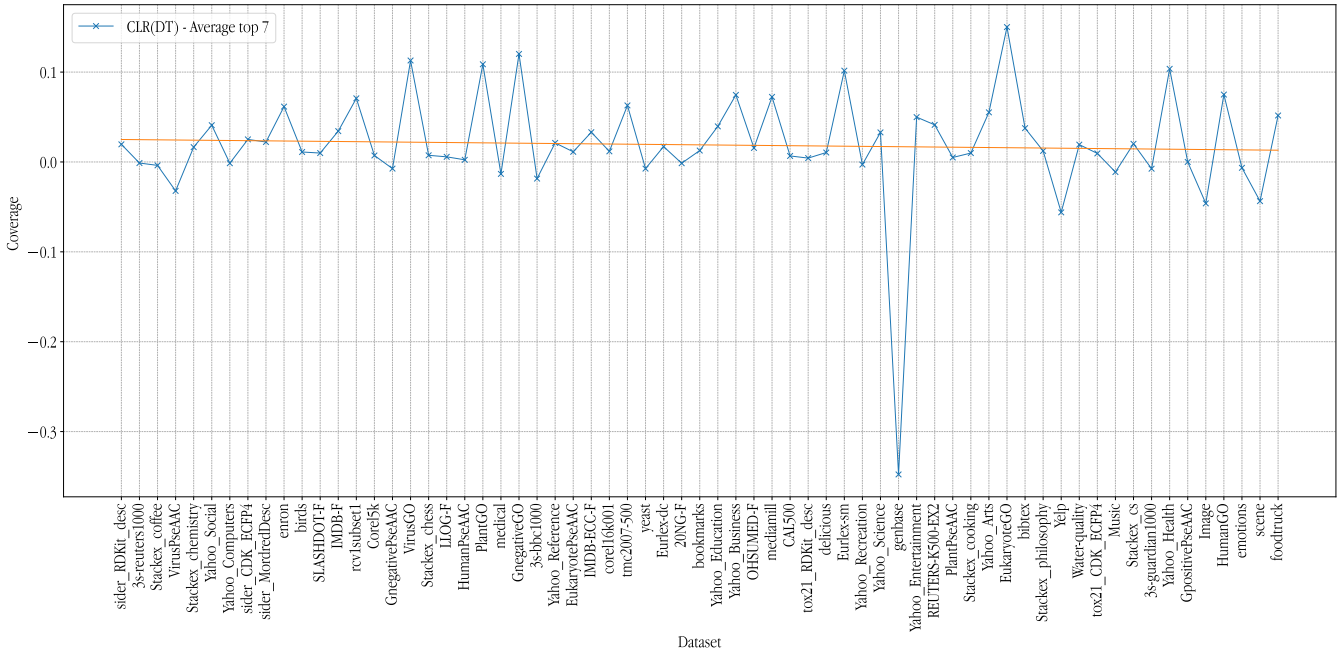


Figure 201: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

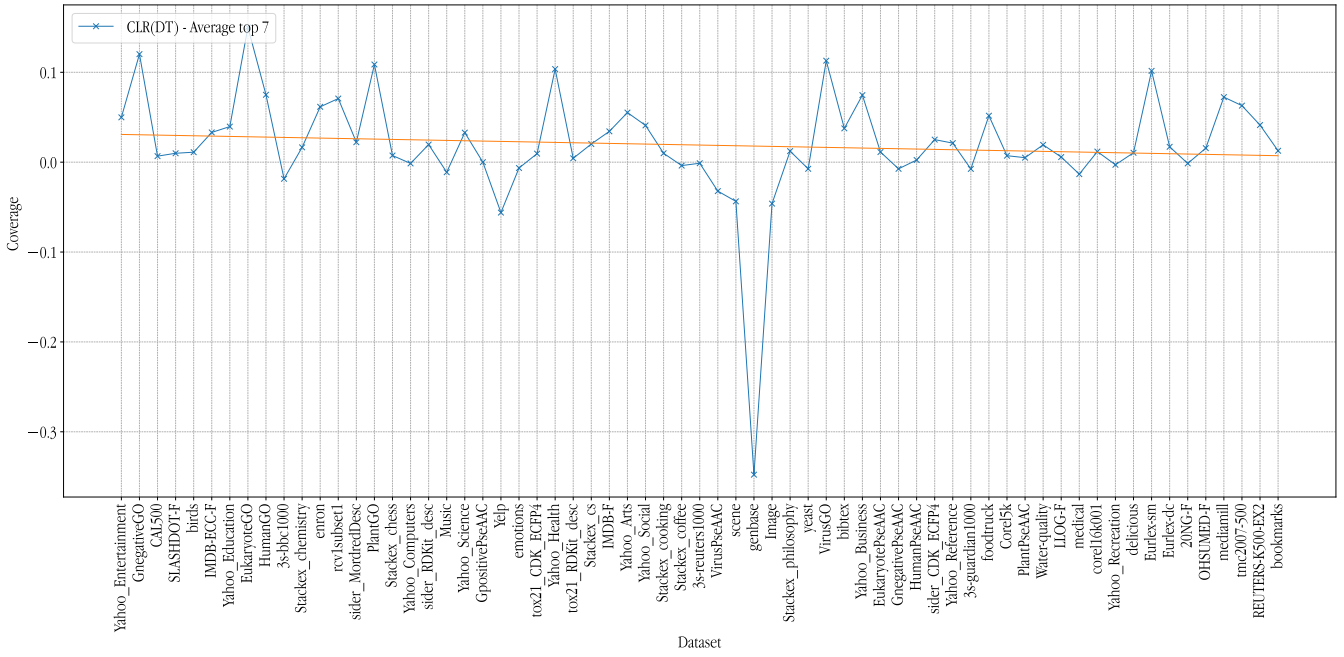


Figure 202: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

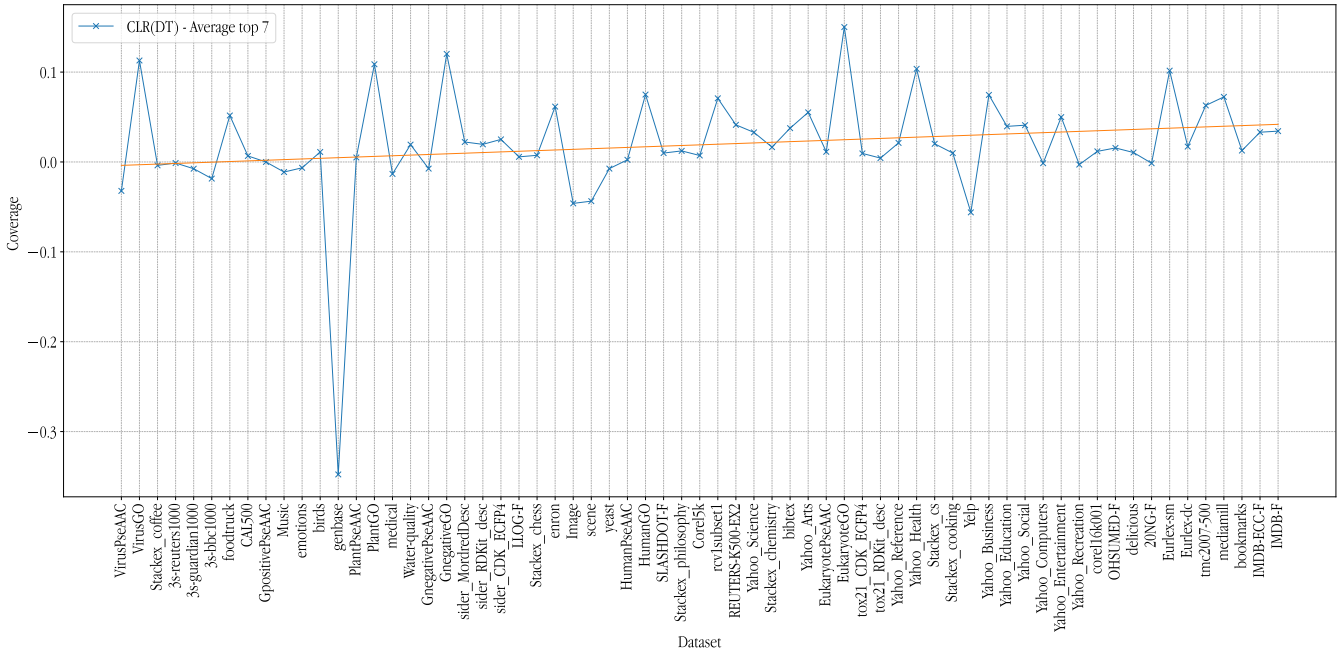


Figure 203: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

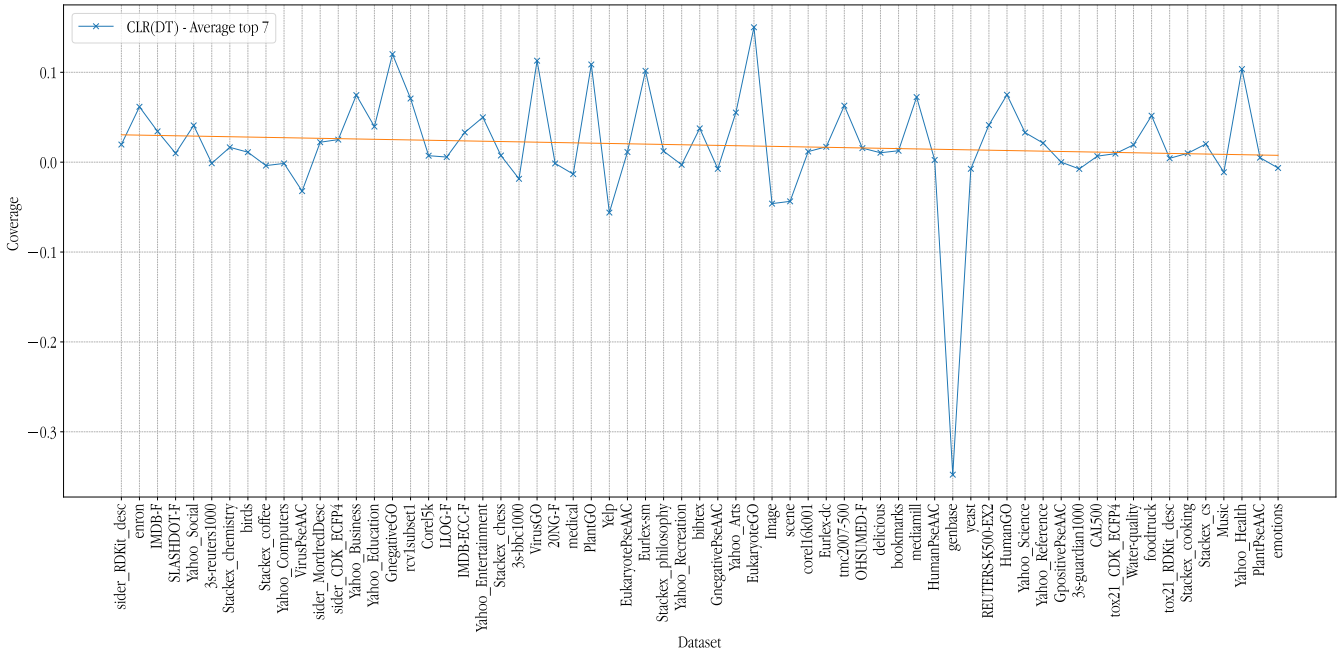


Figure 204: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

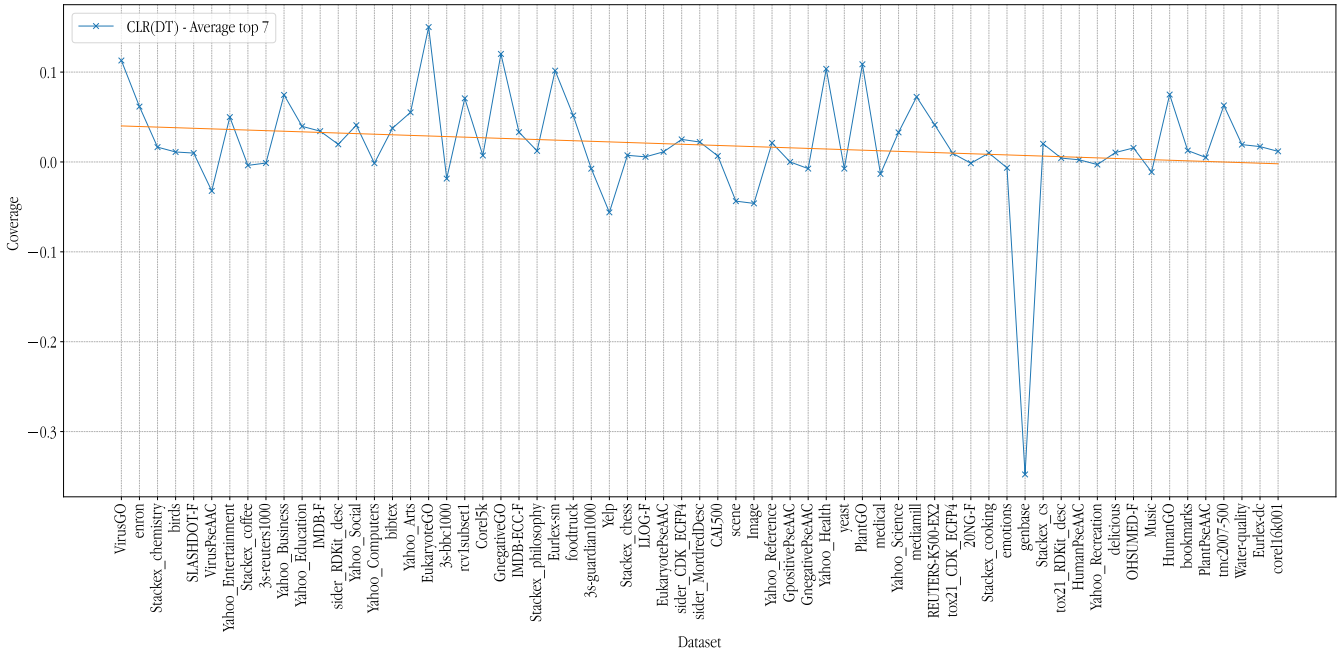


Figure 205: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

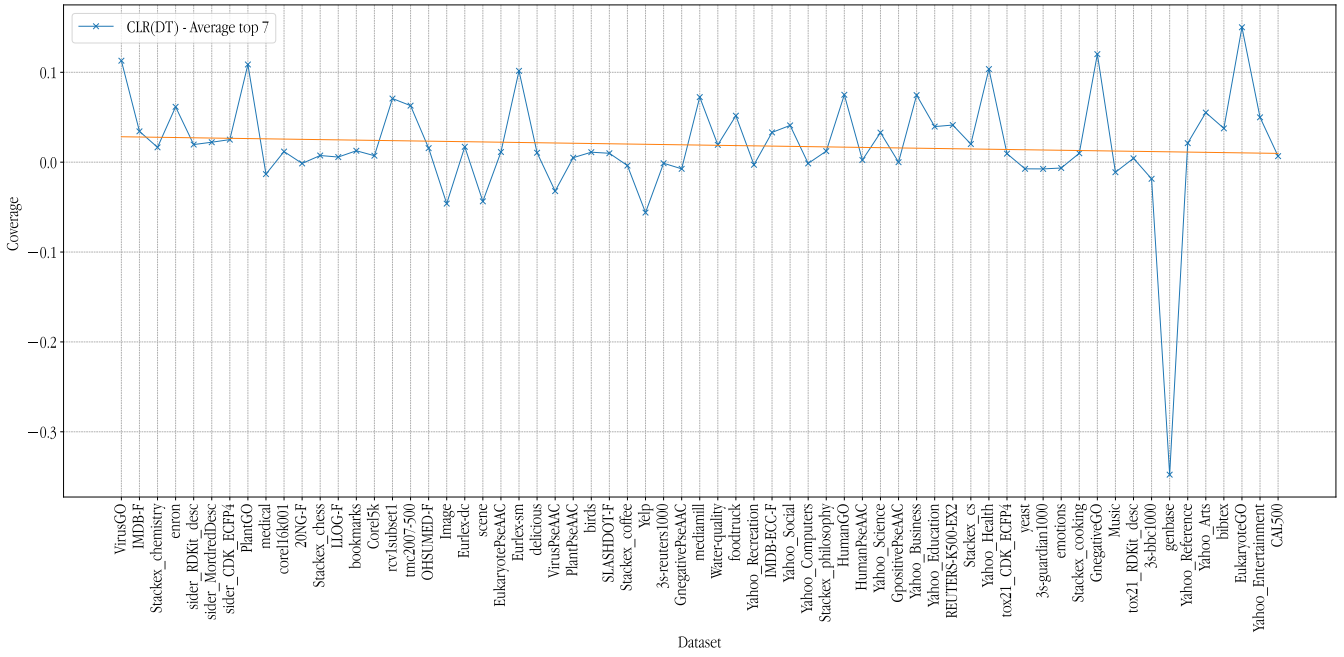


Figure 206: Difference in coverage performance between CLR(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

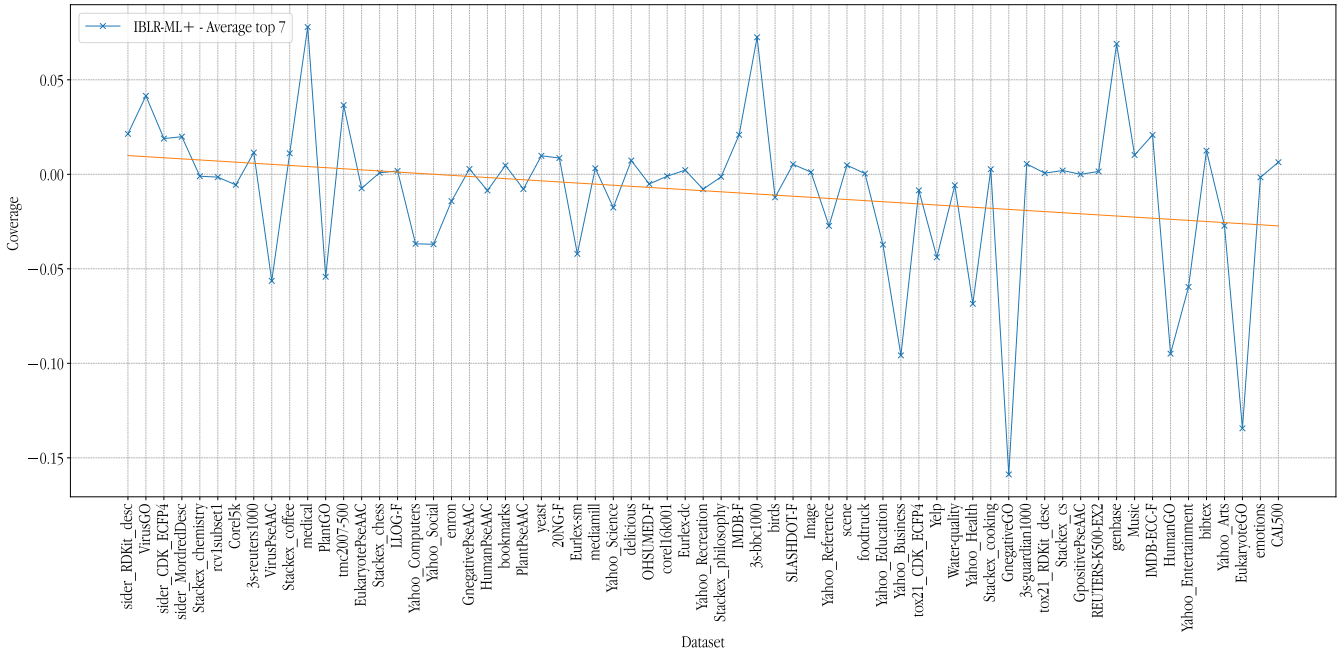


Figure 207: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

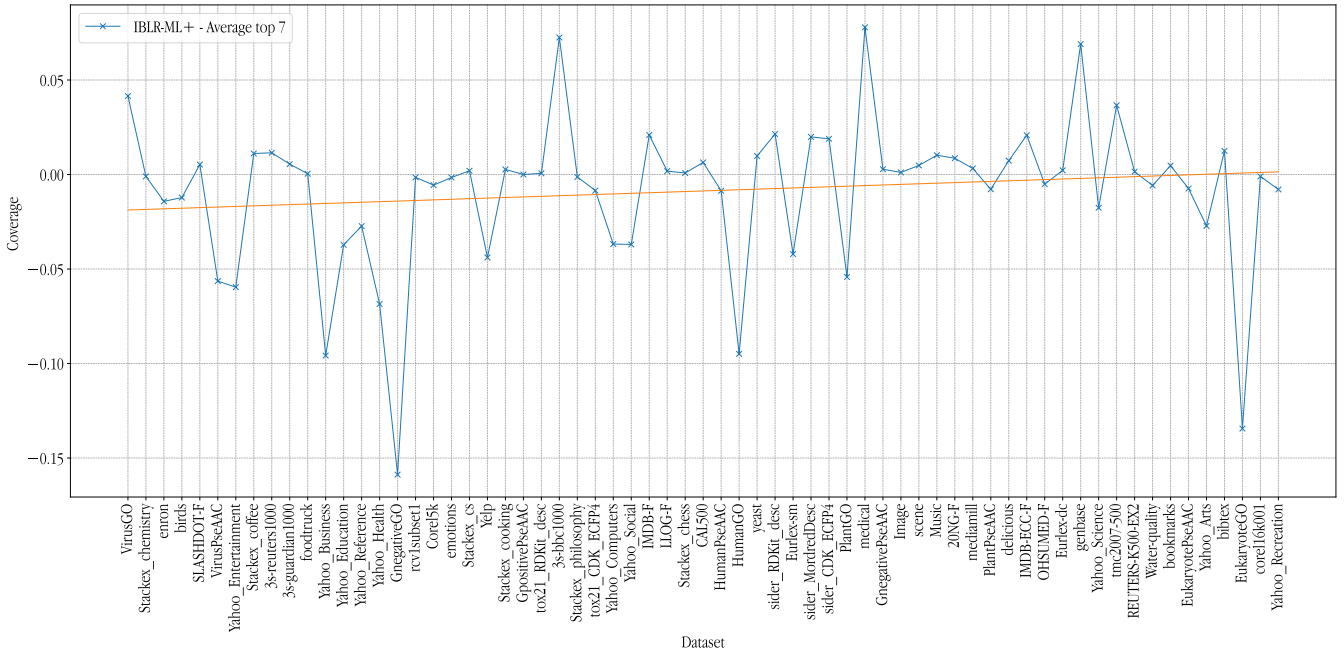


Figure 208: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

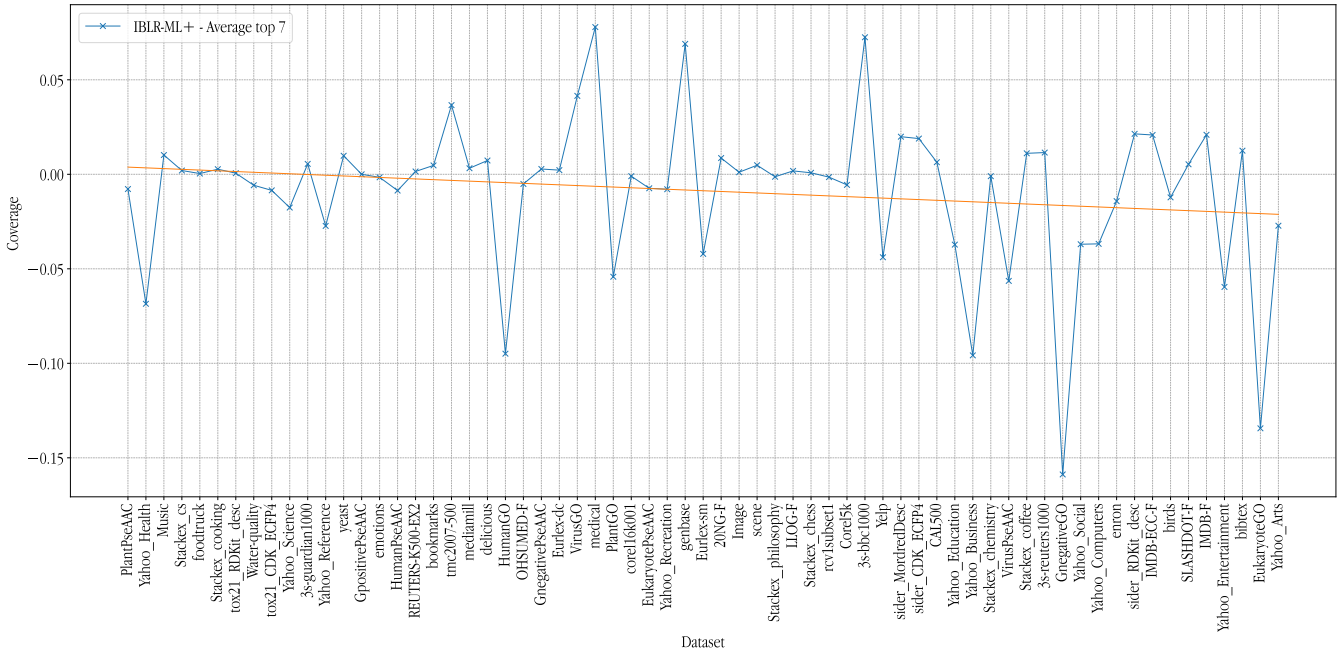


Figure 209: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

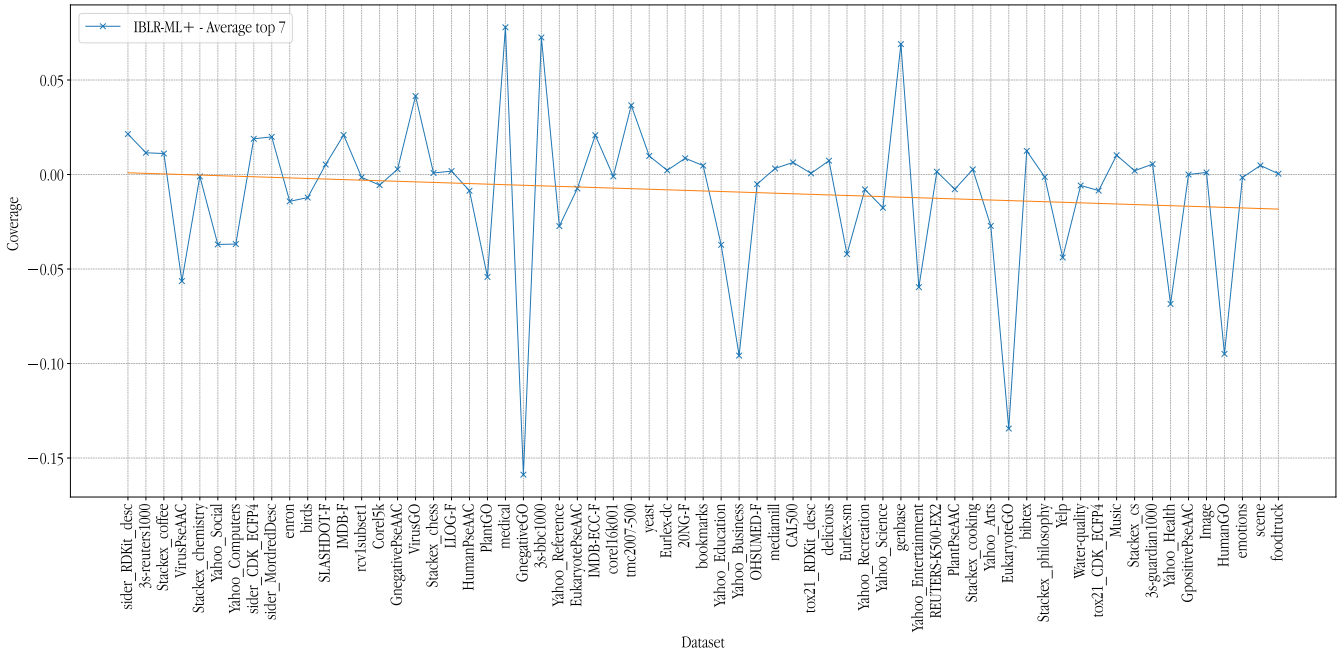


Figure 210: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

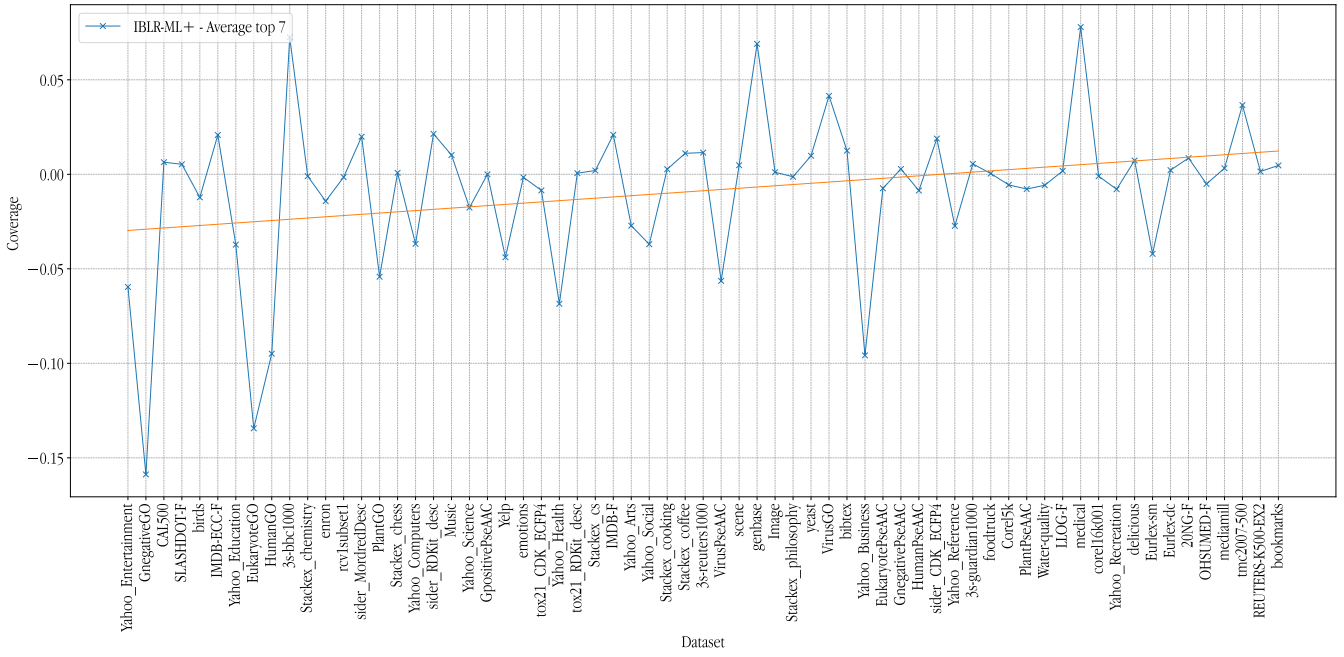


Figure 211: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

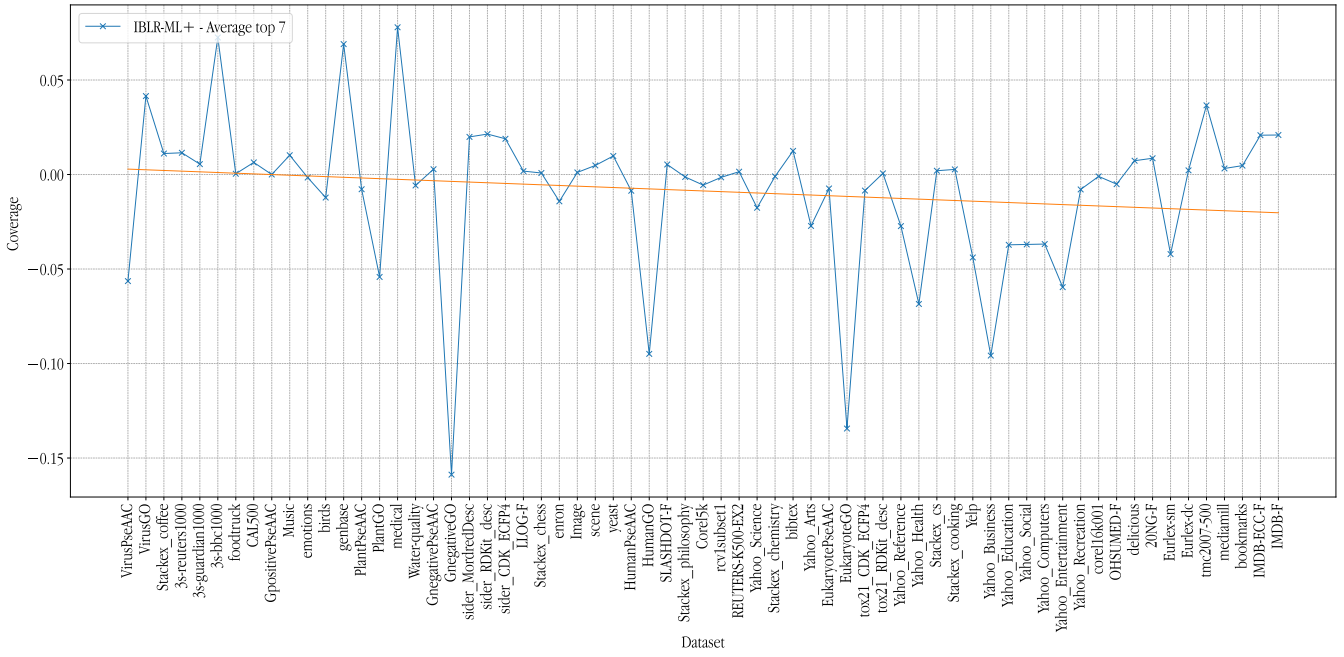


Figure 212: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

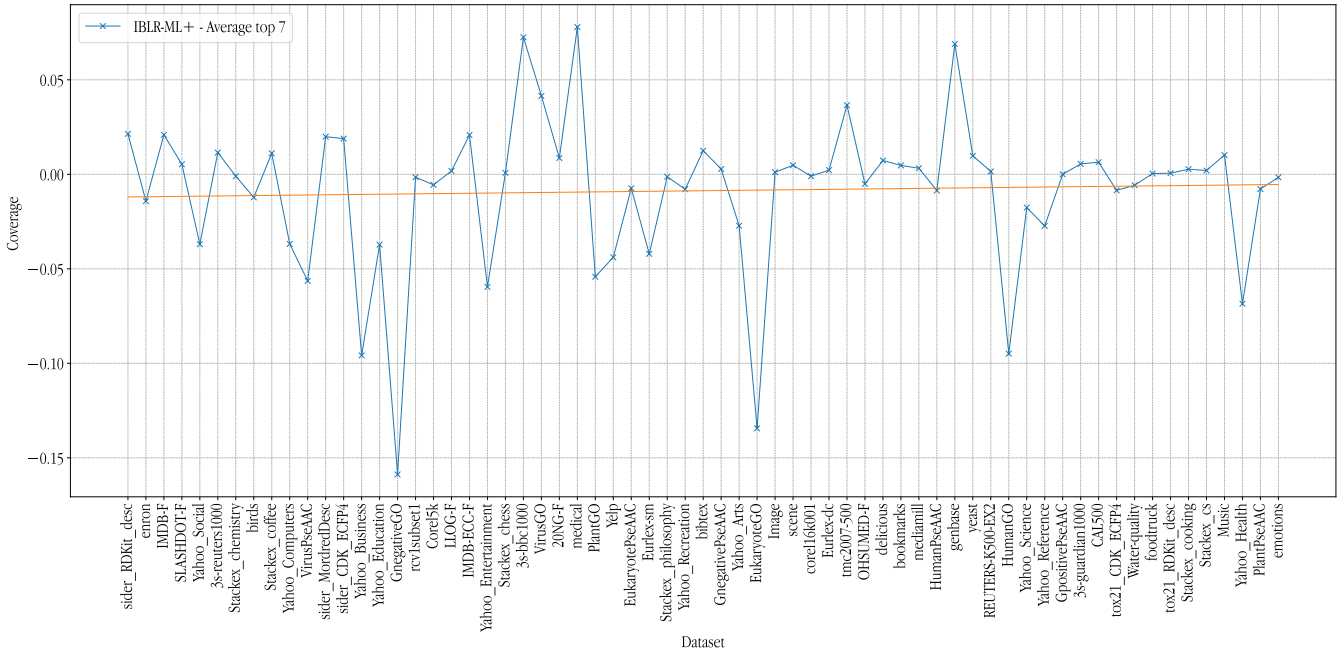


Figure 213: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

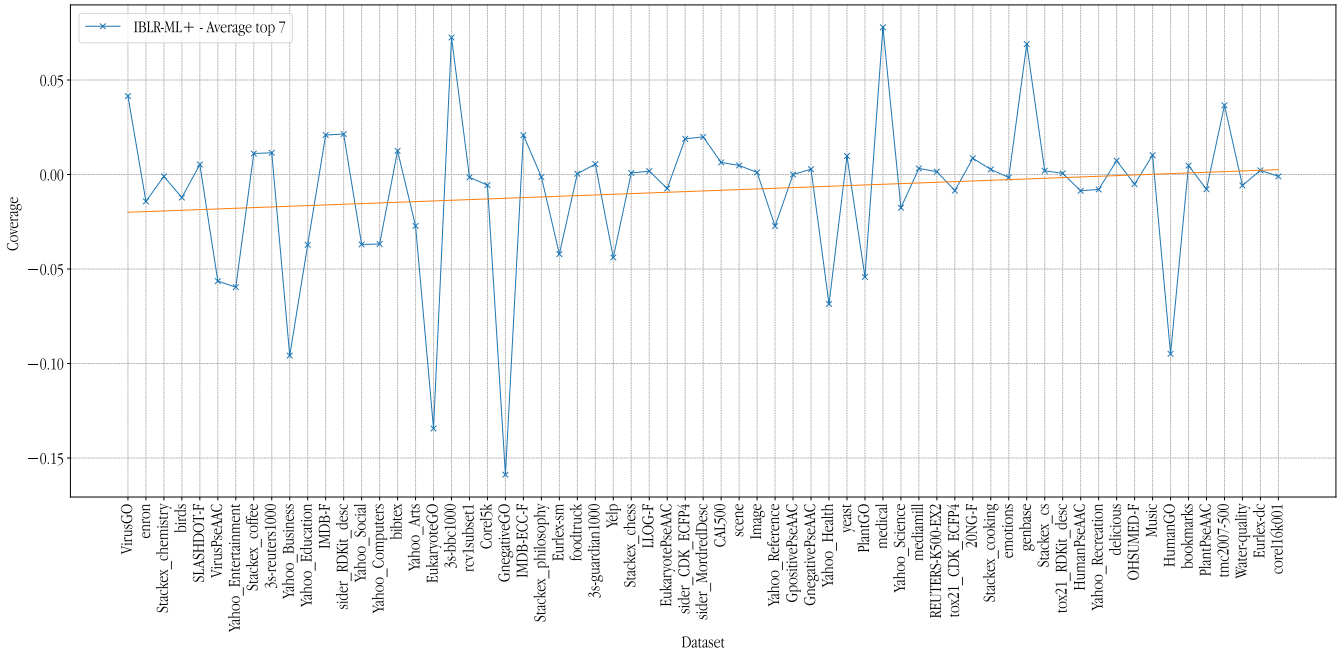


Figure 214: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

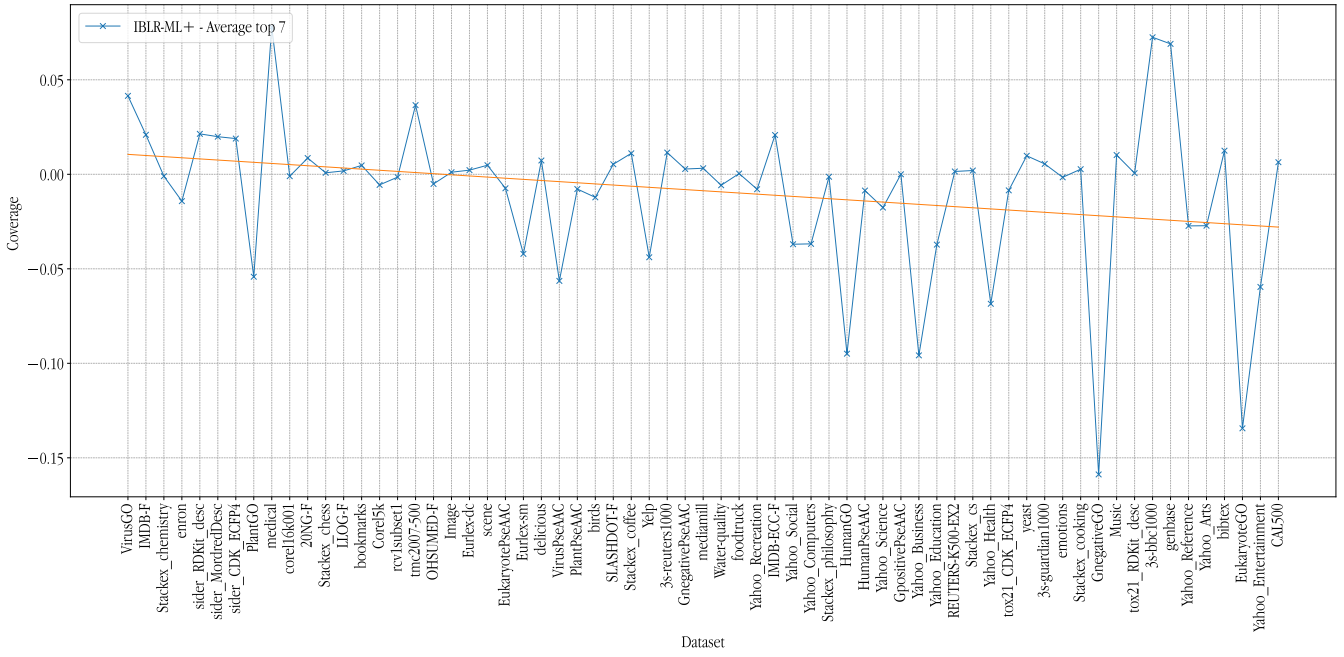


Figure 215: Difference in coverage performance between IBLR-ML+ and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

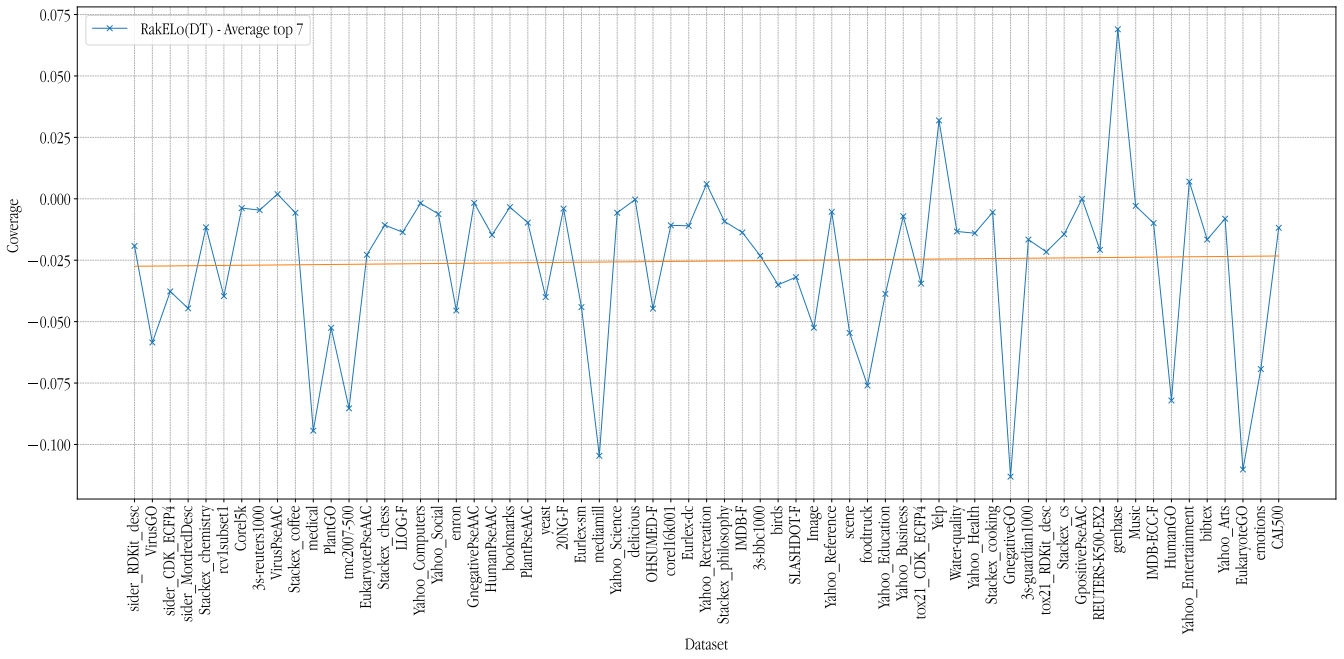


Figure 216: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

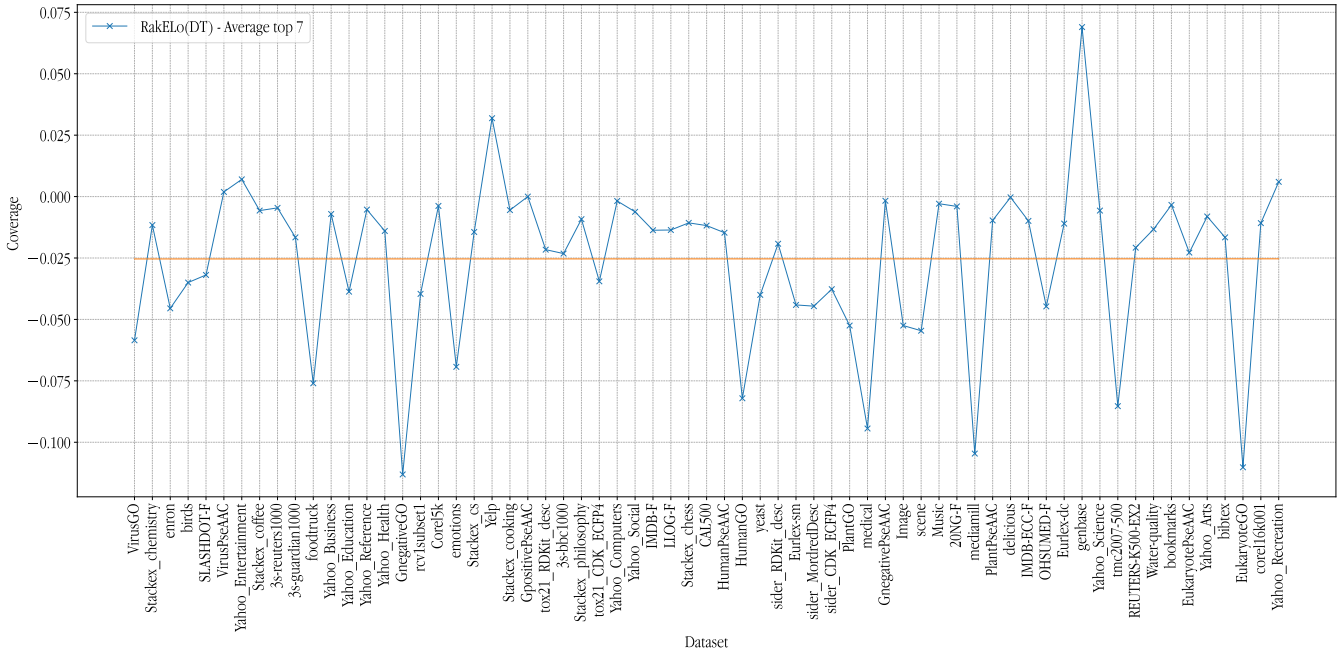


Figure 217: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

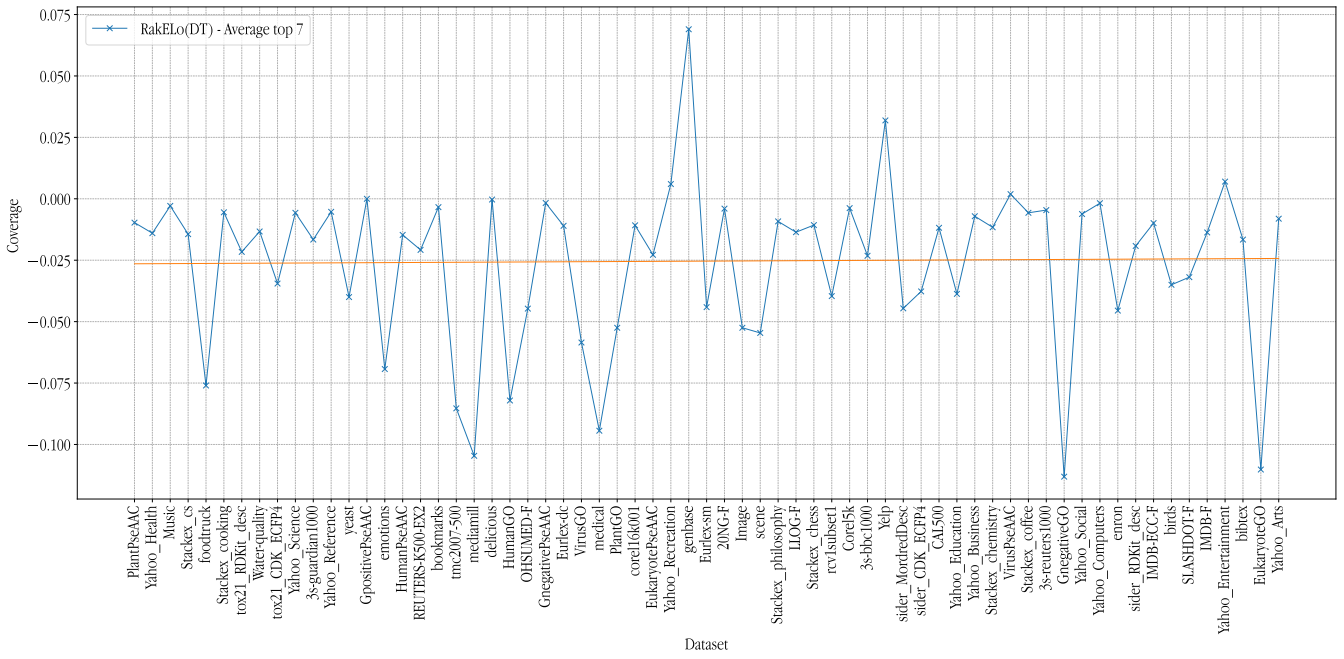


Figure 218: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

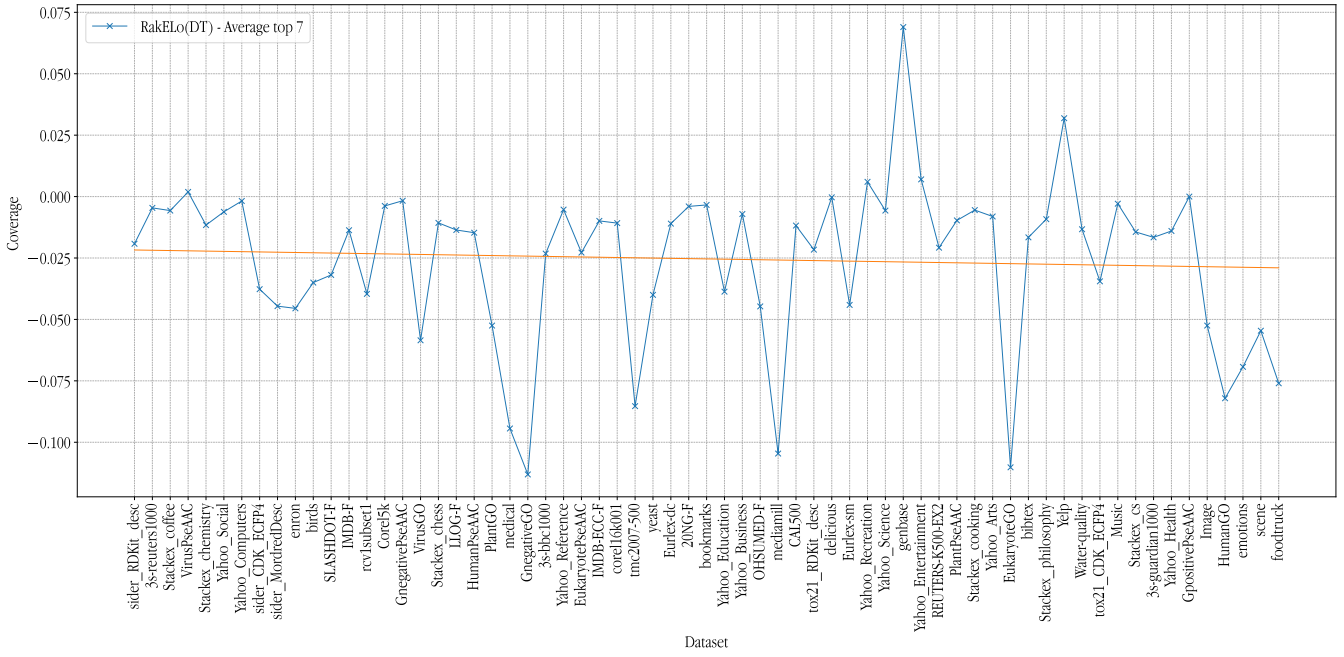


Figure 219: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

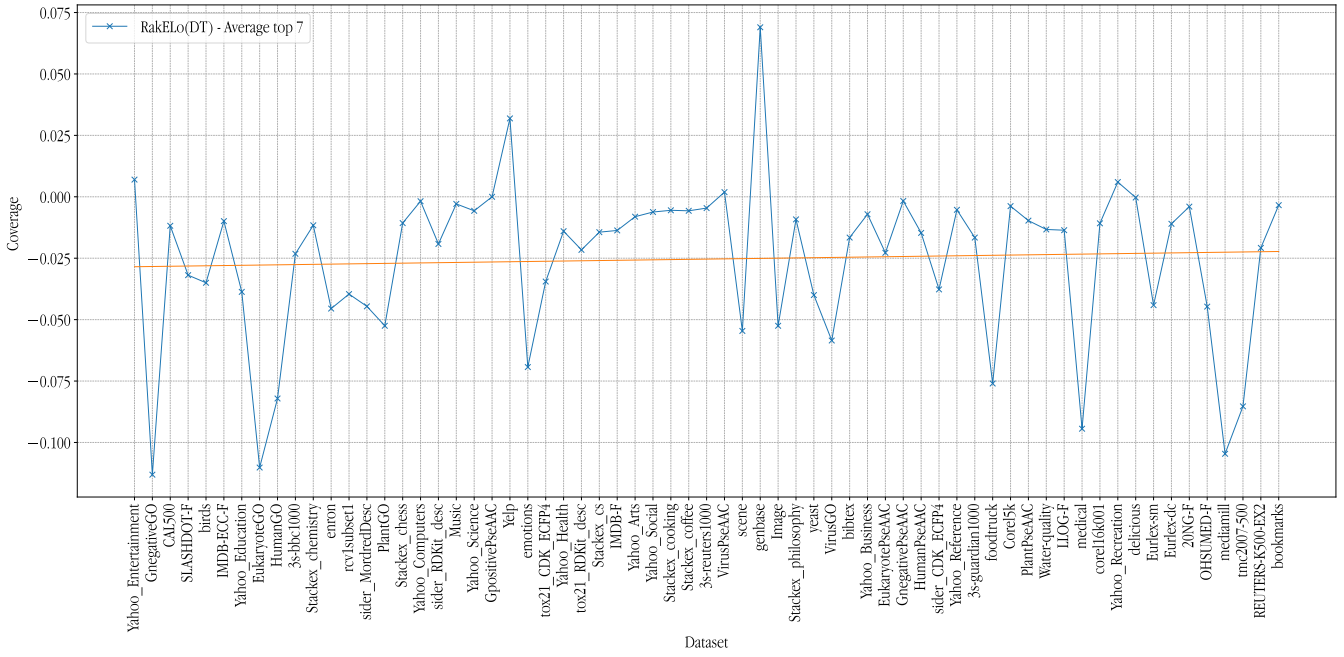


Figure 220: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

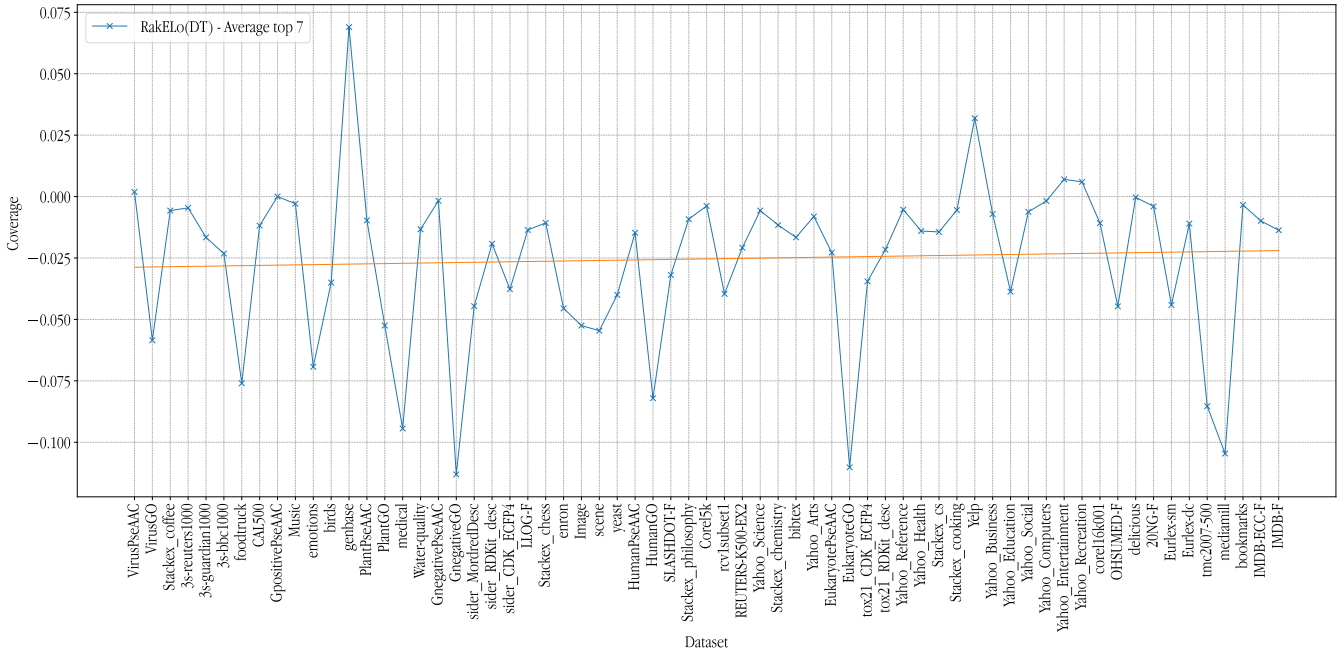


Figure 221: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

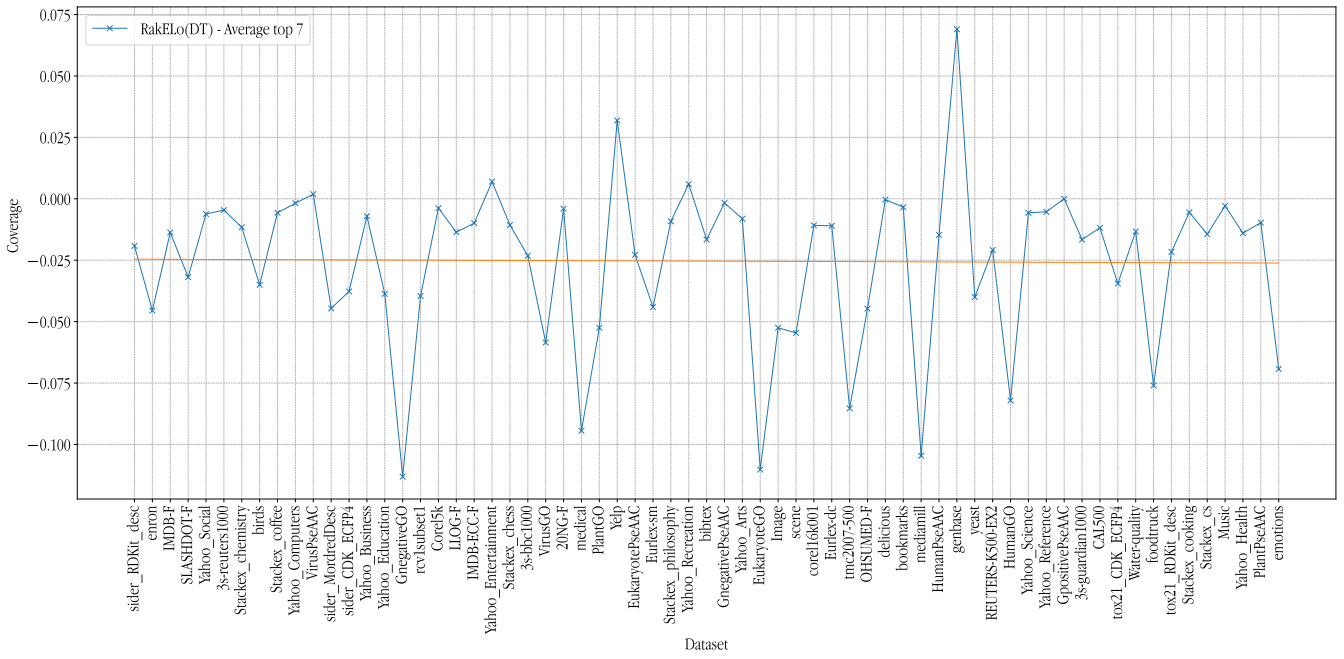


Figure 222: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

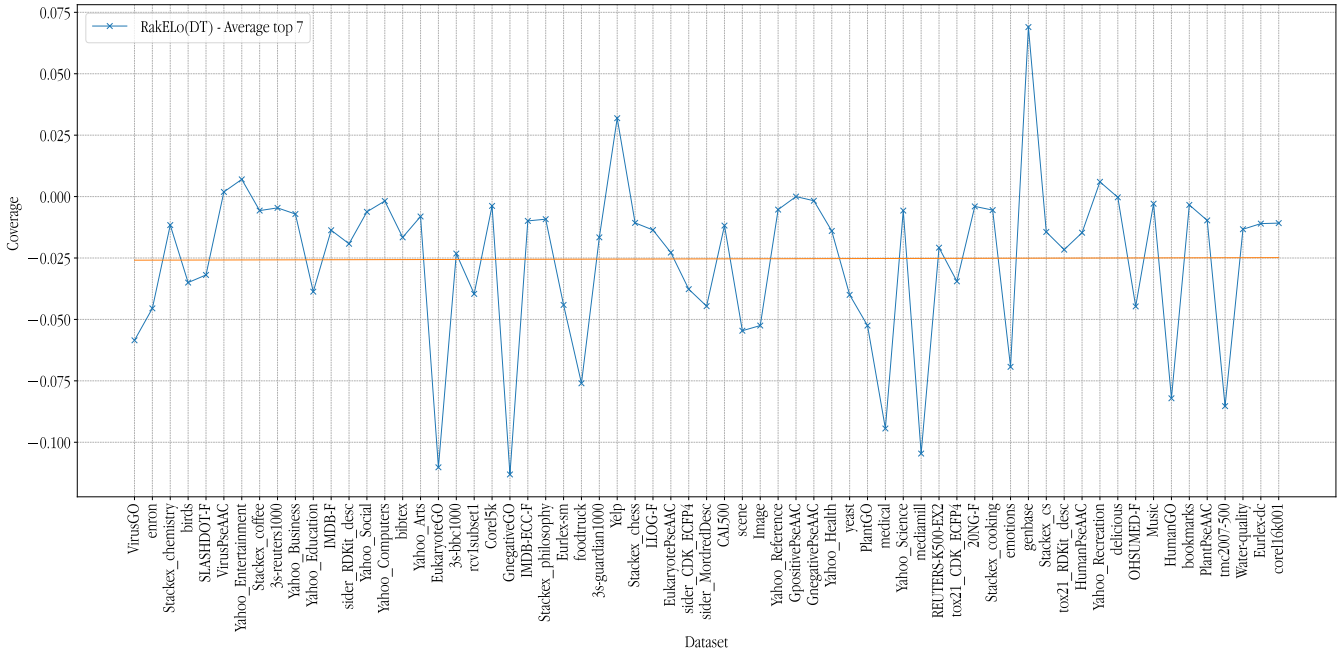


Figure 223: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

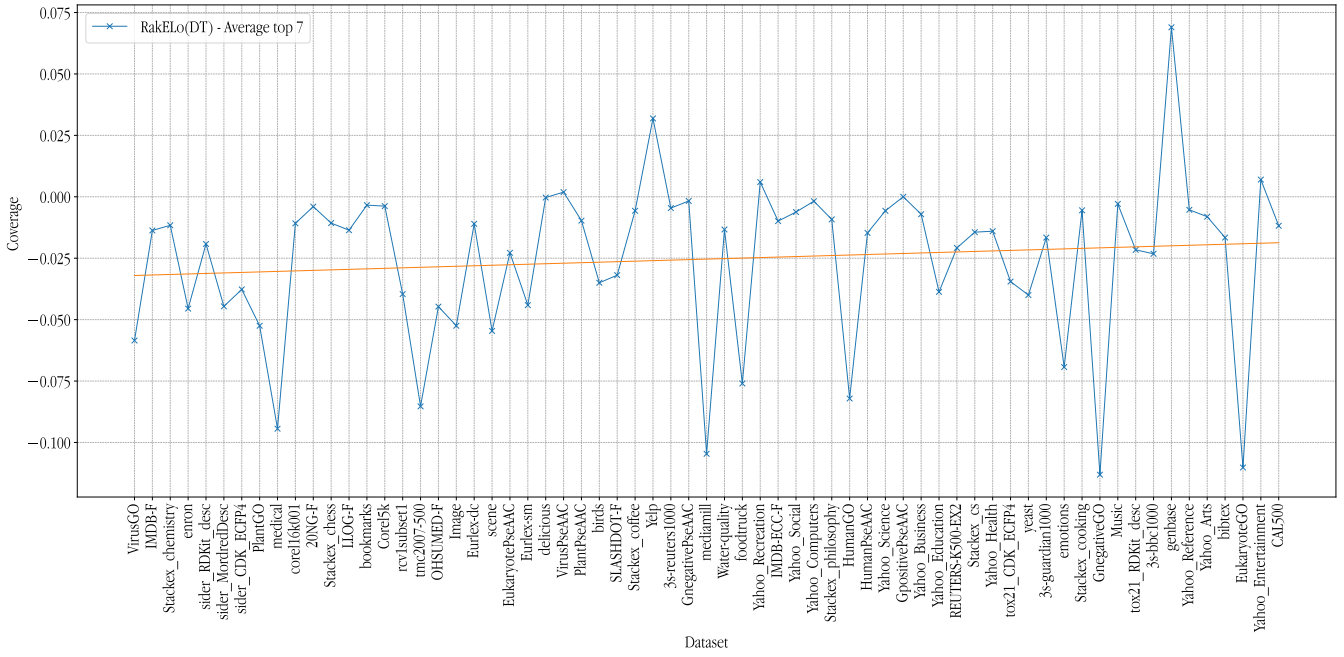


Figure 224: Difference in coverage performance between RAkELo(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

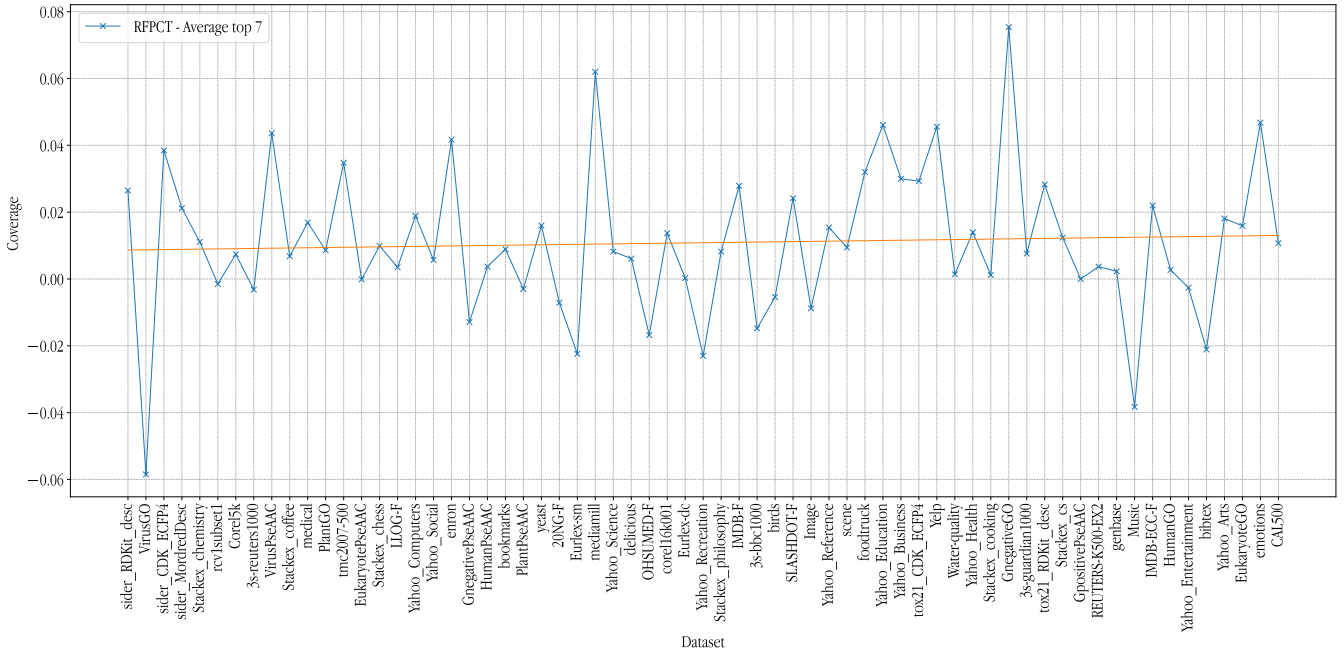


Figure 225: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

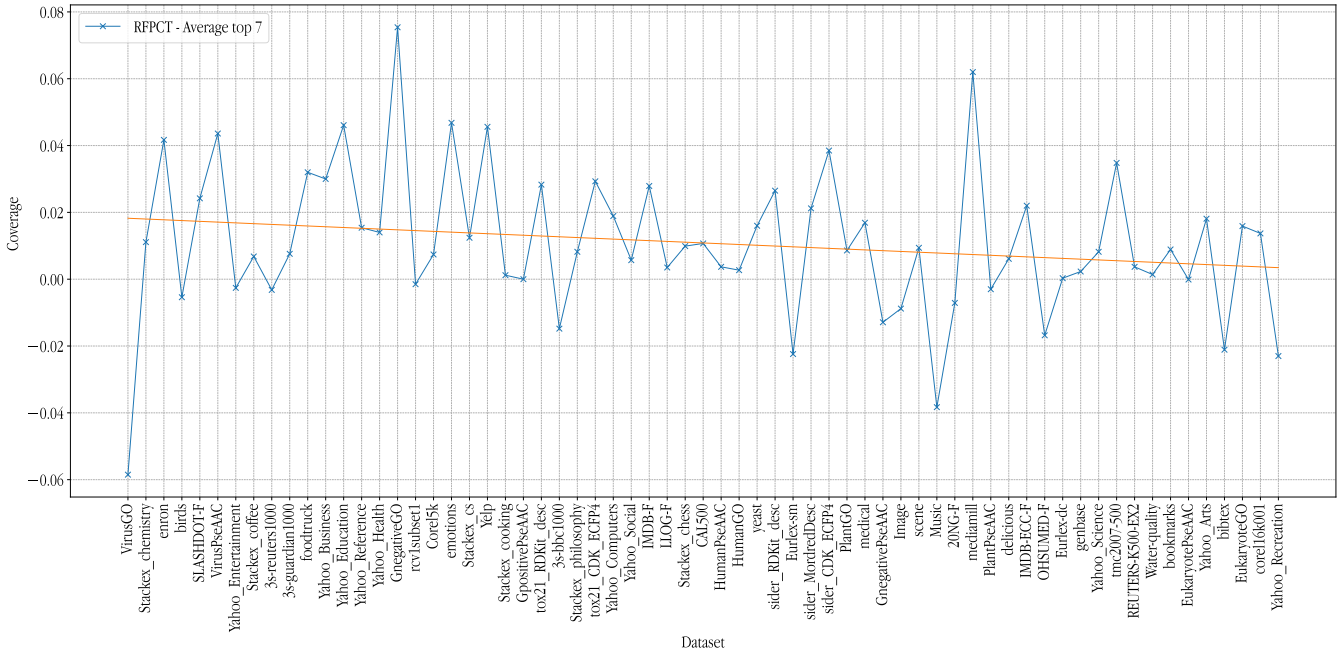


Figure 226: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

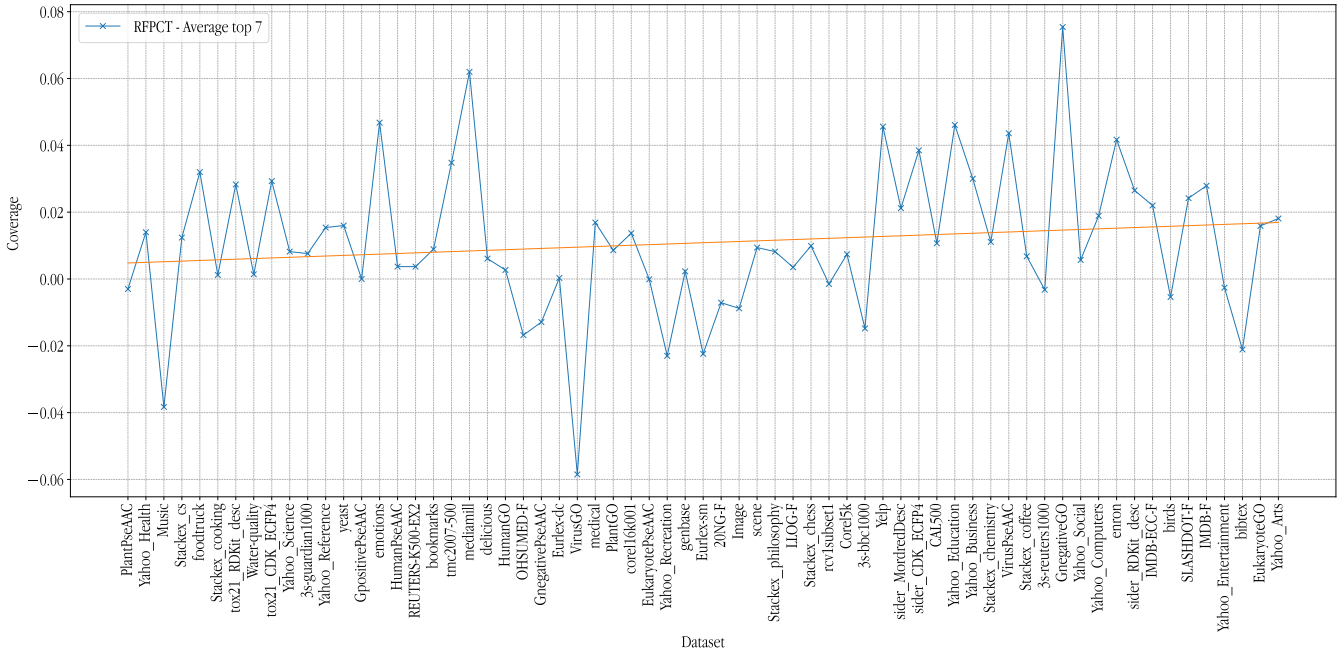


Figure 227: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

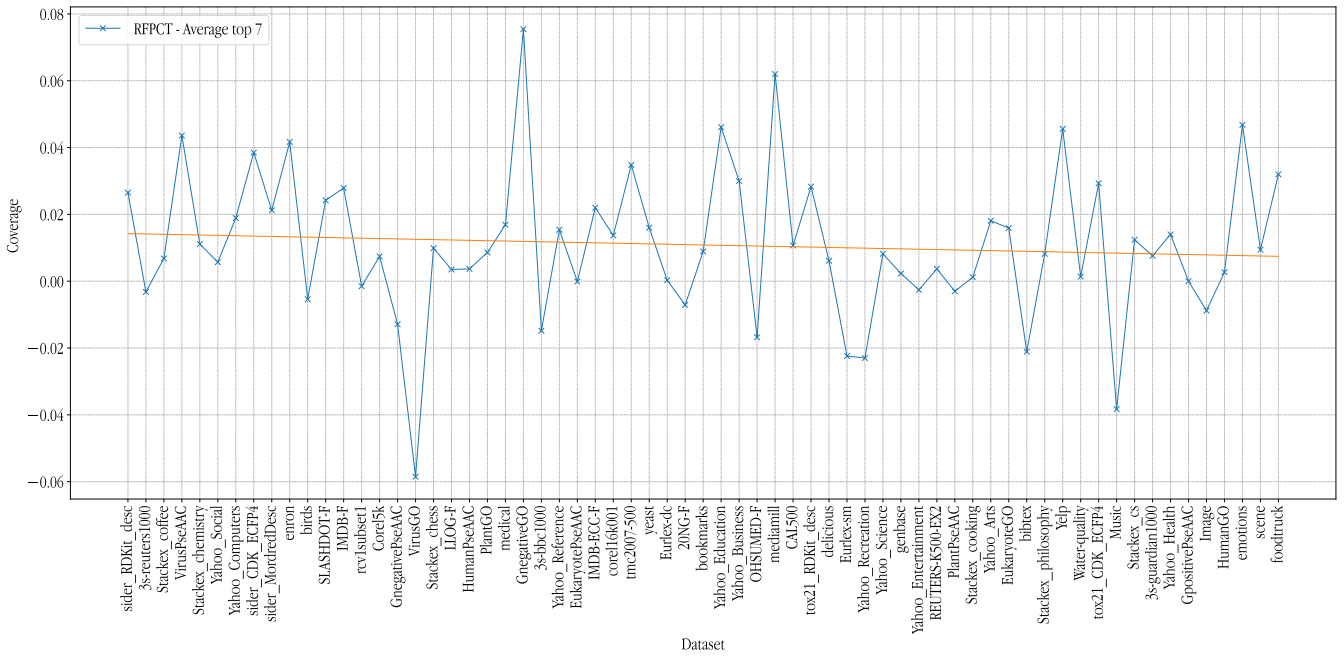


Figure 228: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

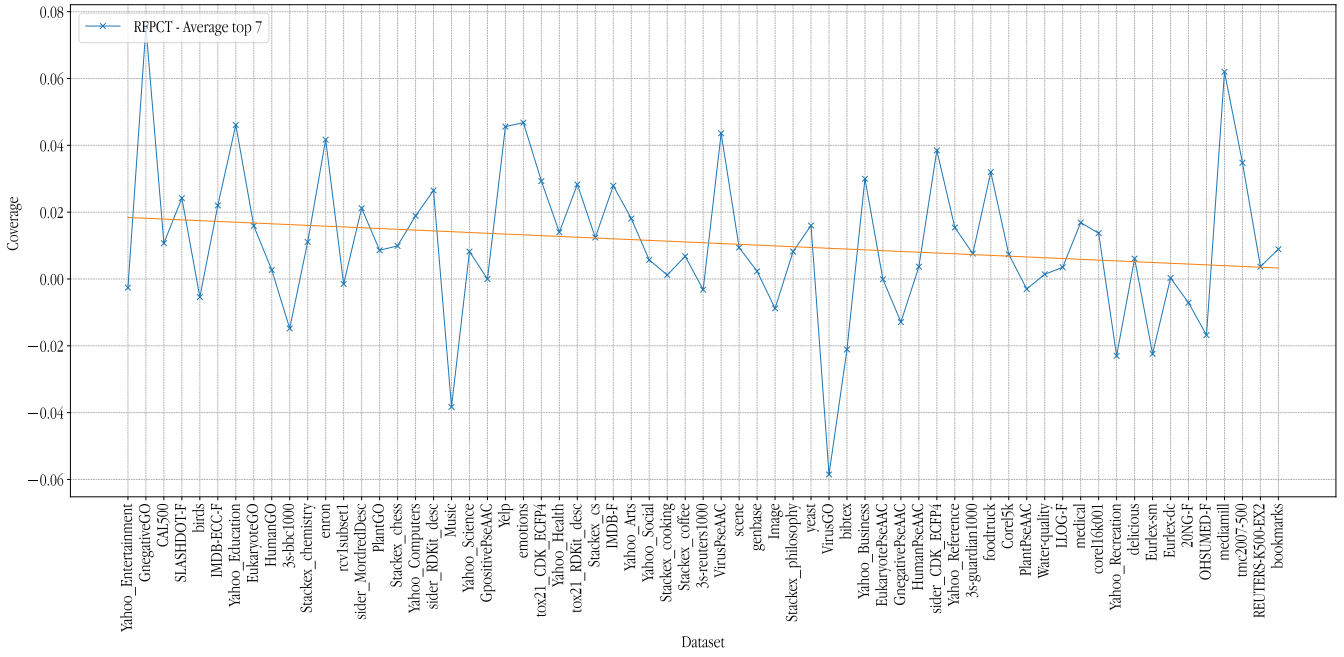


Figure 229: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

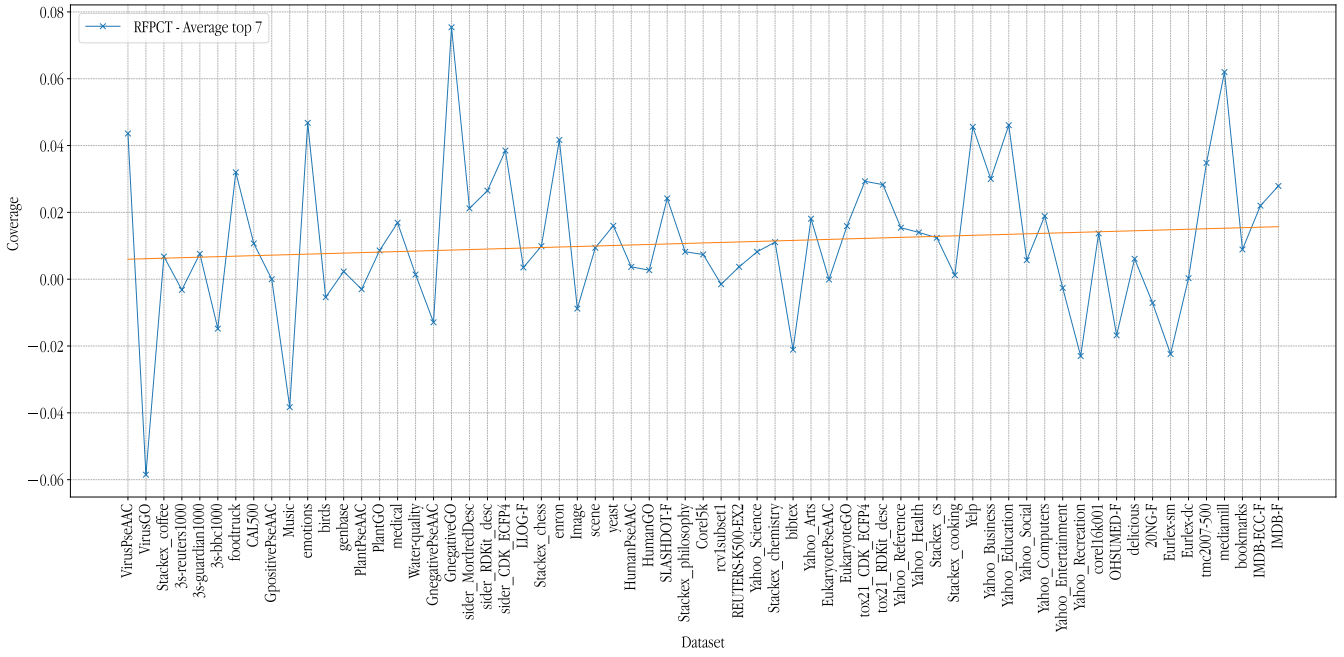


Figure 230: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

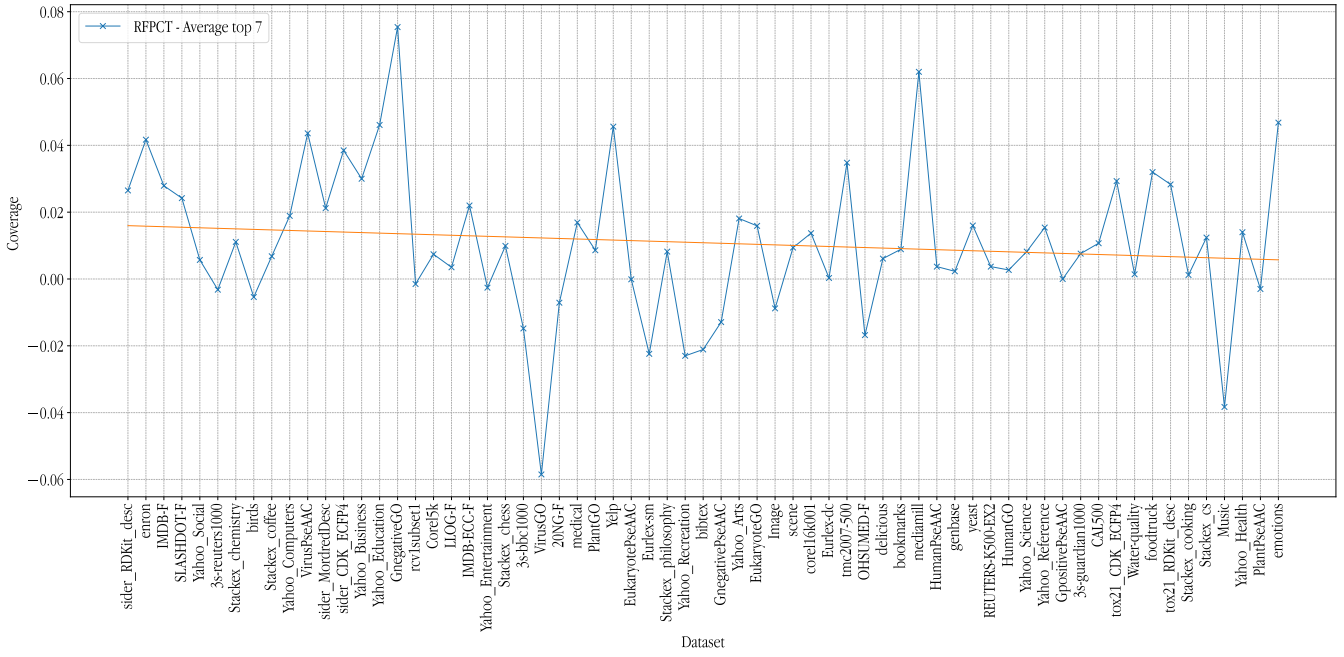


Figure 231: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

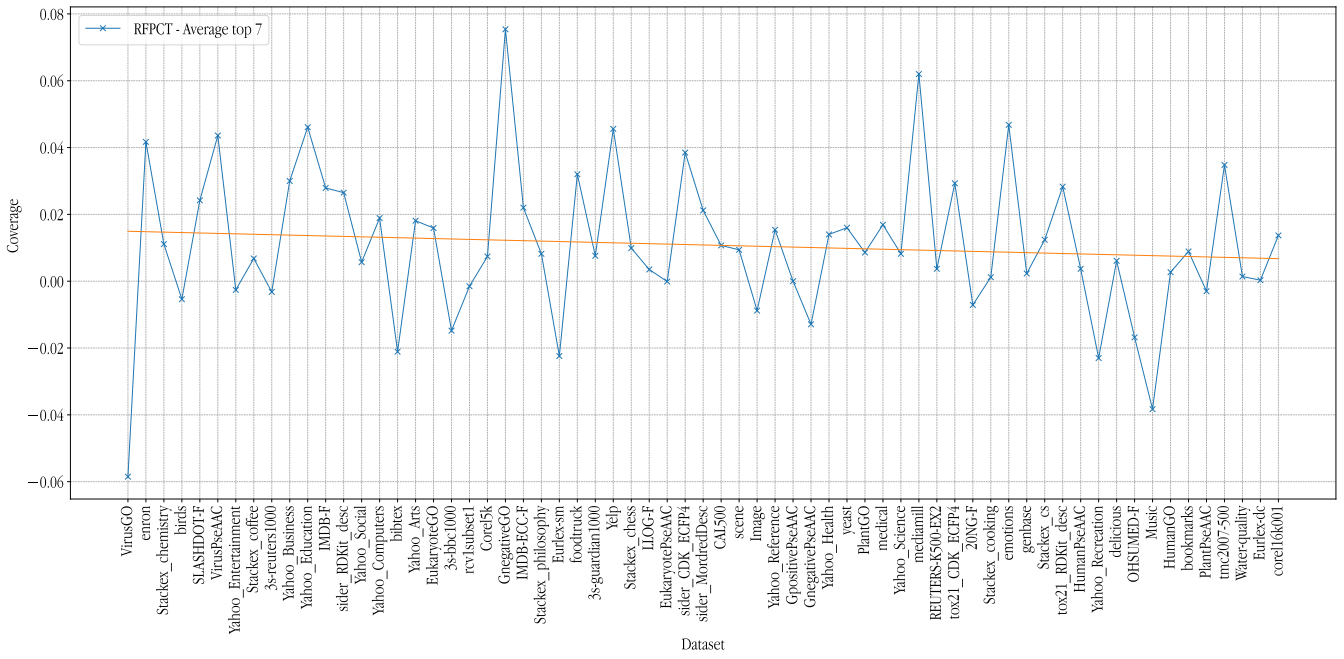


Figure 232: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

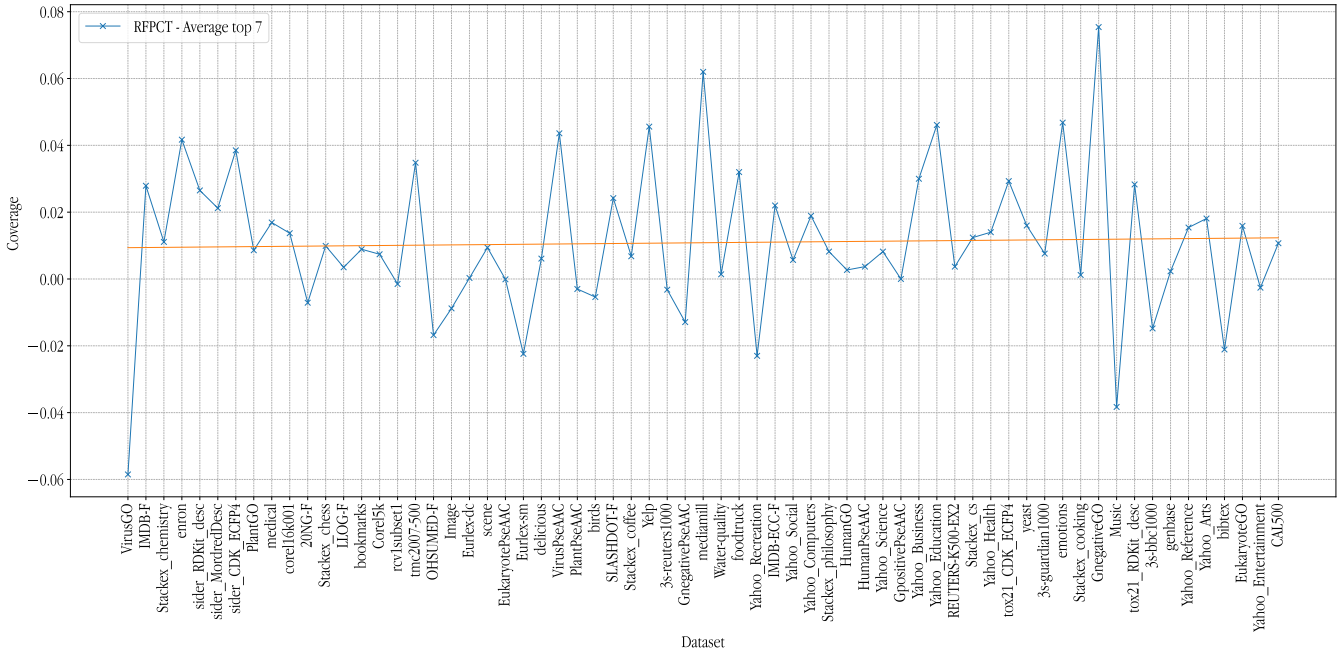


Figure 233: Difference in coverage performance between RFPCT and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

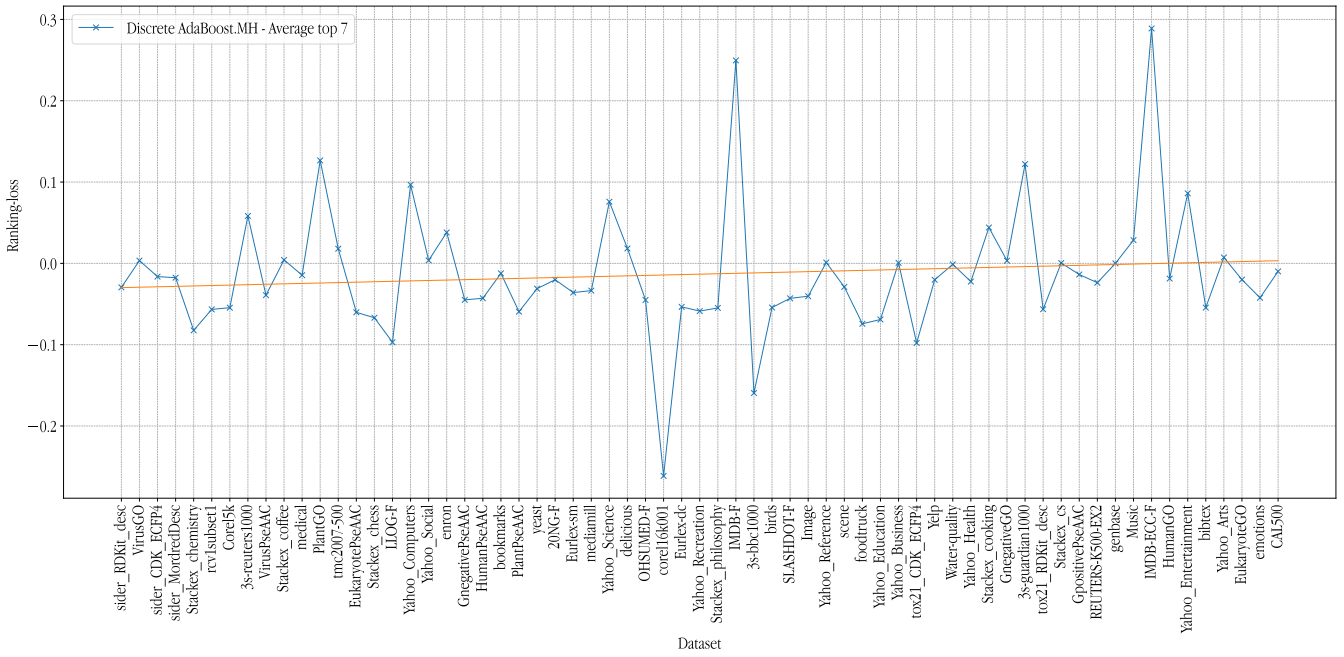


Figure 234: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

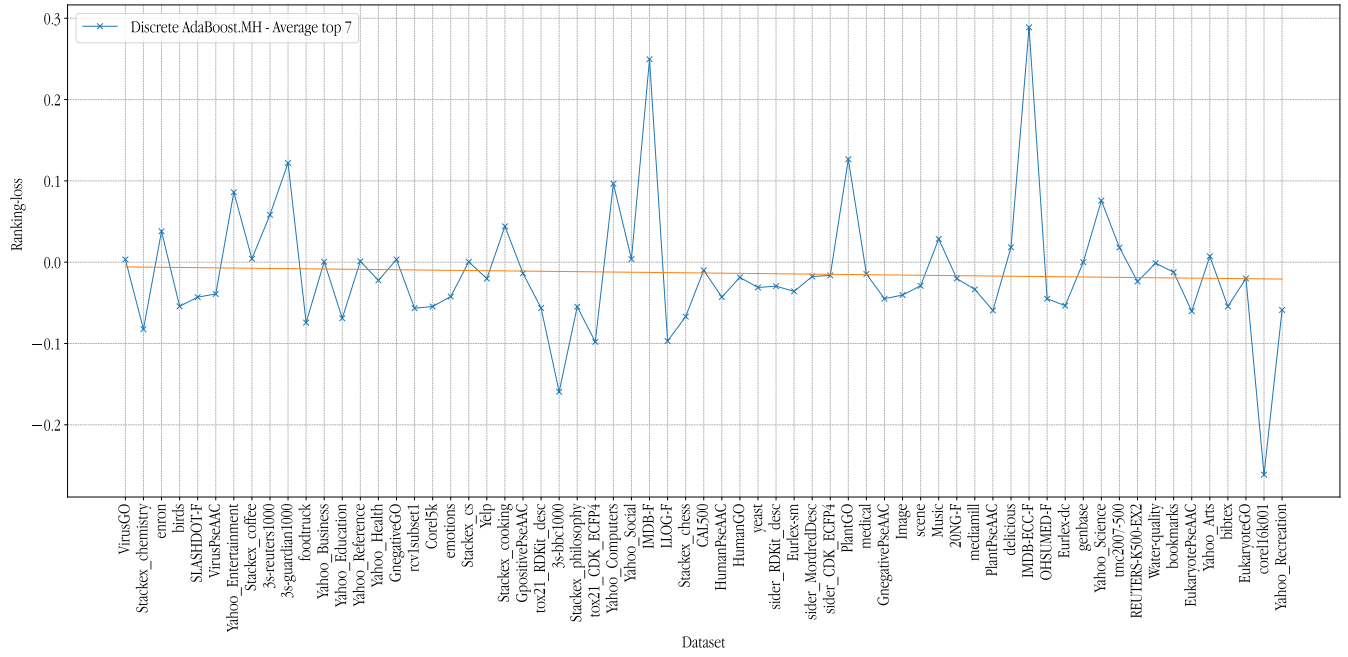


Figure 235: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

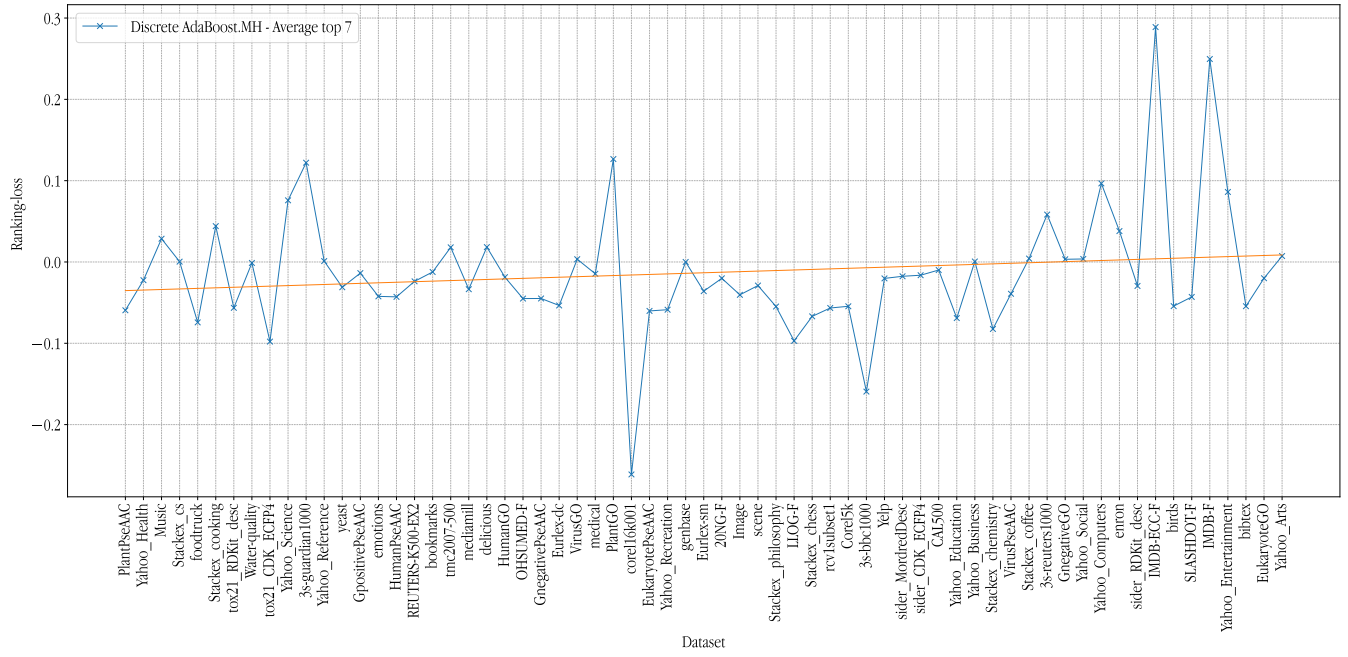


Figure 236: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

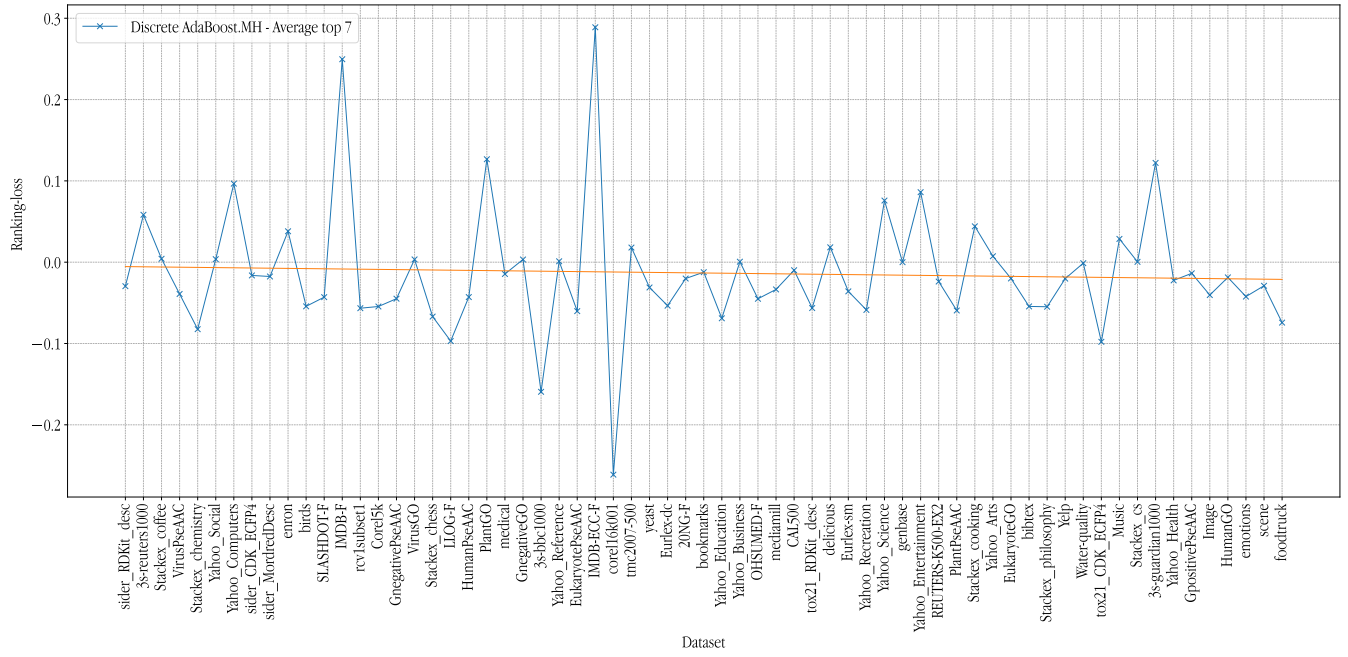


Figure 237: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

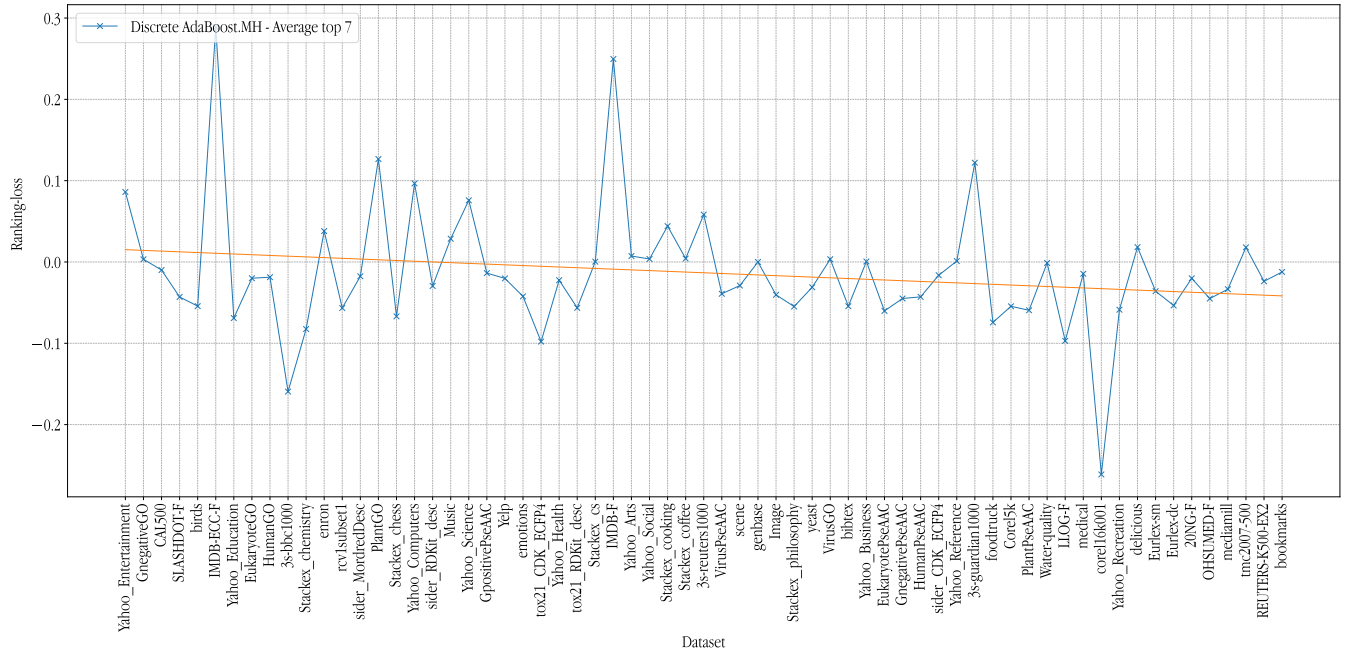


Figure 238: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

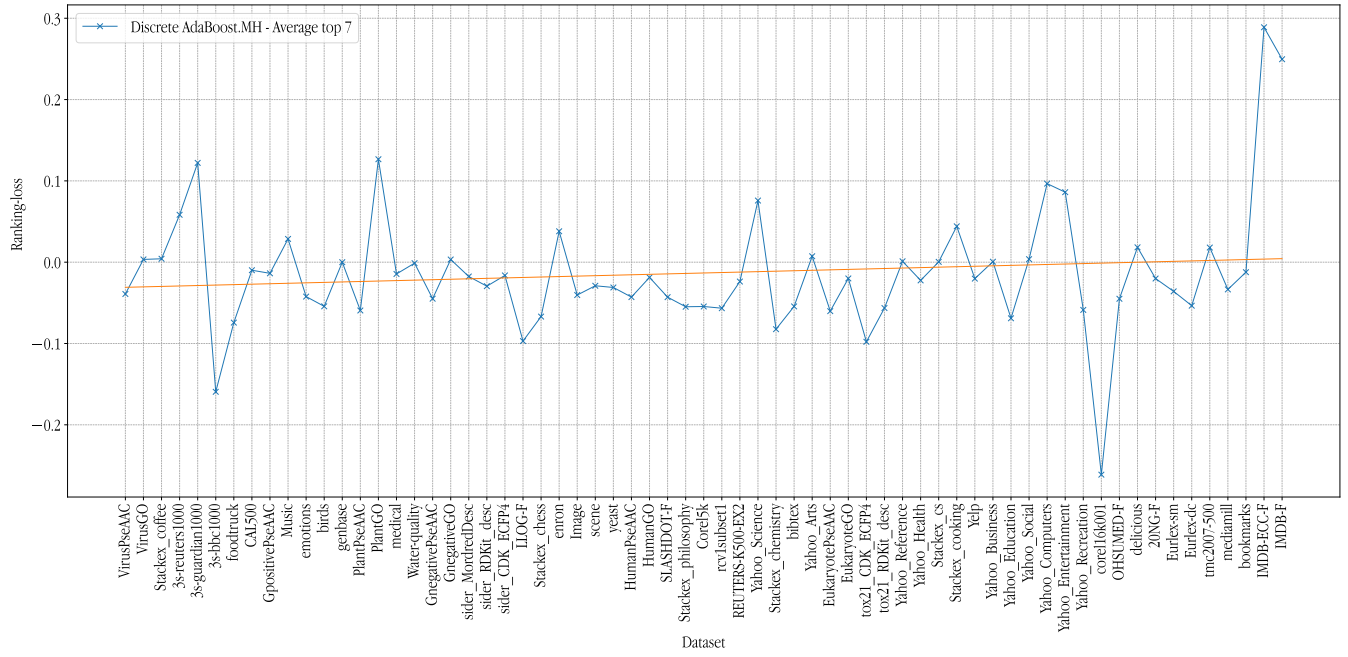


Figure 239: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

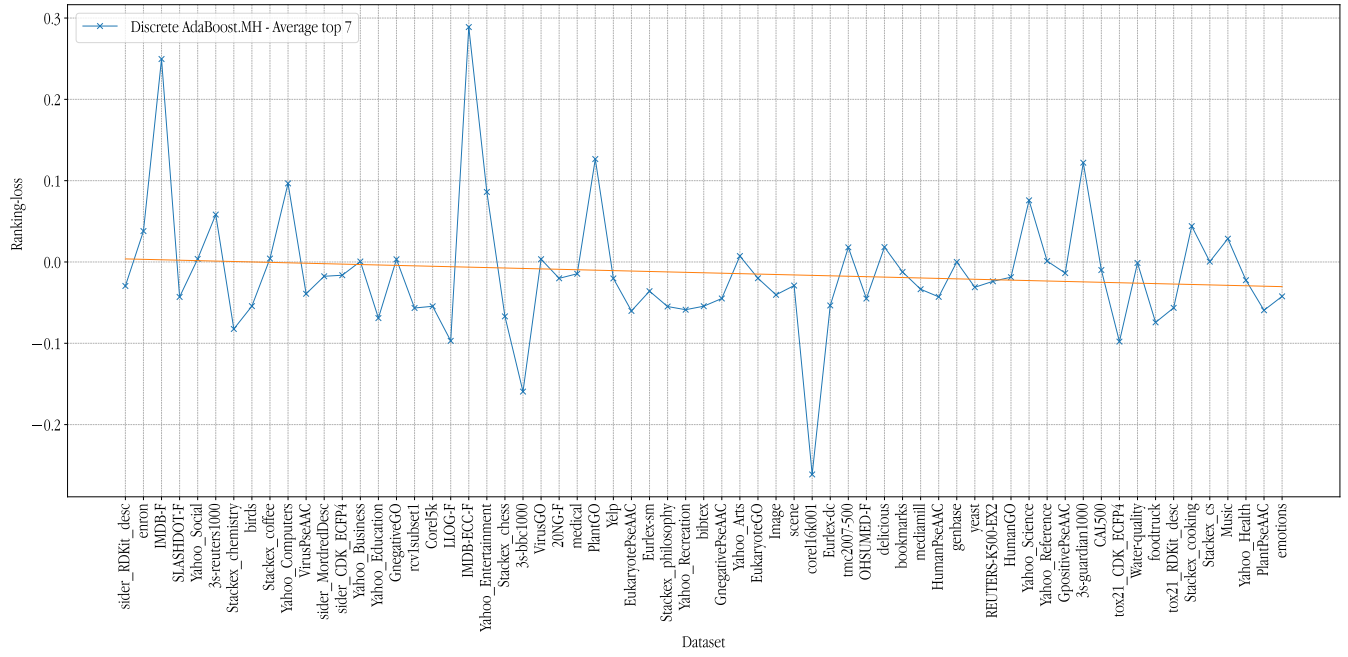


Figure 240: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

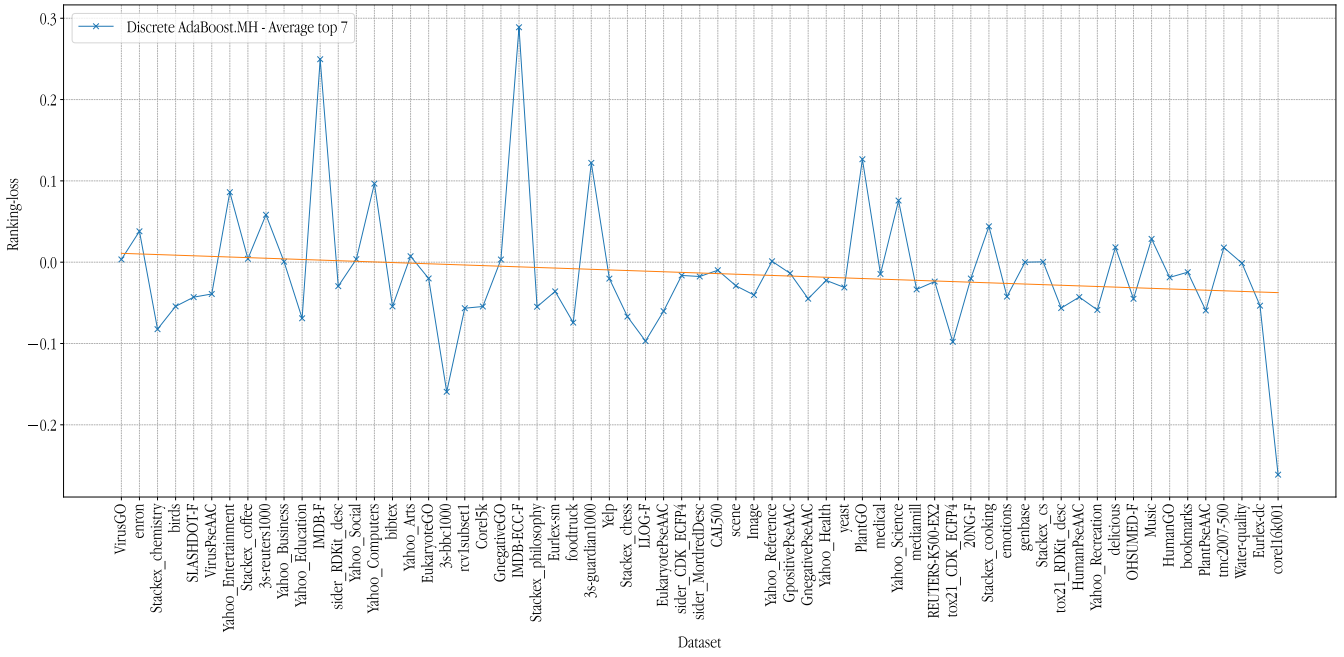


Figure 241: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

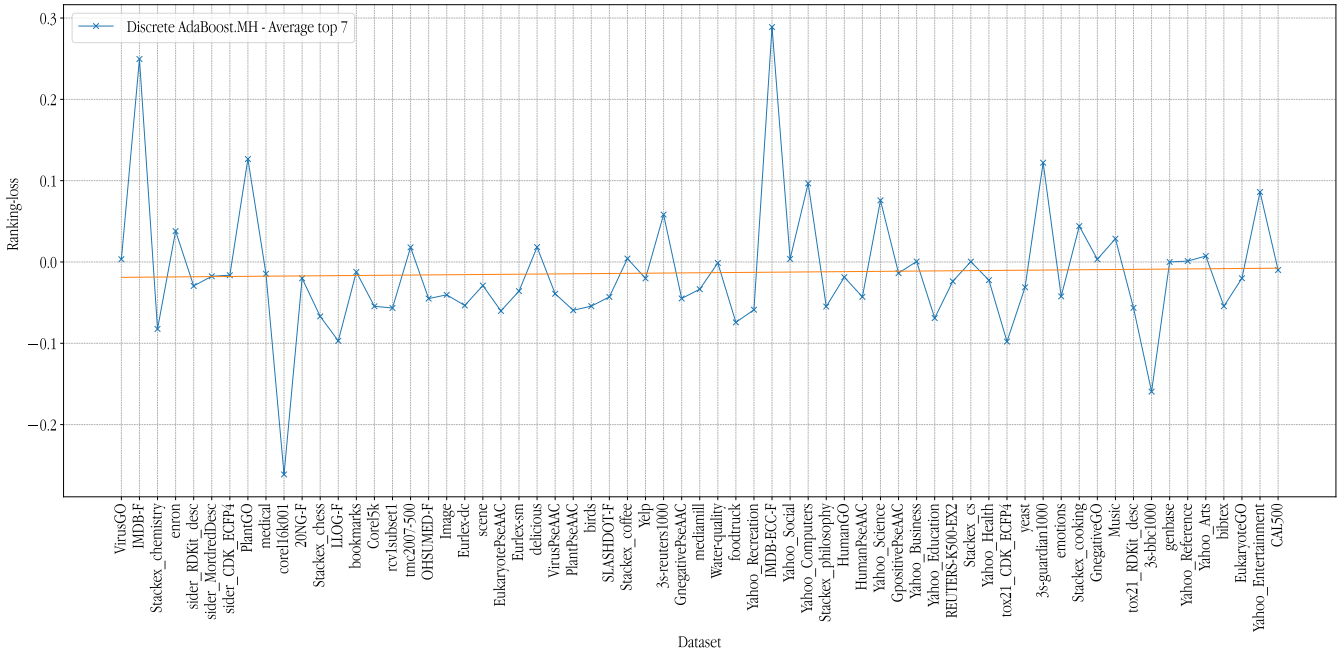


Figure 242: Difference in ranking loss performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

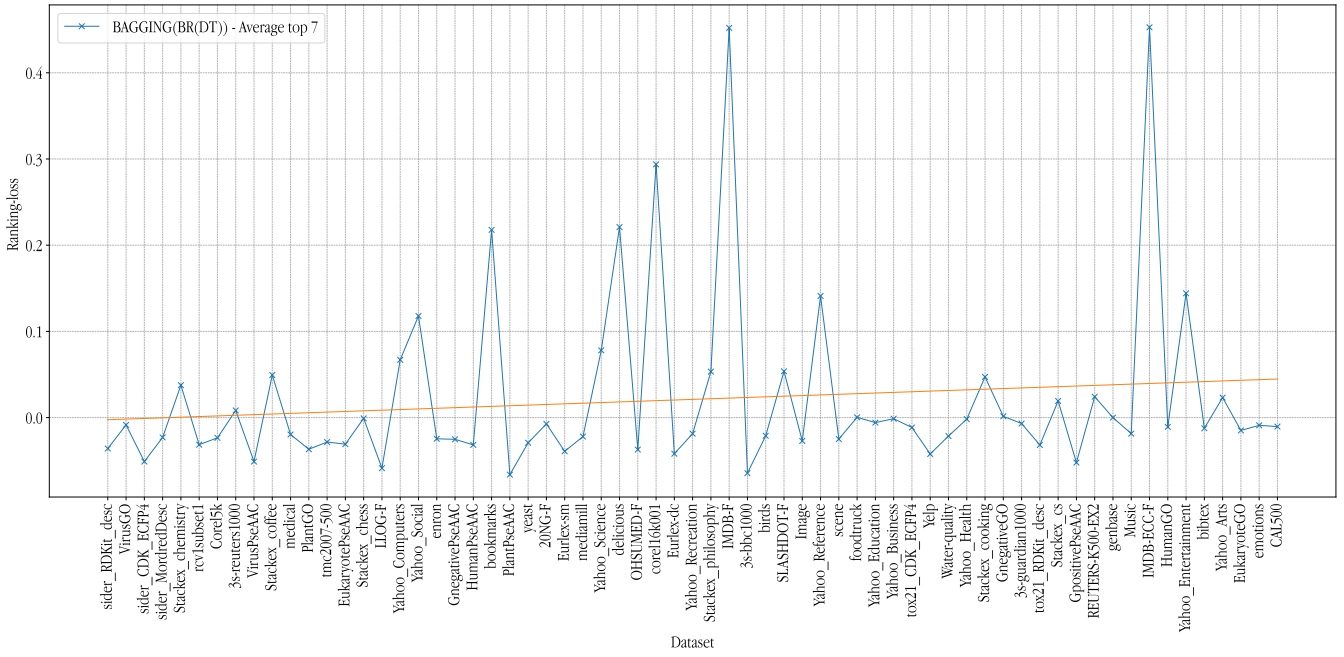


Figure 243: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

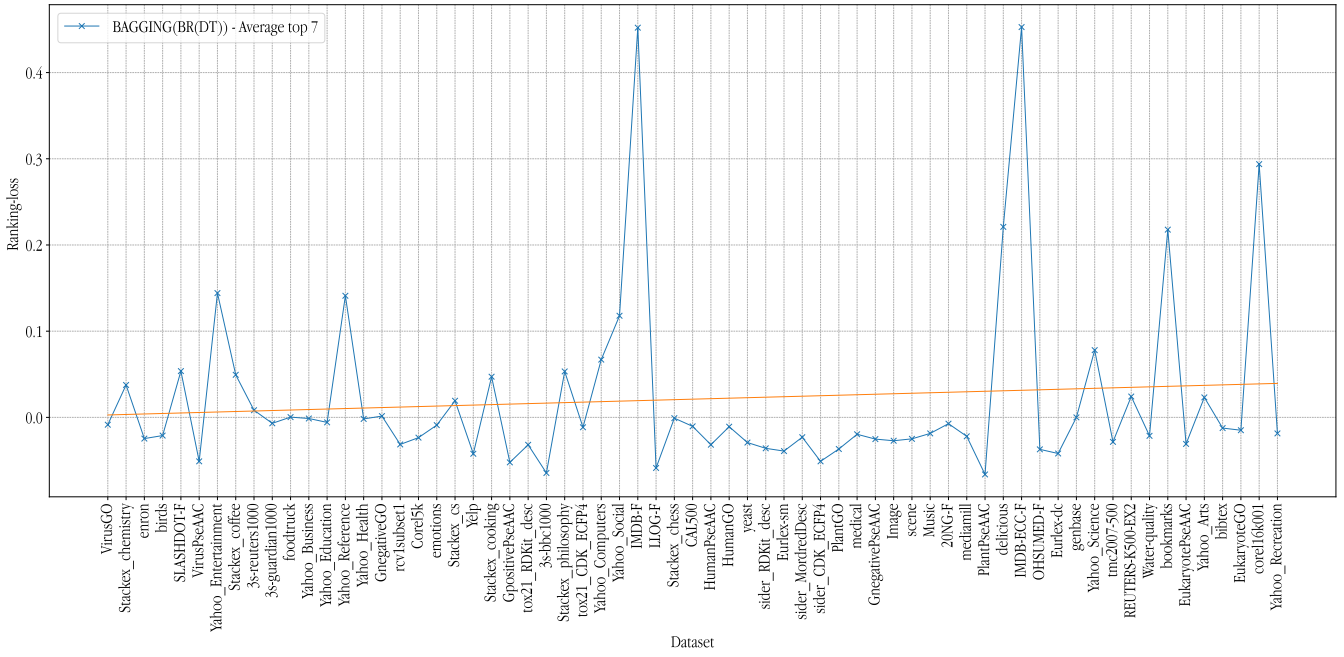


Figure 244: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

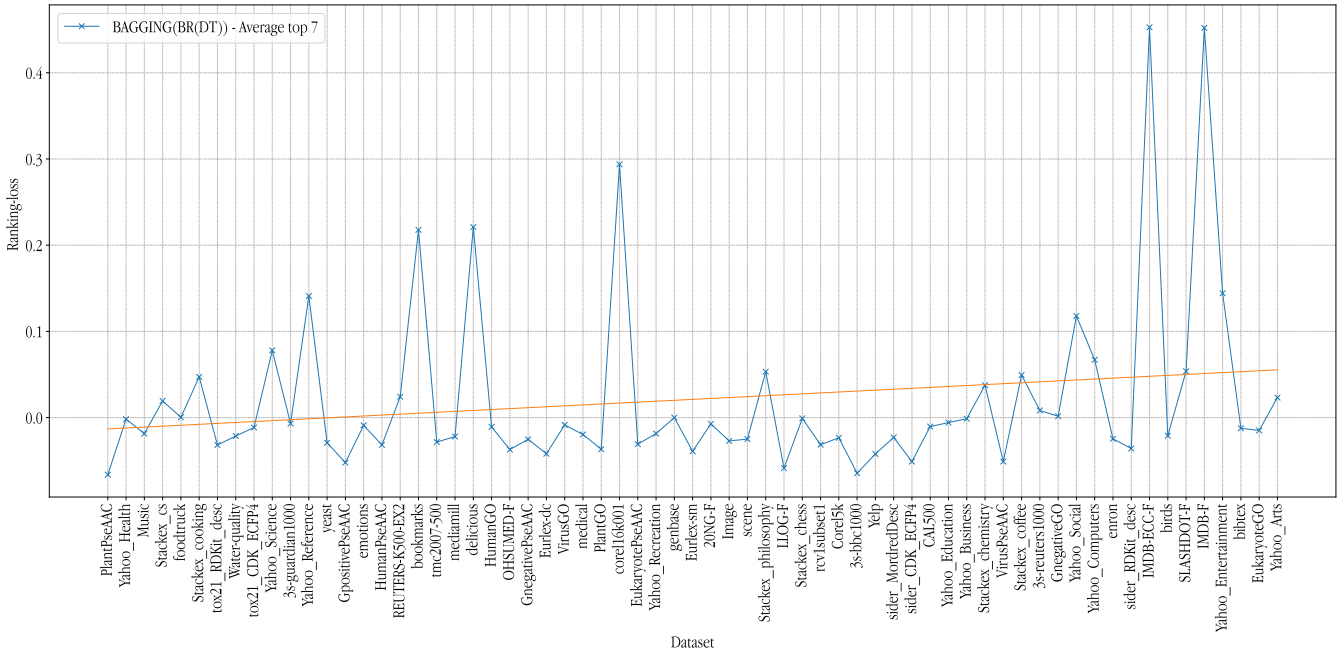


Figure 245: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

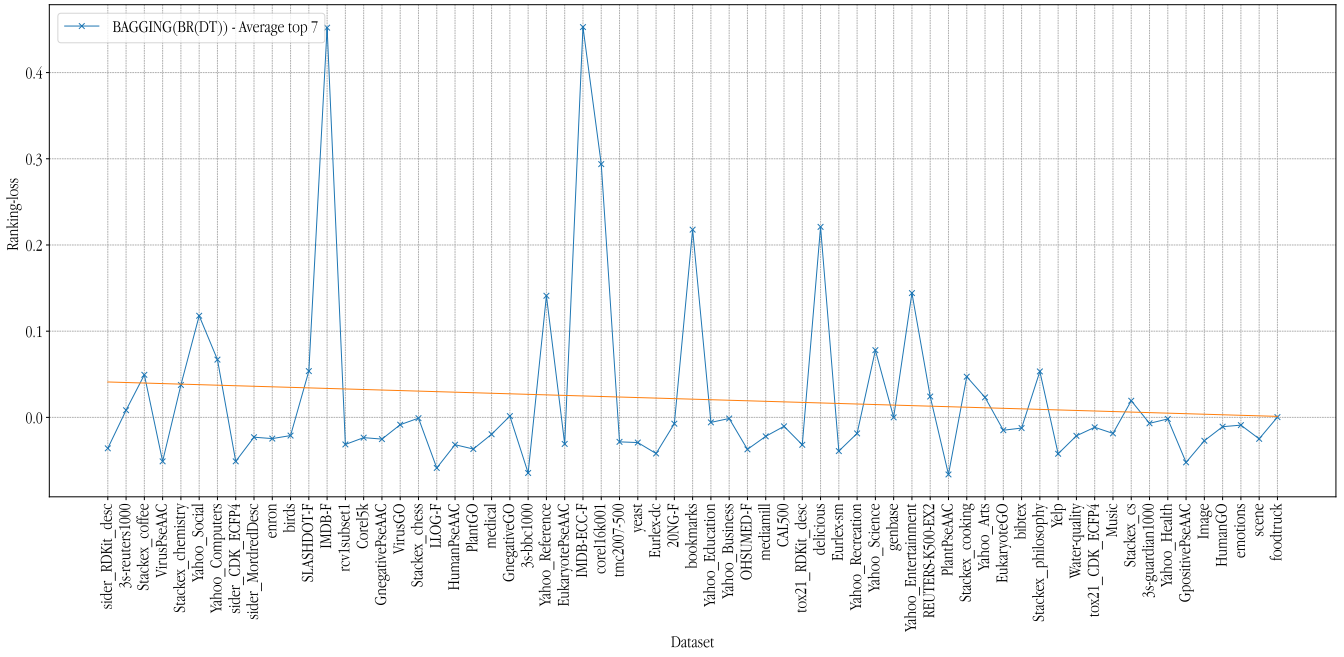


Figure 246: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

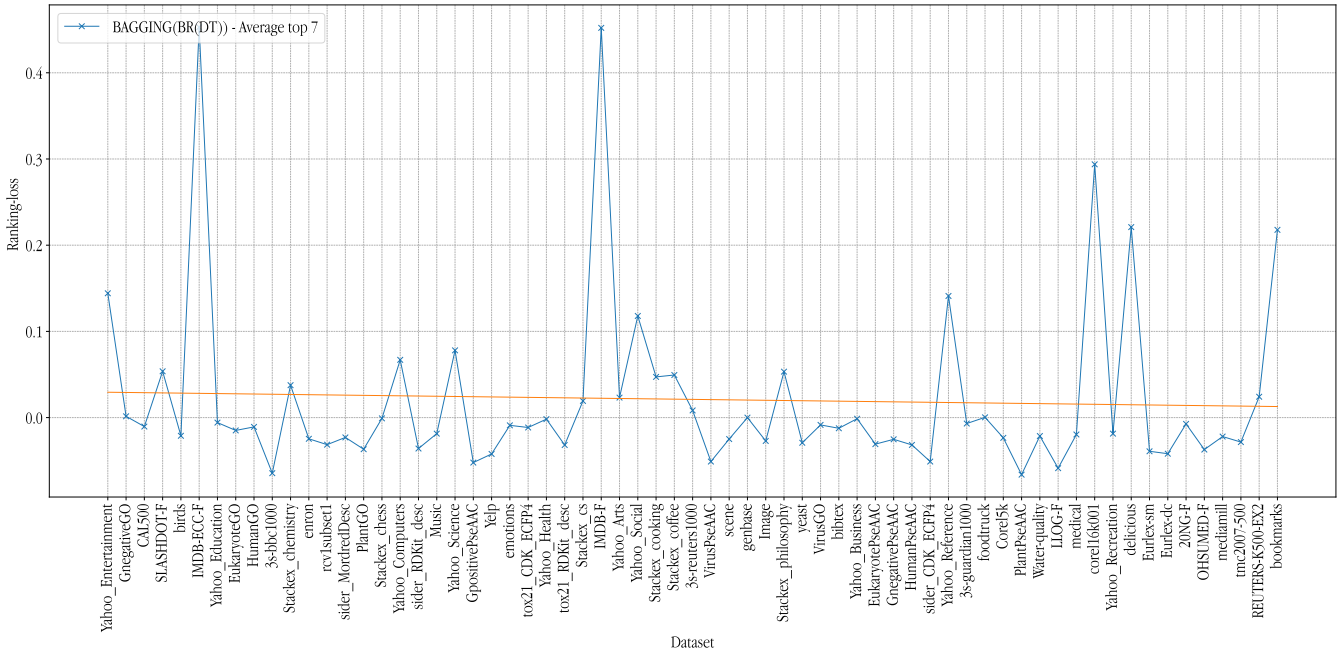


Figure 247: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

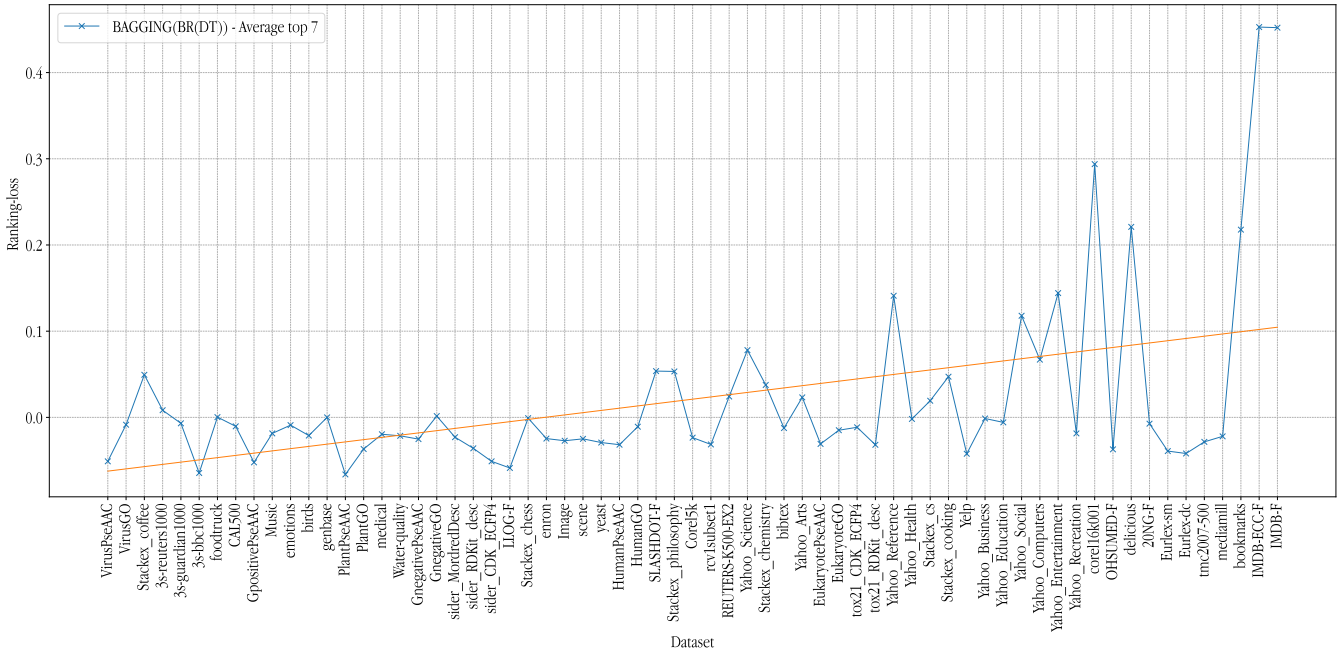


Figure 248: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

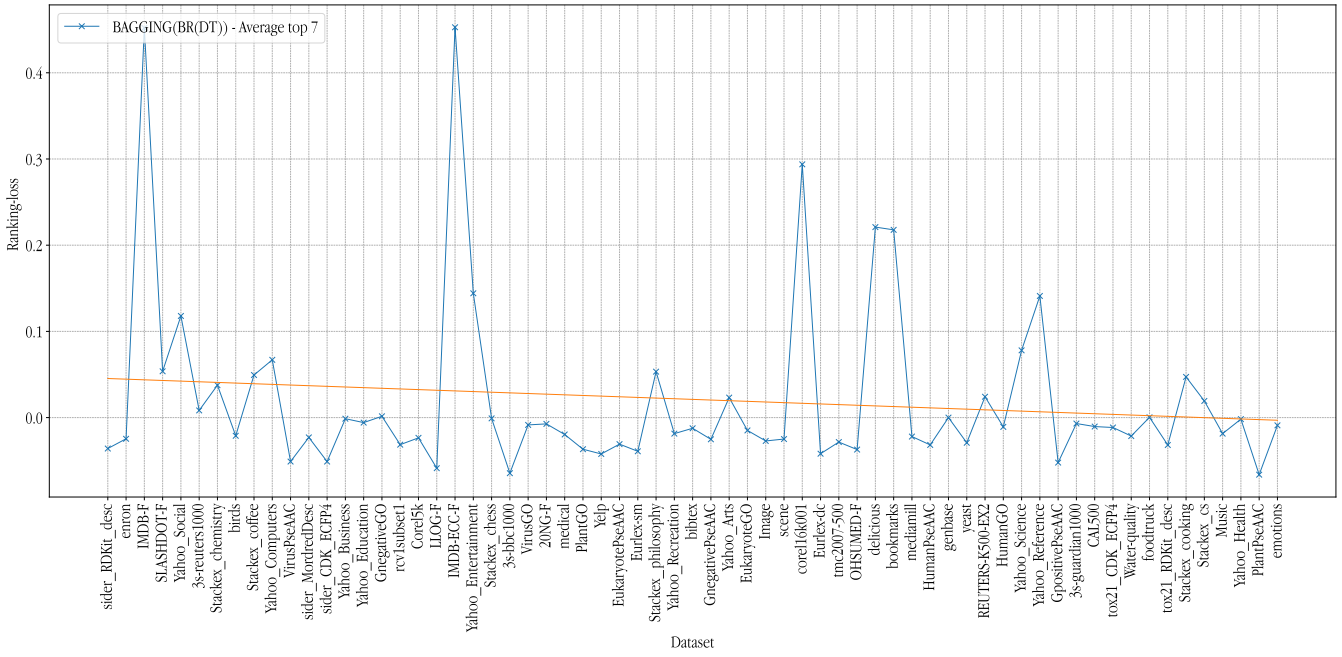


Figure 249: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

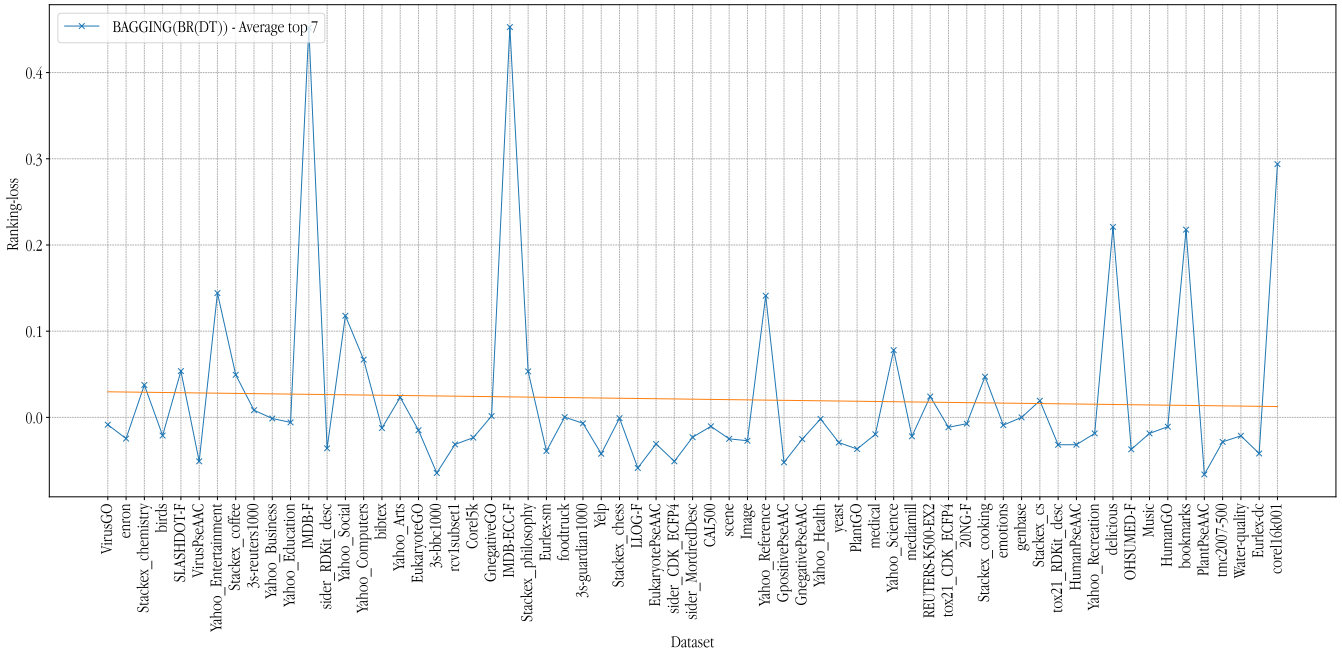


Figure 250: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

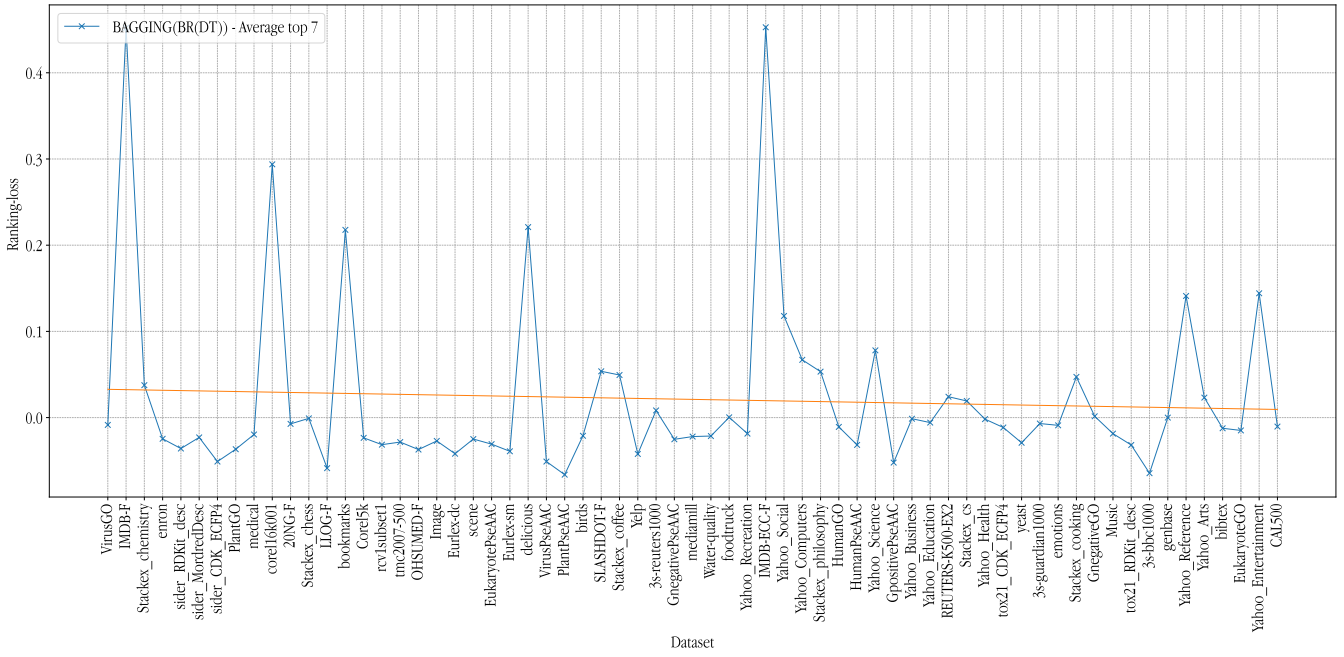


Figure 251: Difference in ranking loss performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

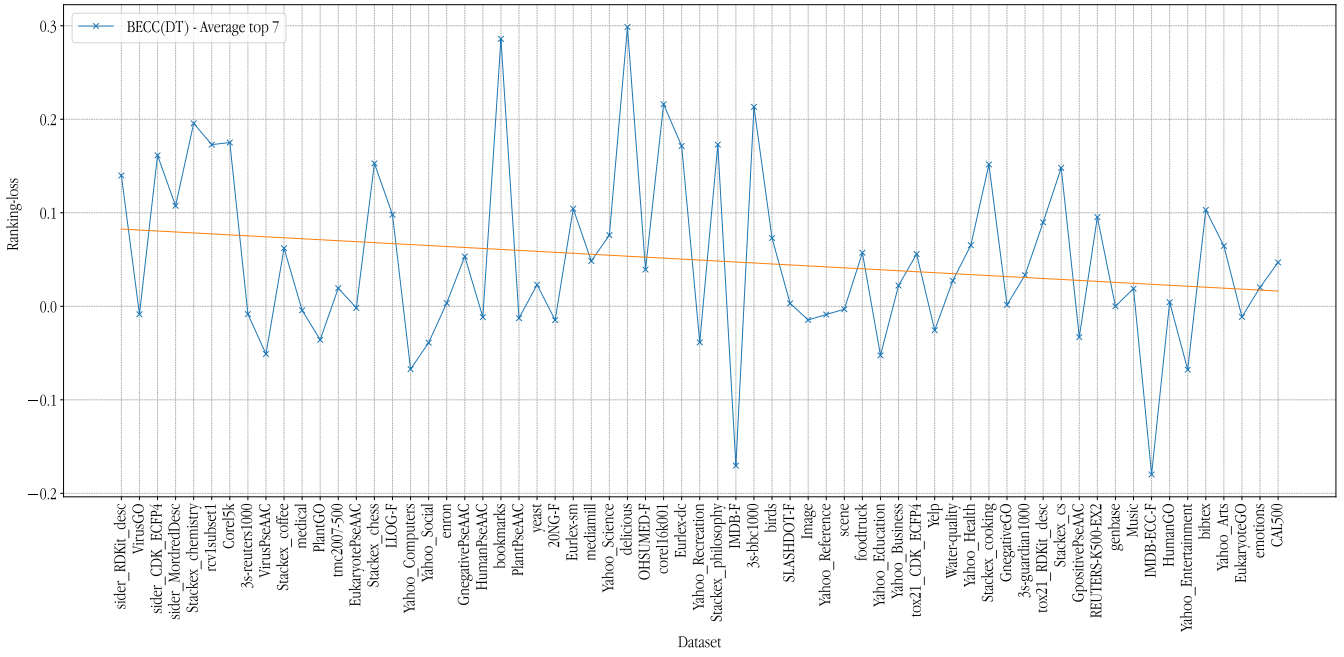


Figure 252: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

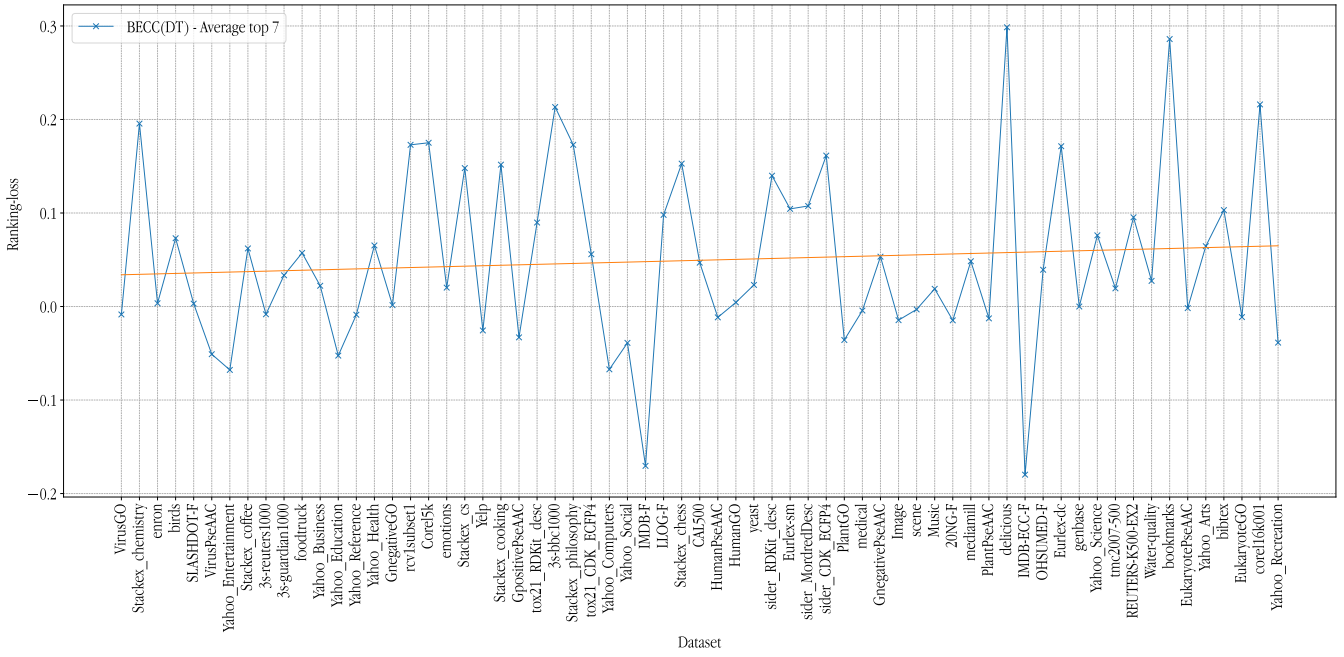


Figure 253: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

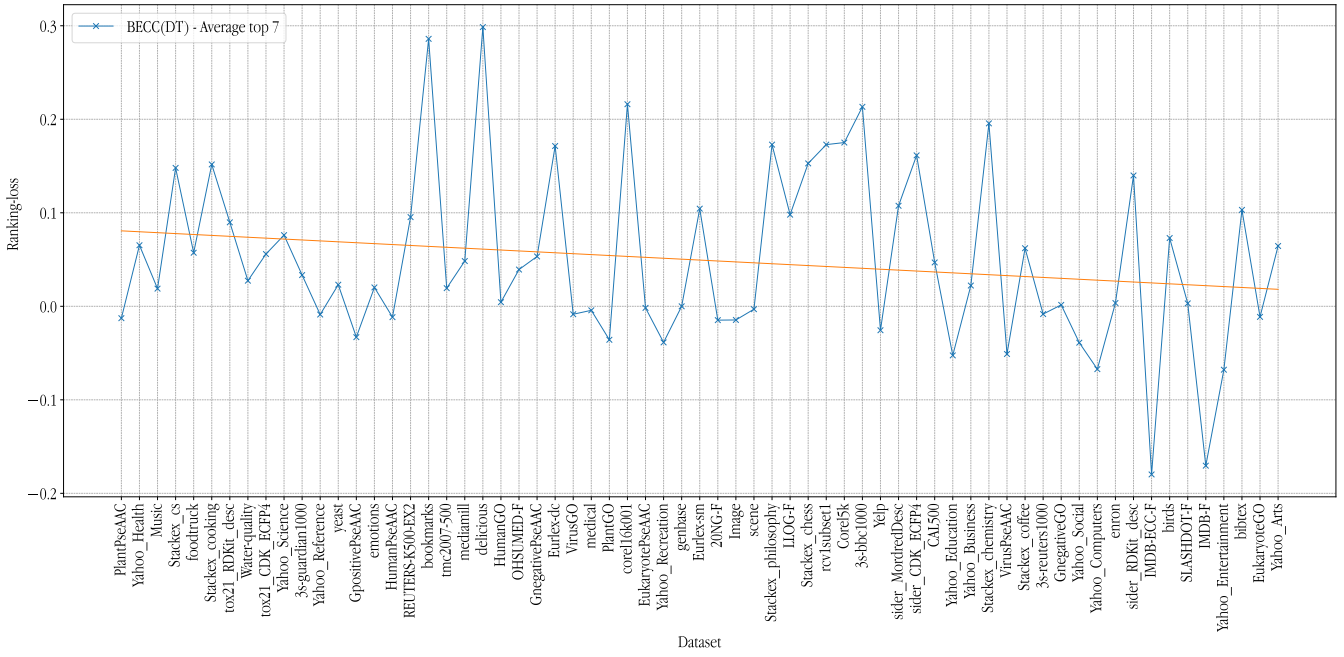


Figure 254: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

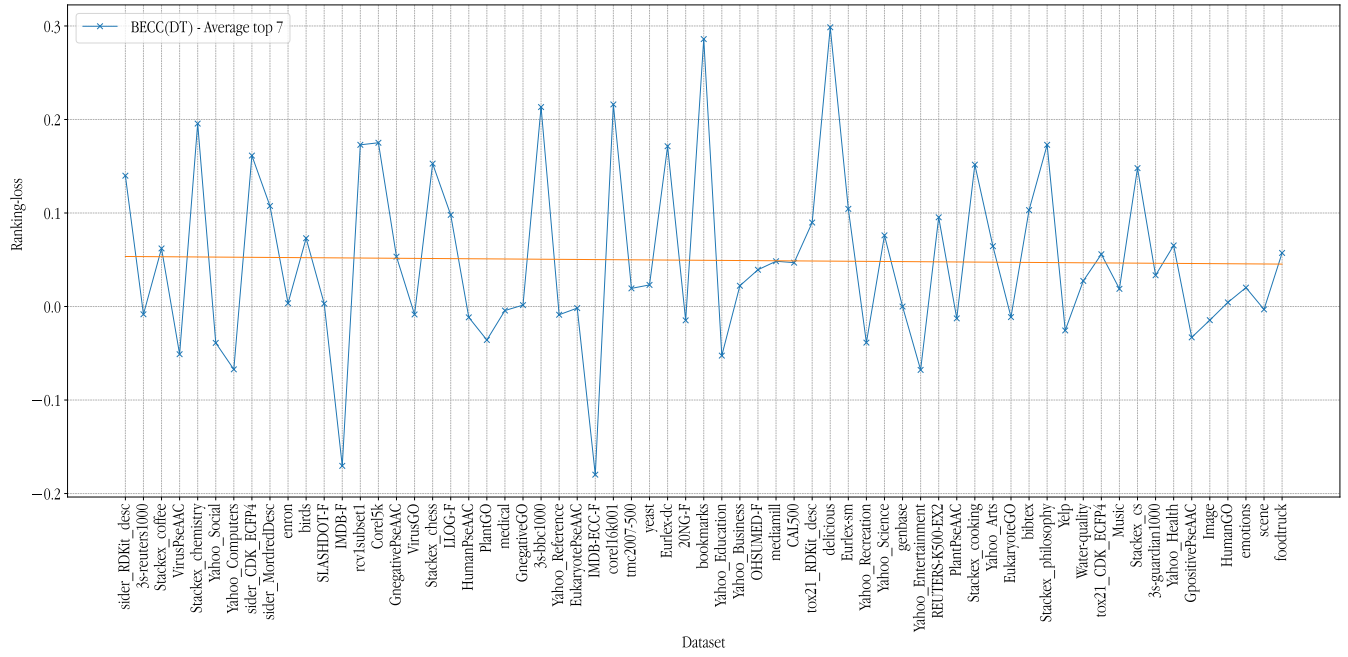


Figure 255: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

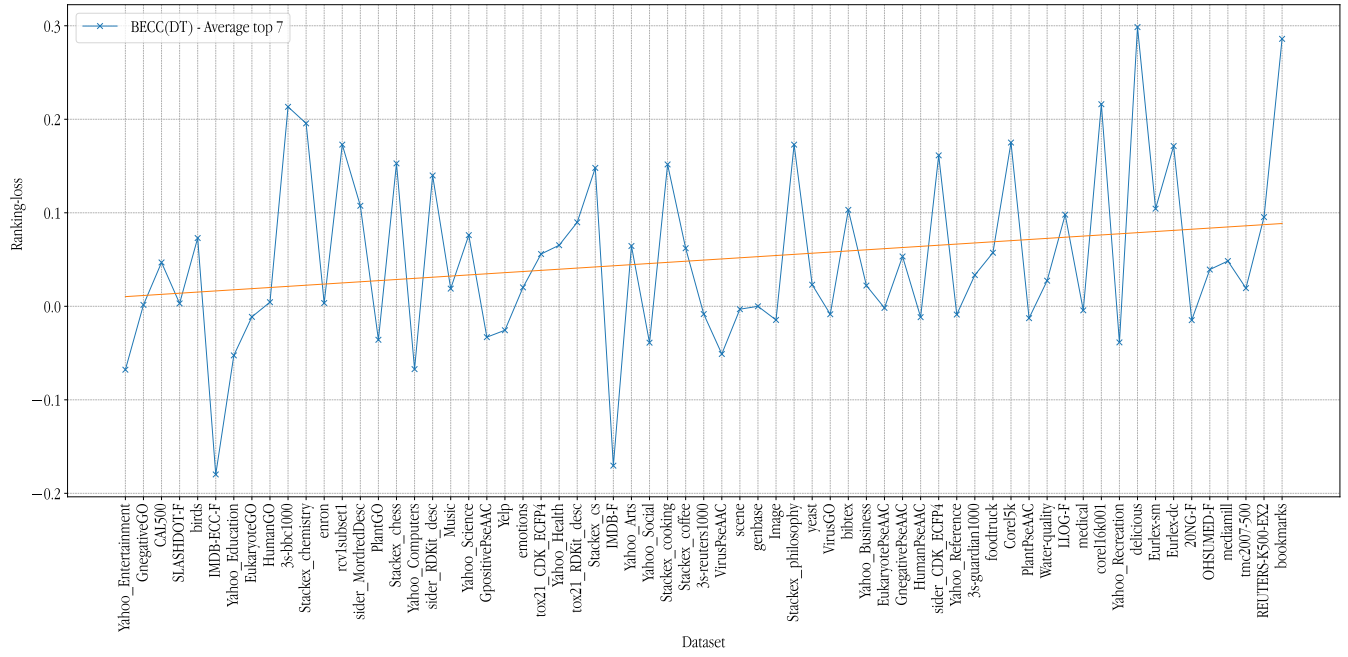


Figure 256: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

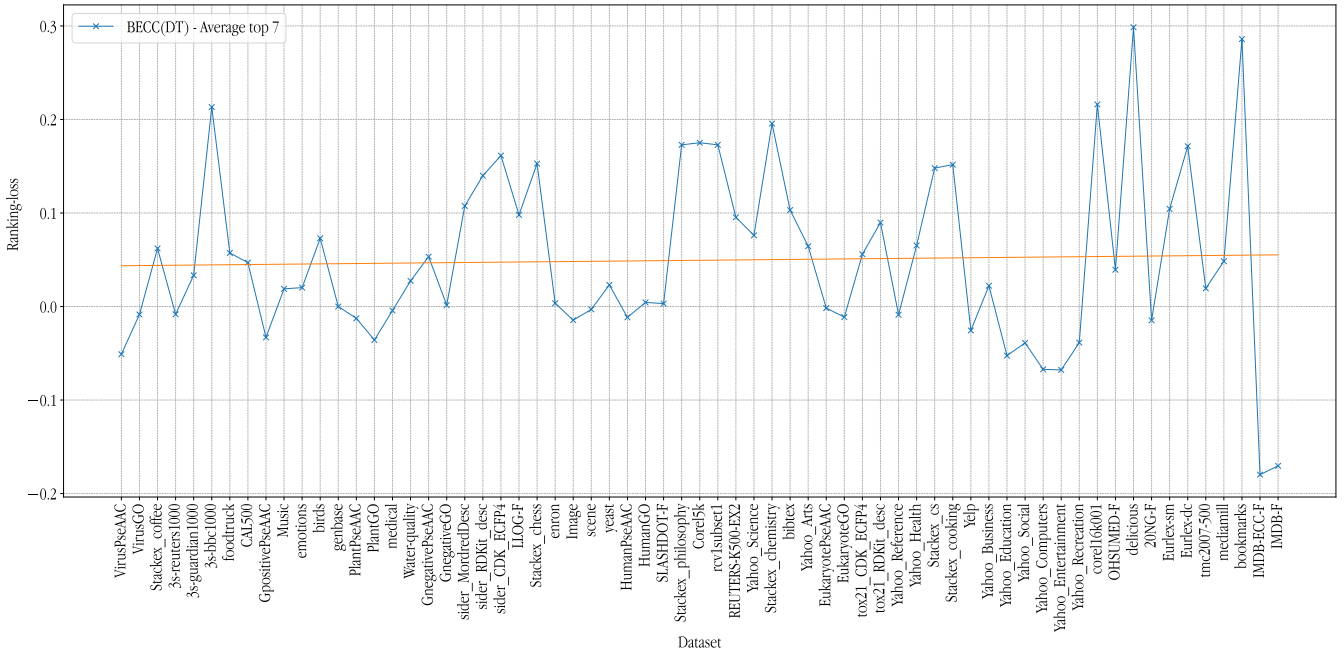


Figure 257: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

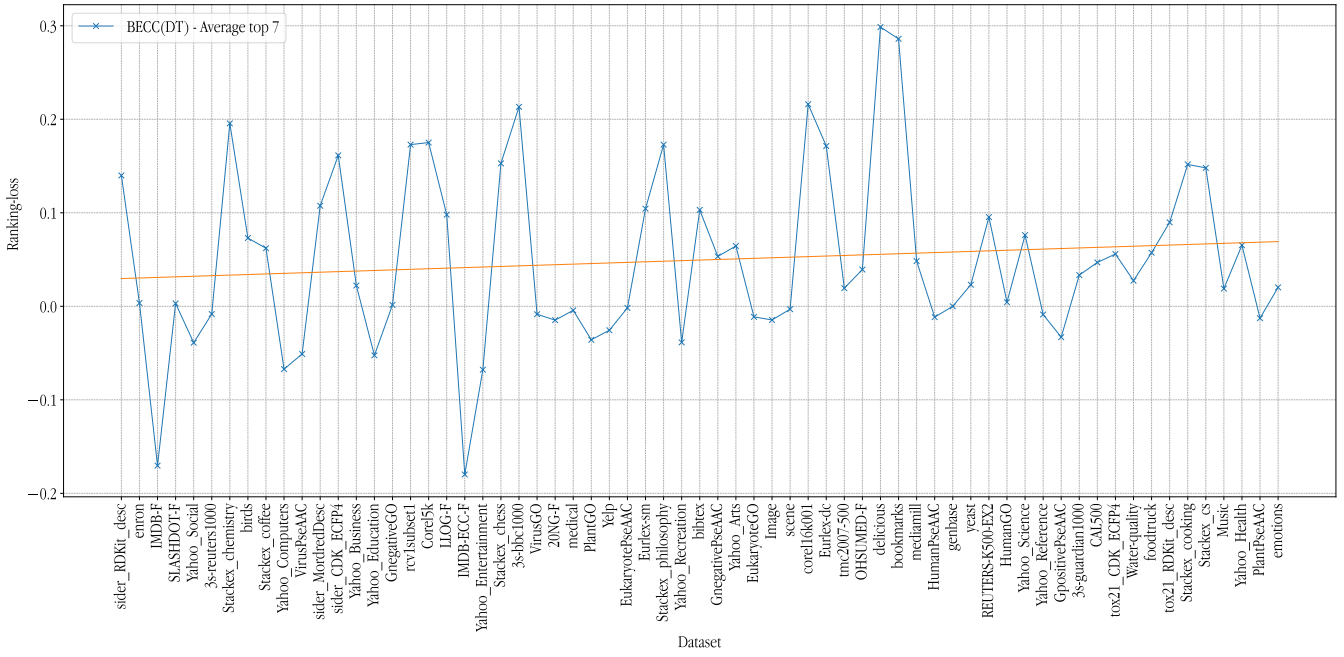


Figure 258: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

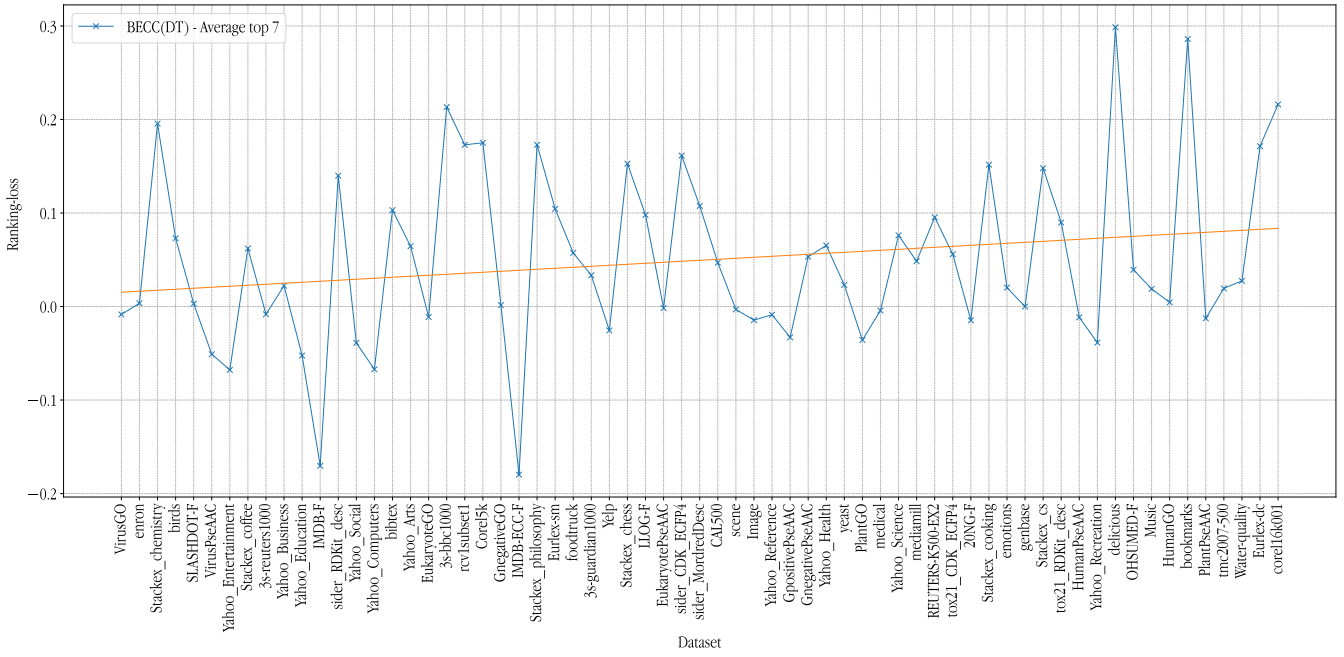


Figure 259: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

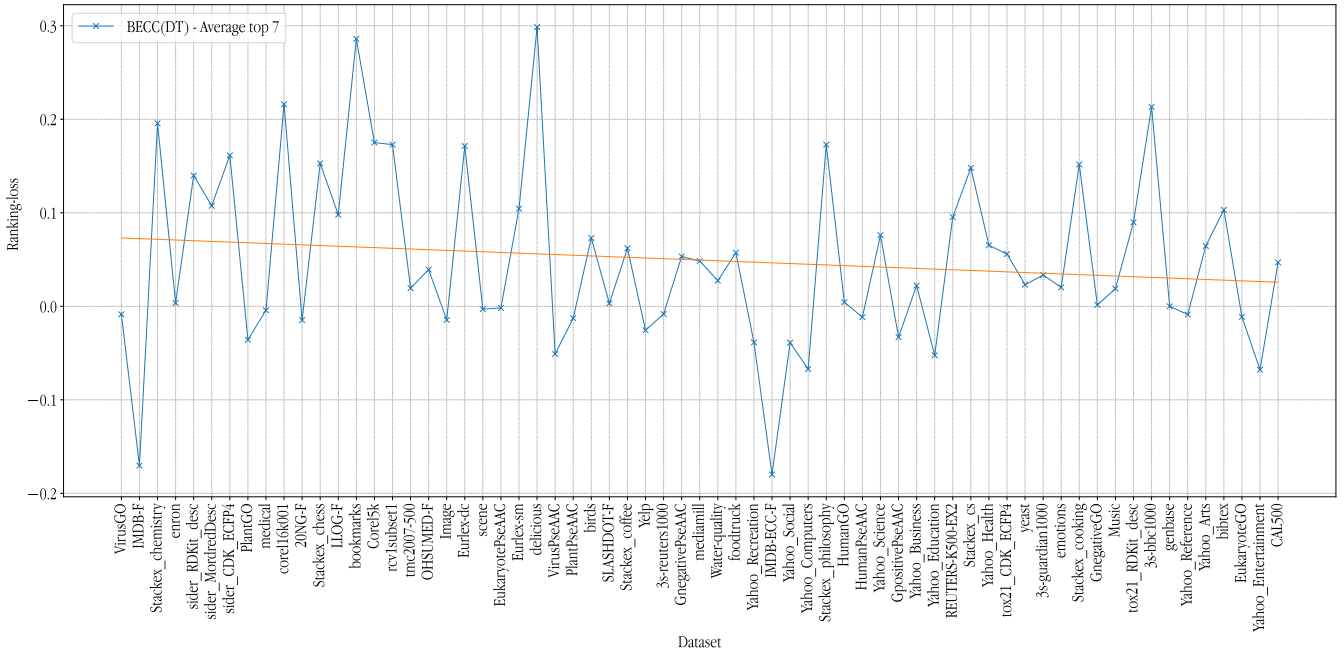


Figure 260: Difference in ranking loss performance between BECC and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

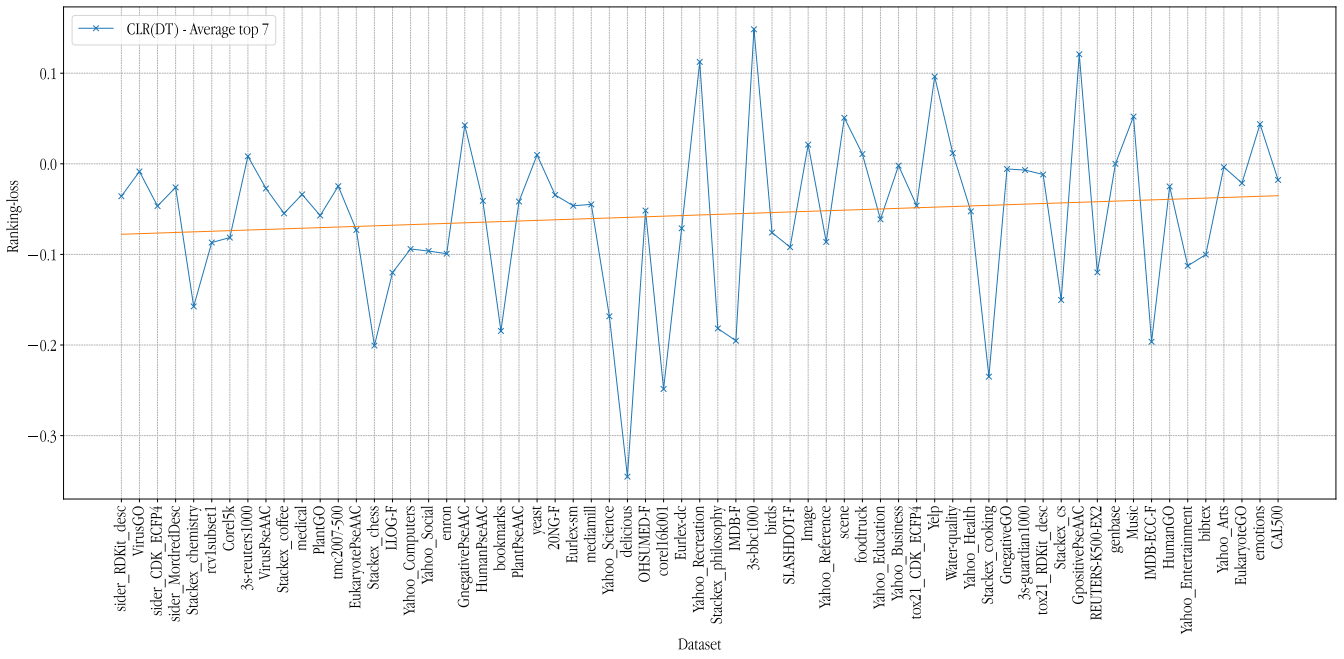


Figure 261: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

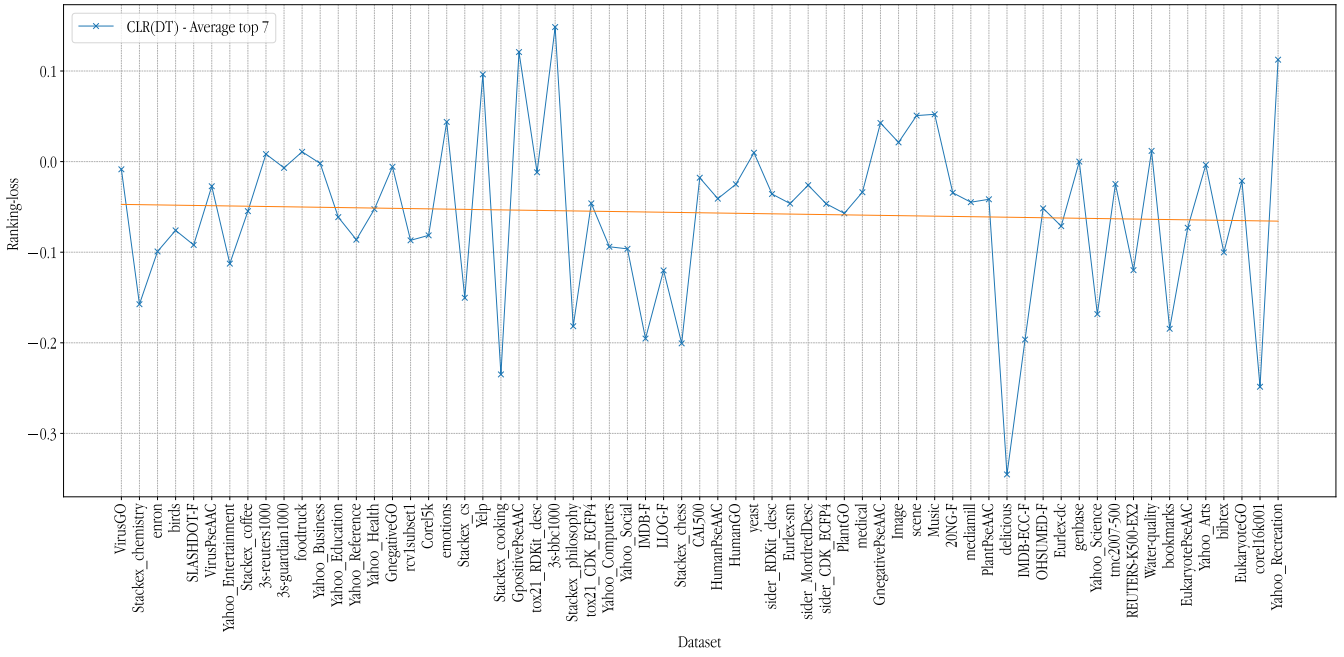


Figure 262: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

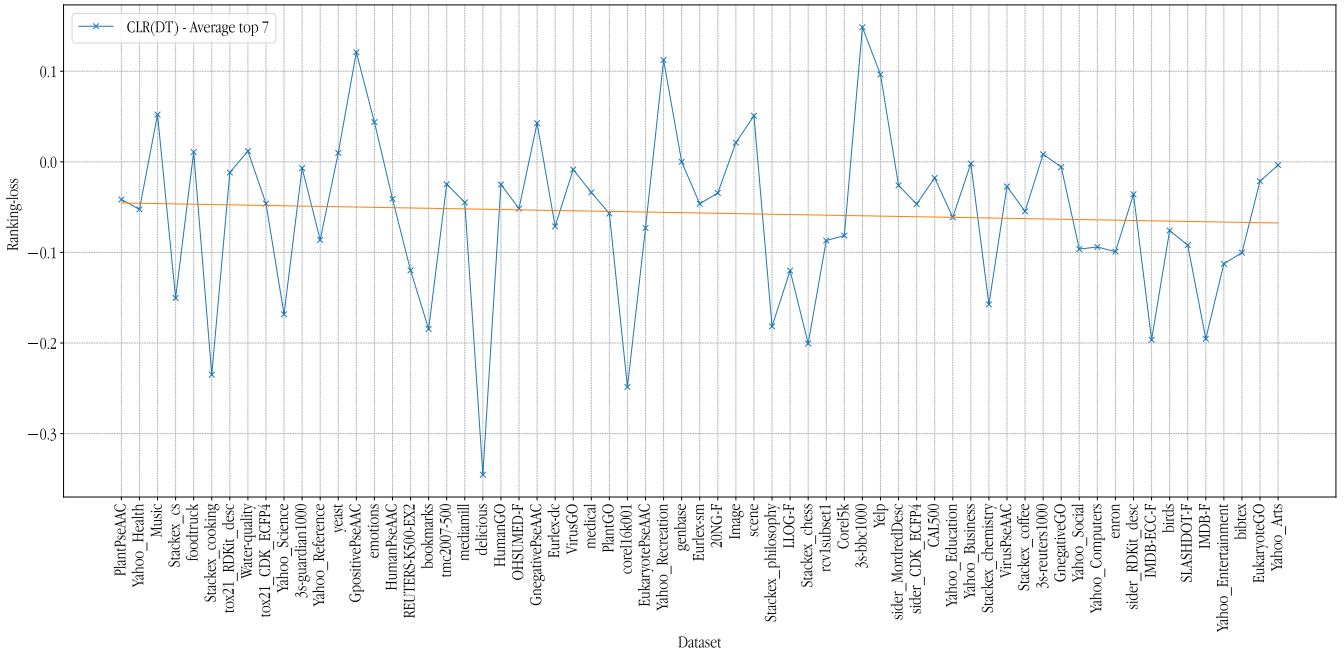


Figure 263: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

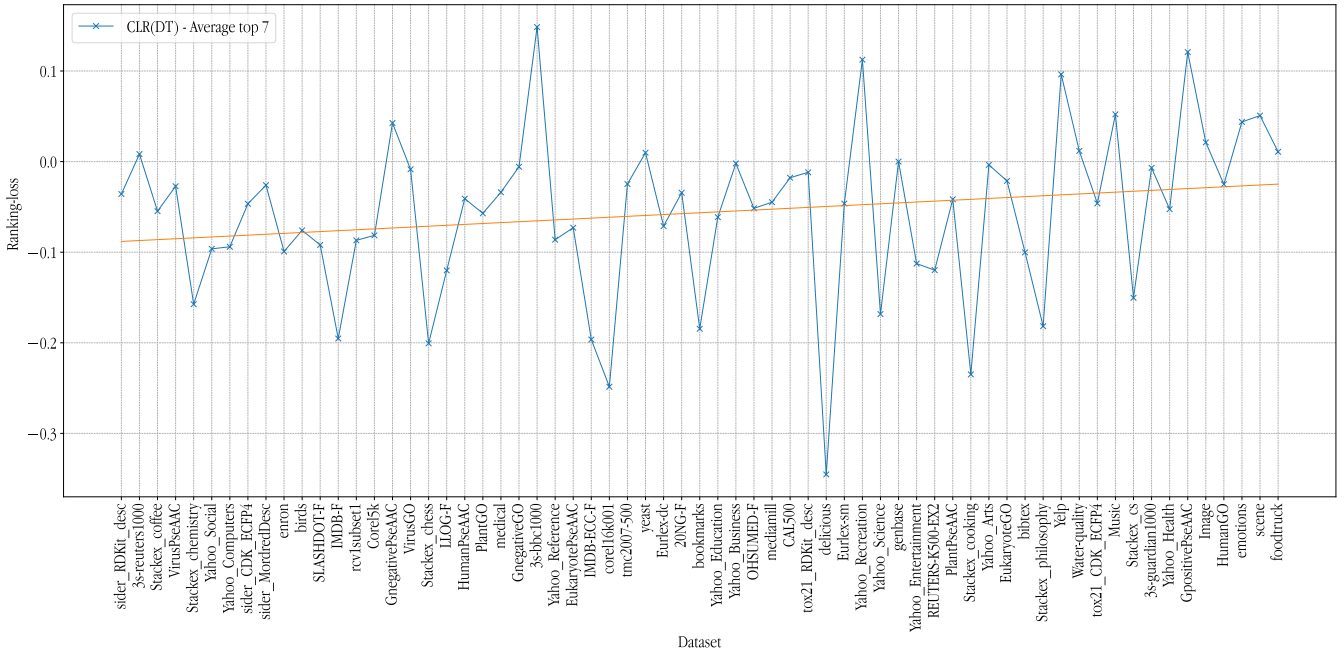


Figure 264: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

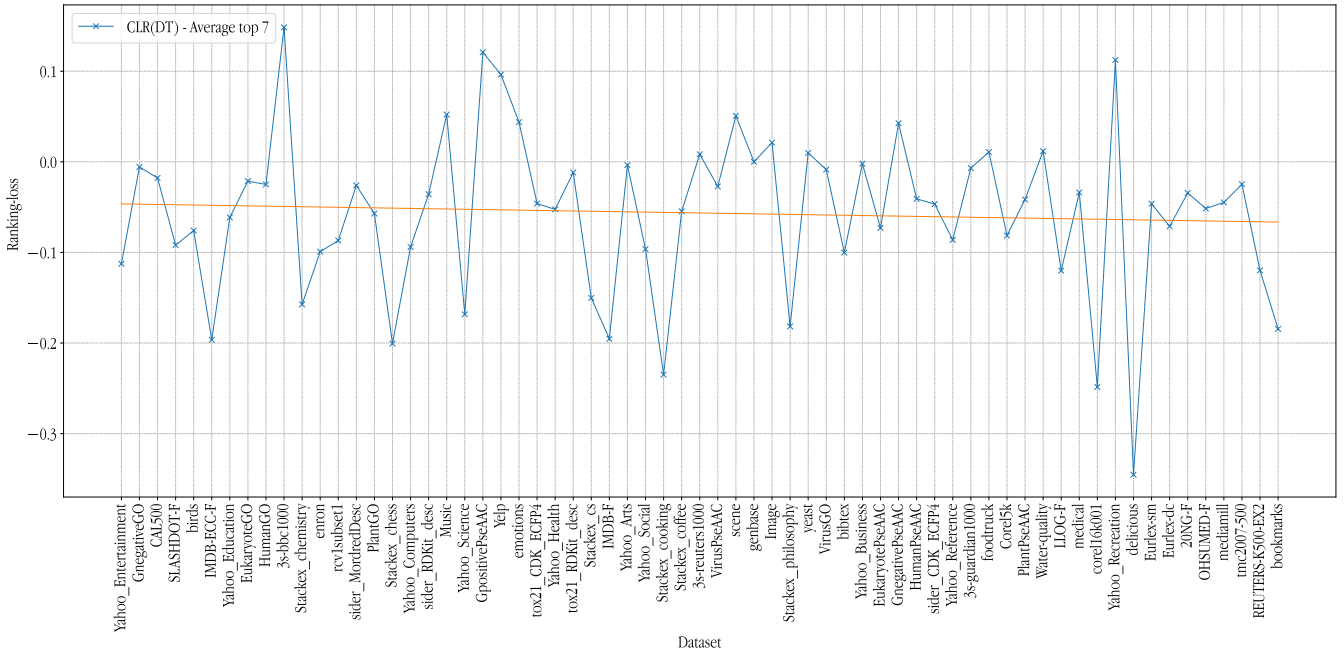


Figure 265: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

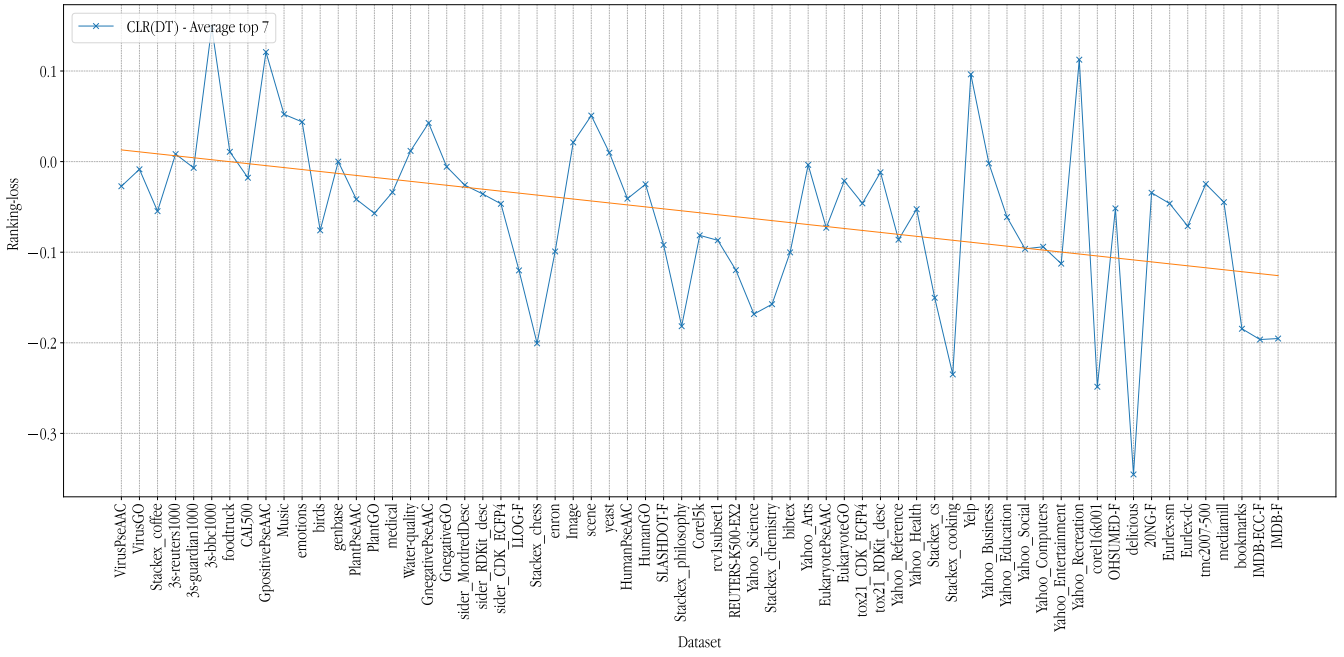


Figure 266: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

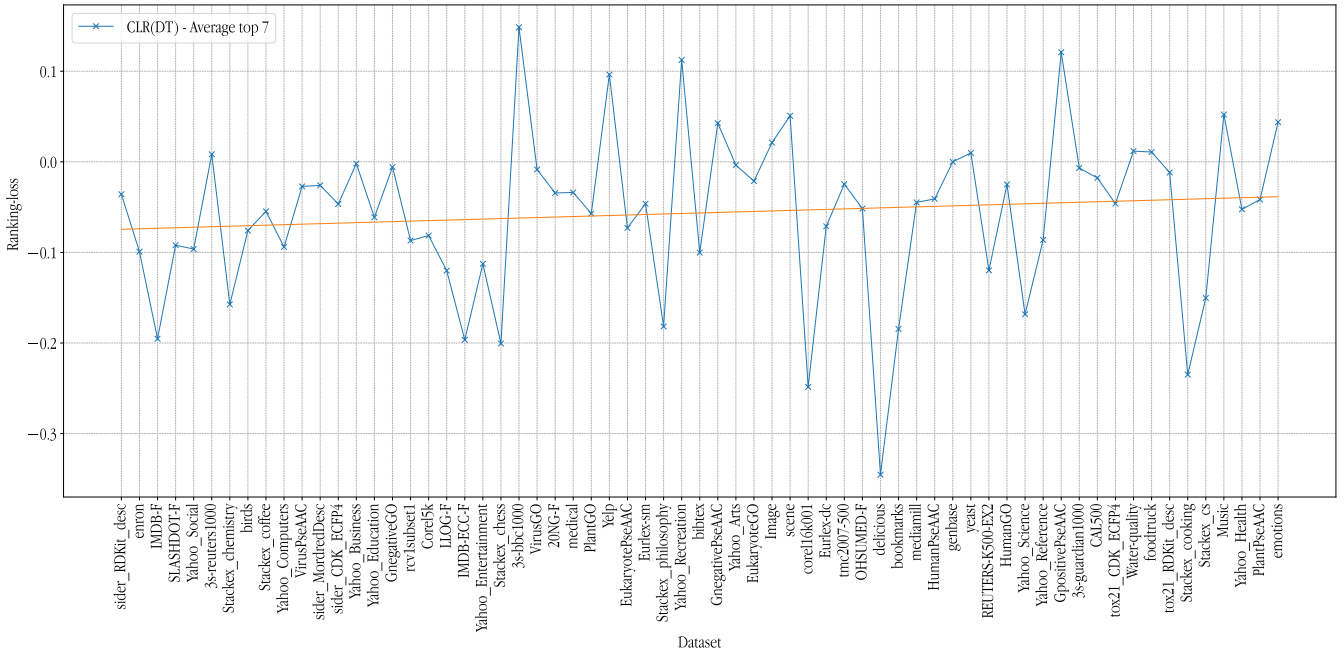


Figure 267: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

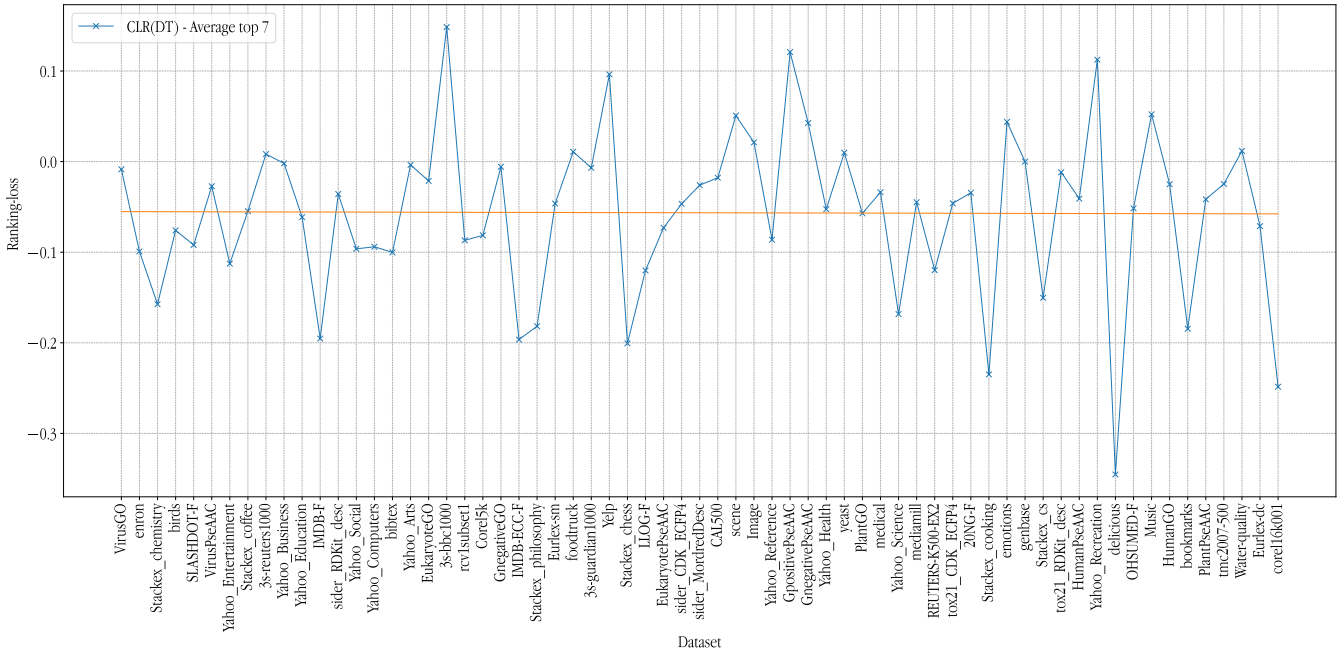


Figure 268: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

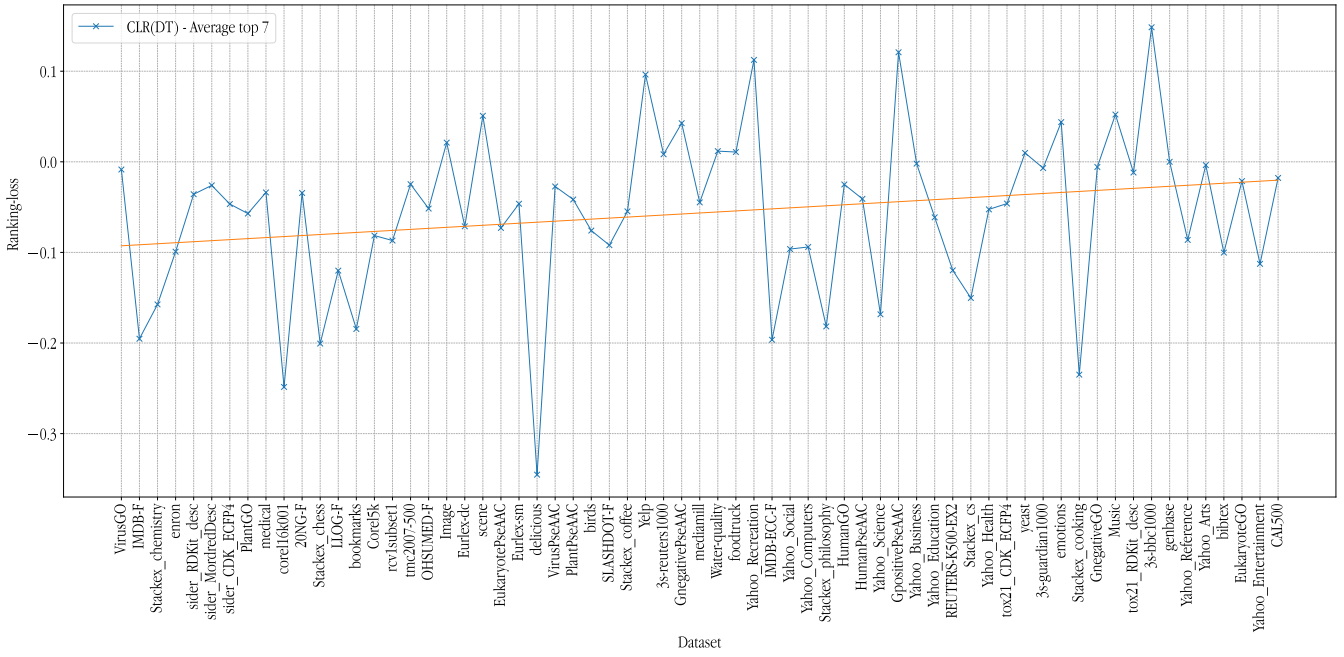


Figure 269: Difference in ranking loss performance between CLR(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

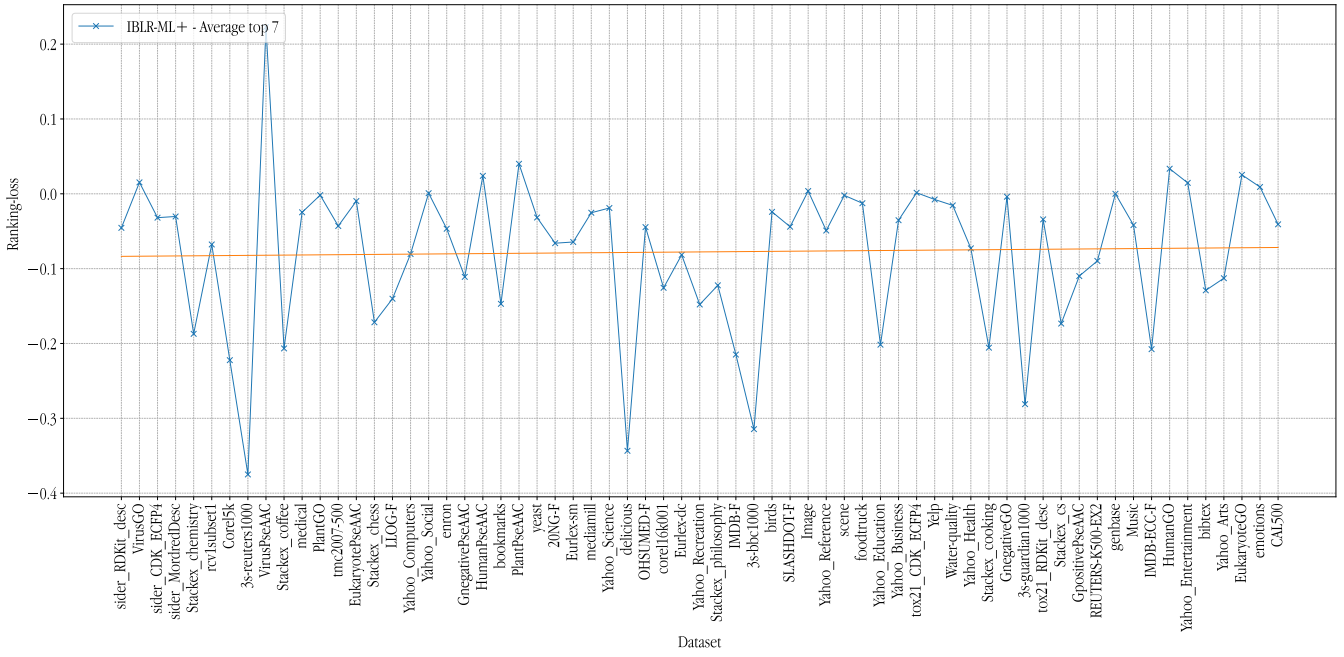


Figure 270: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

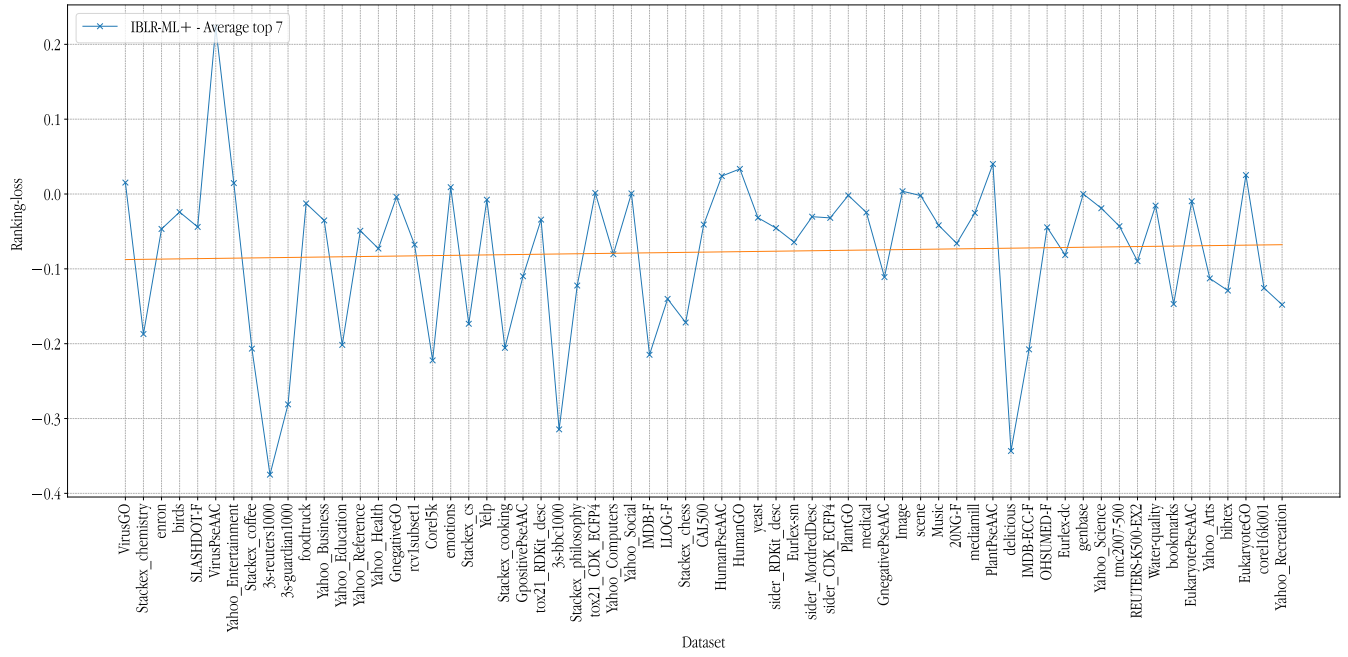


Figure 271: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

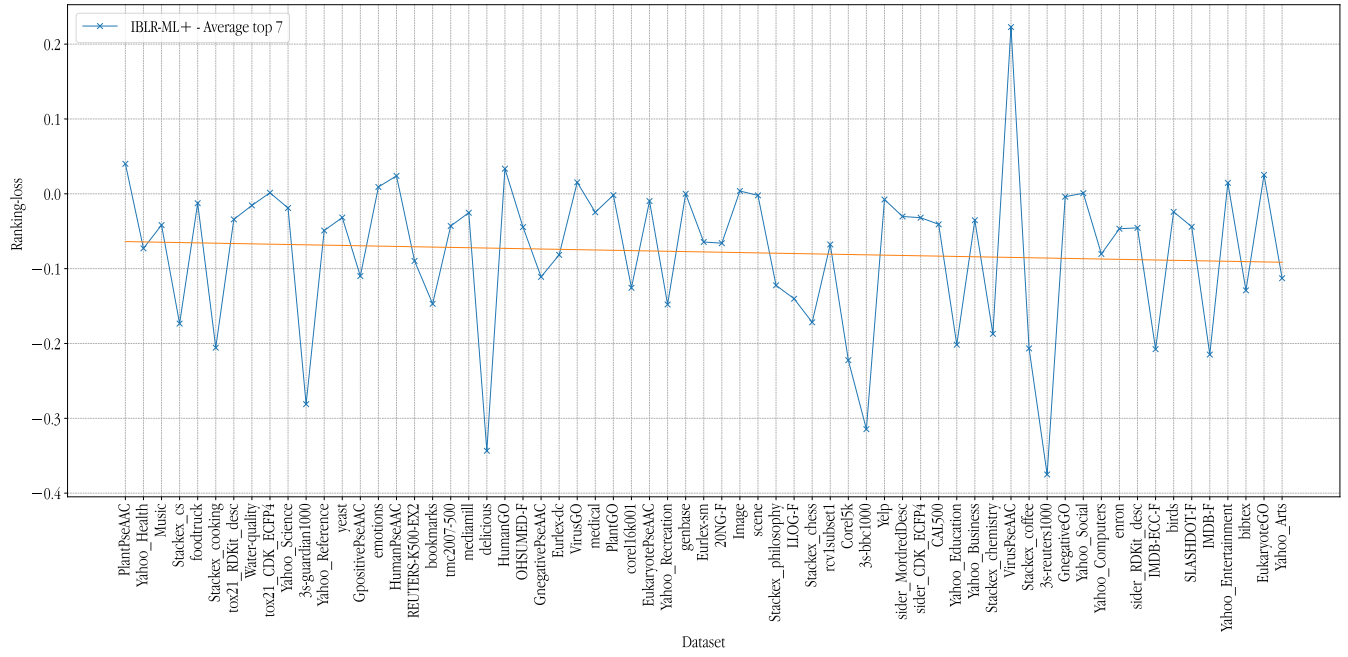


Figure 272: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

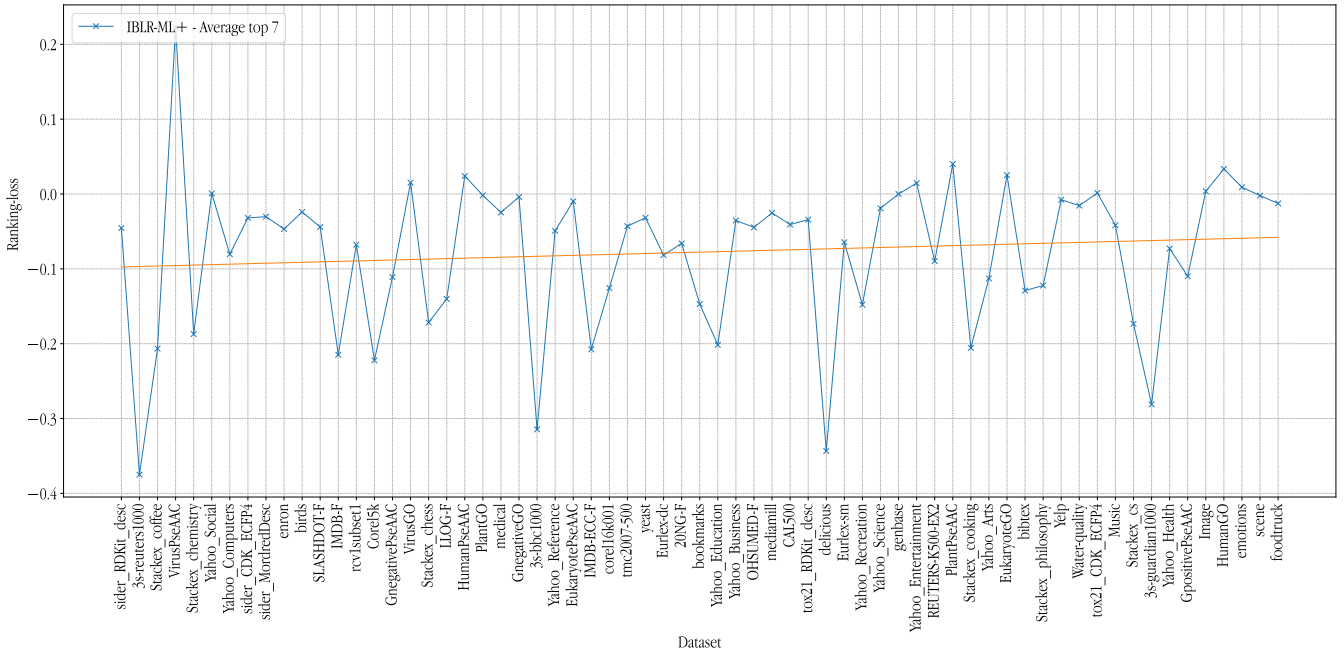


Figure 273: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

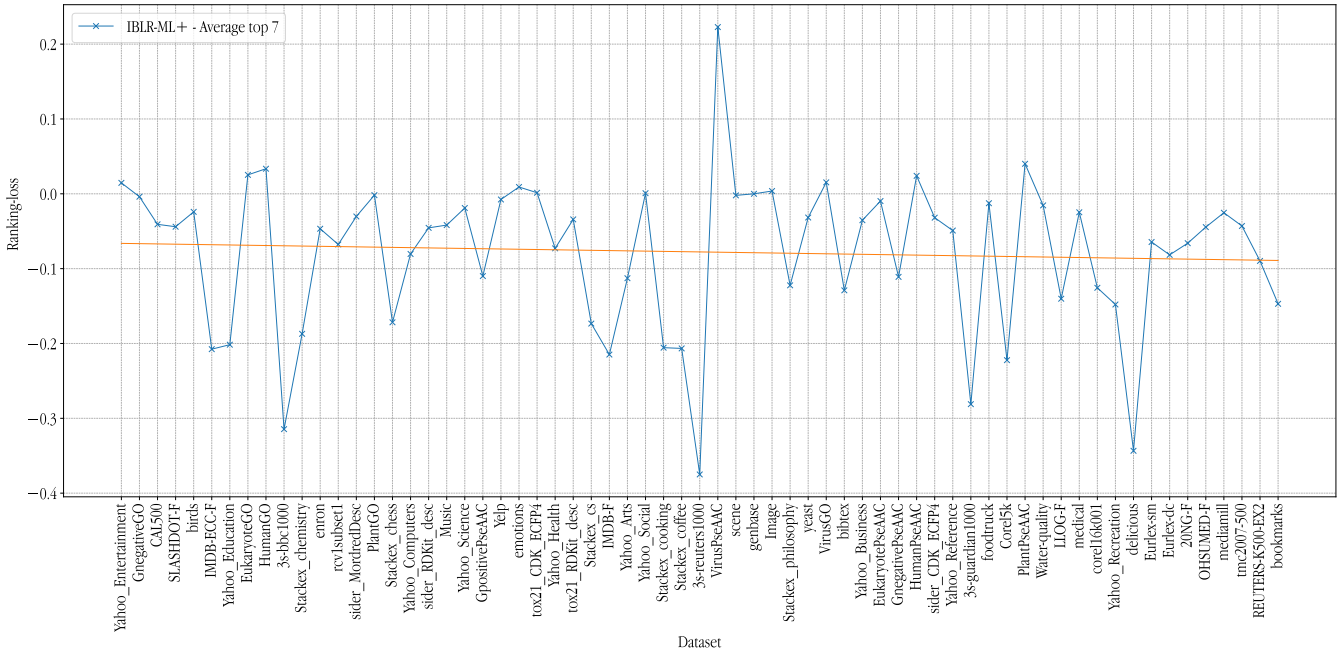


Figure 274: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

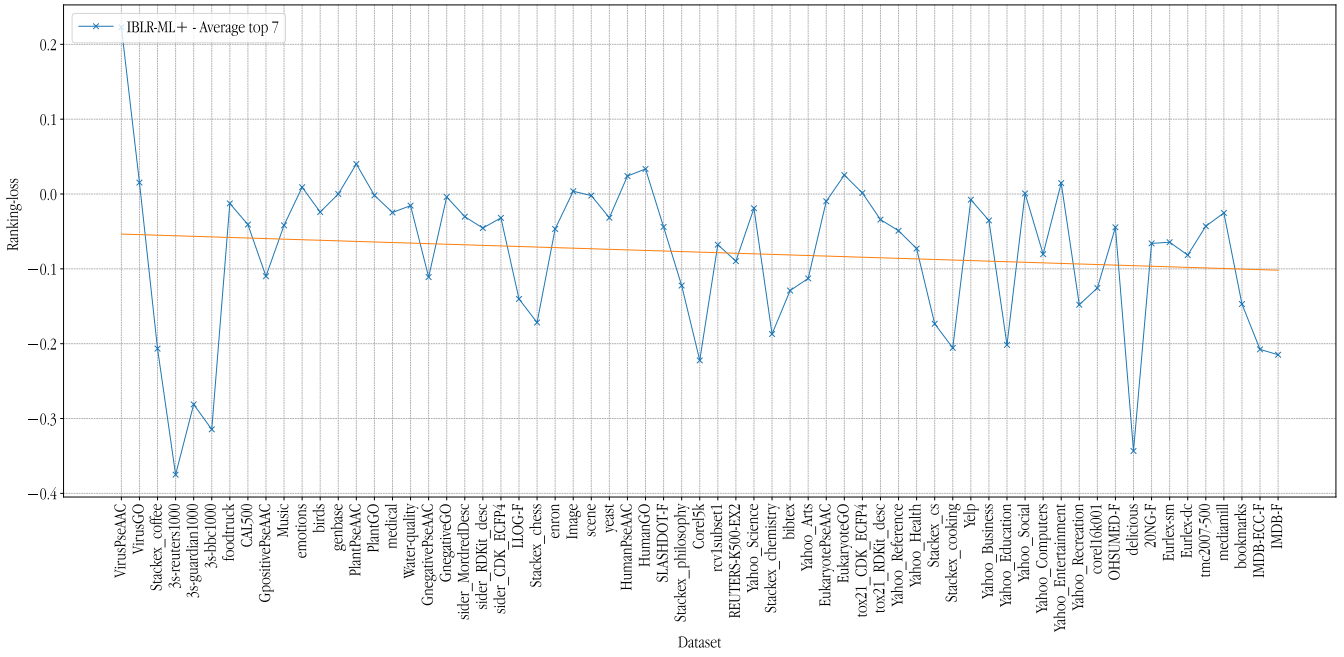


Figure 275: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

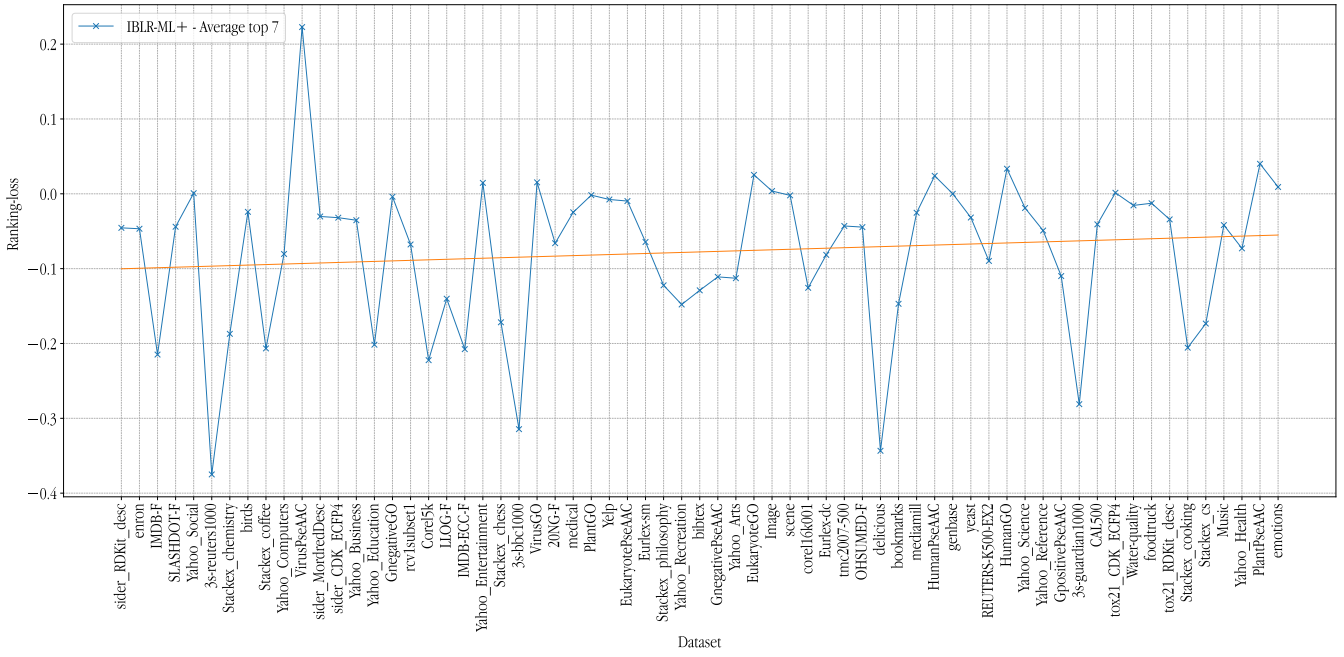


Figure 276: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

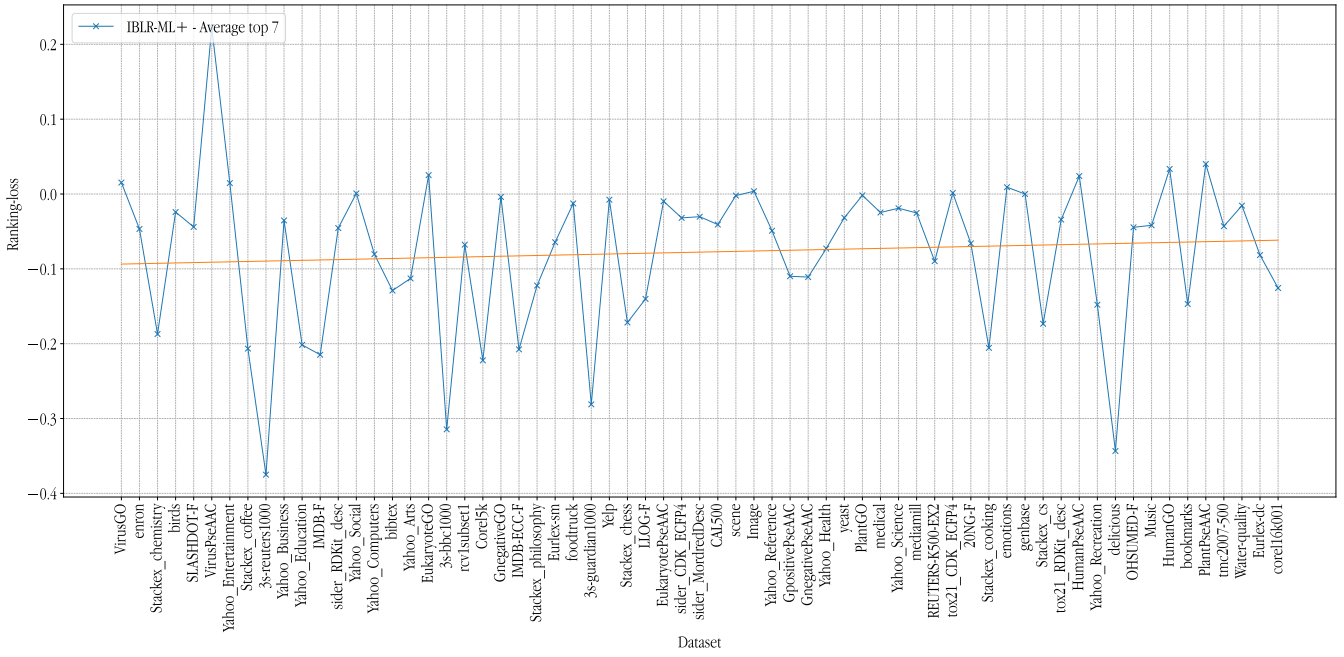


Figure 277: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

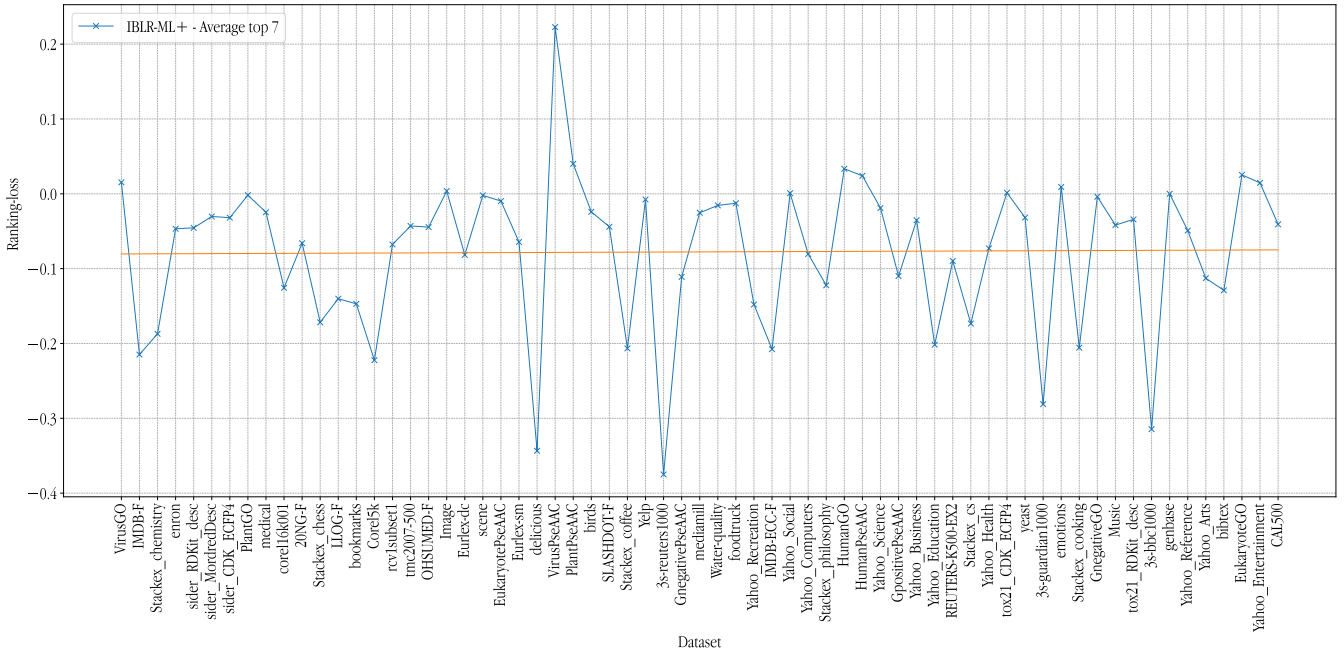


Figure 278: Difference in ranking loss performance between IBLR-ML+ and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

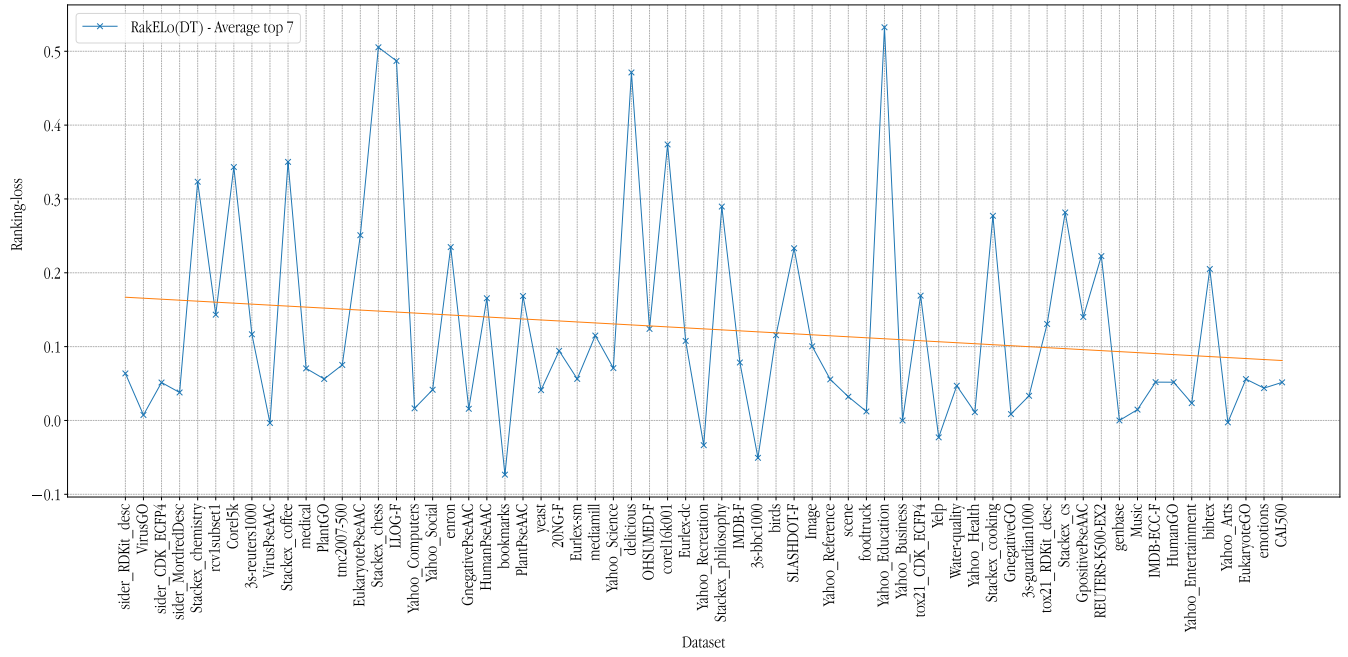


Figure 279: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

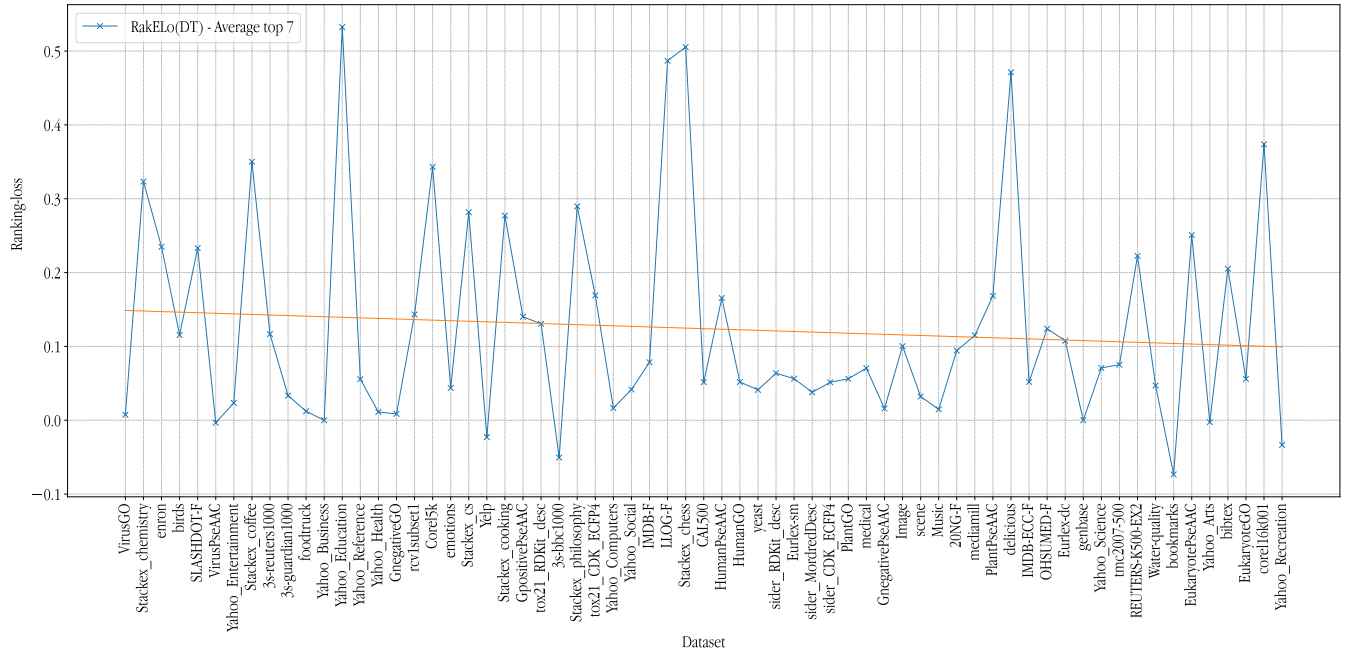


Figure 280: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

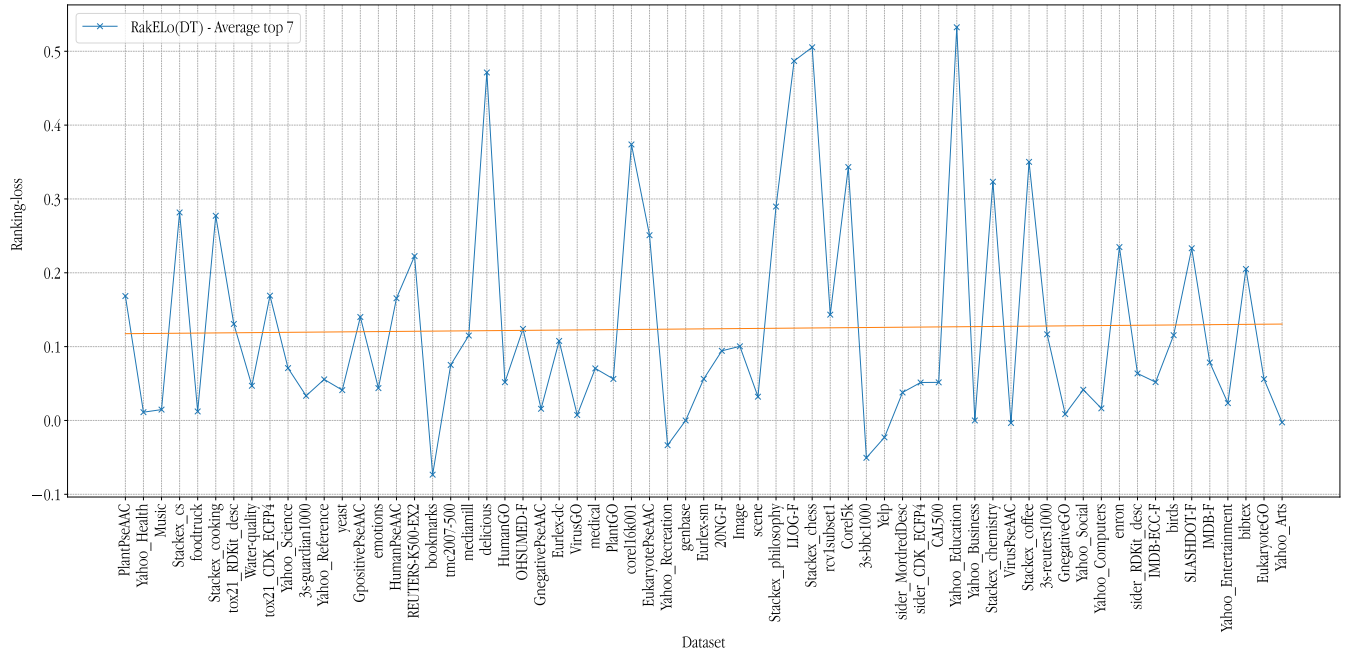


Figure 281: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

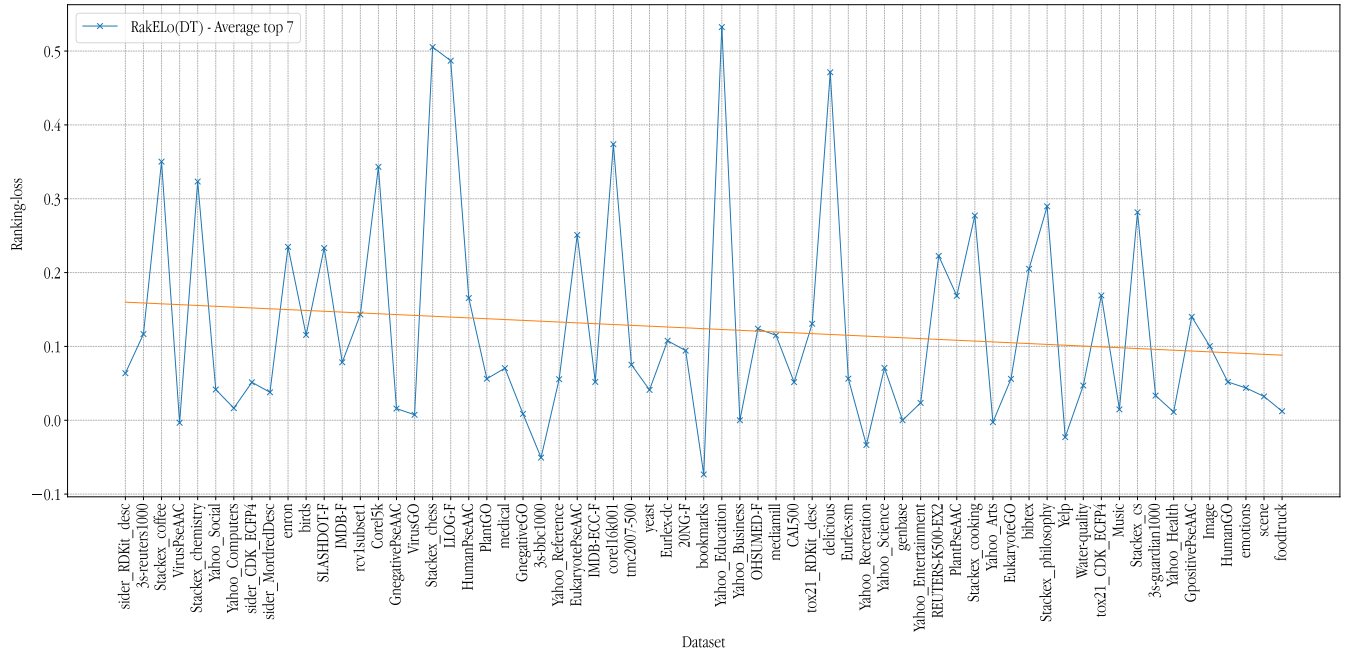


Figure 282: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

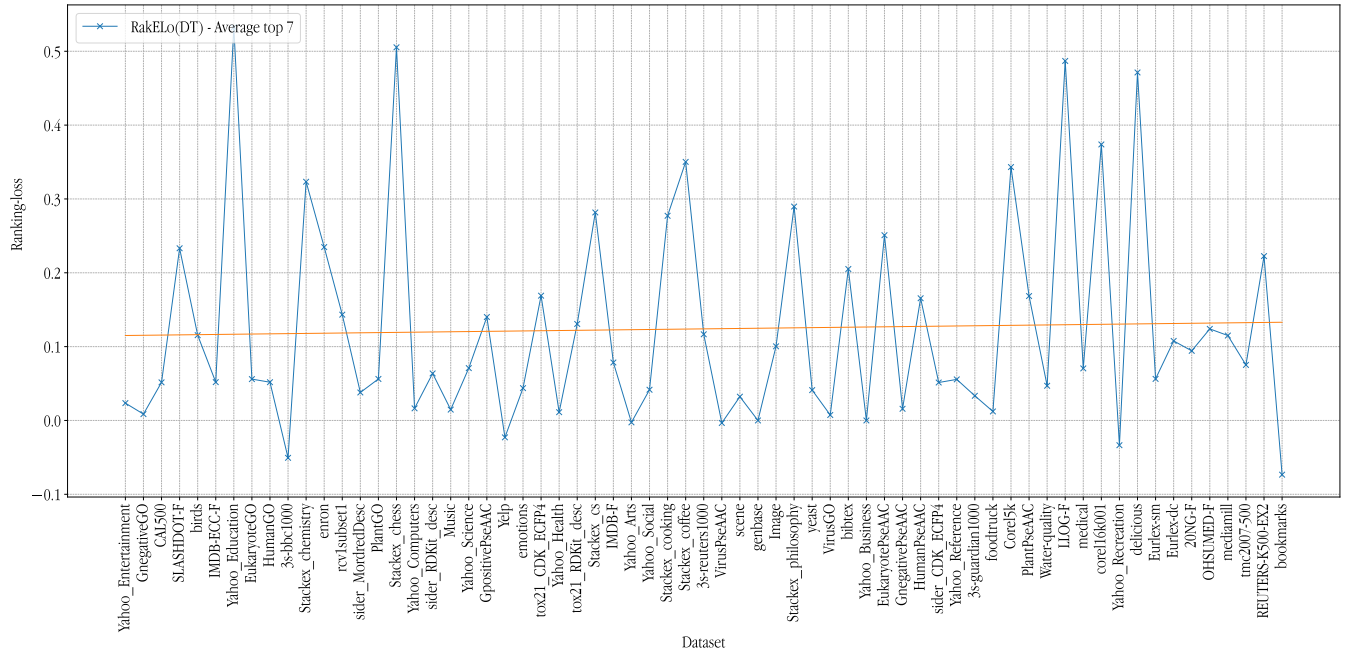


Figure 283: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

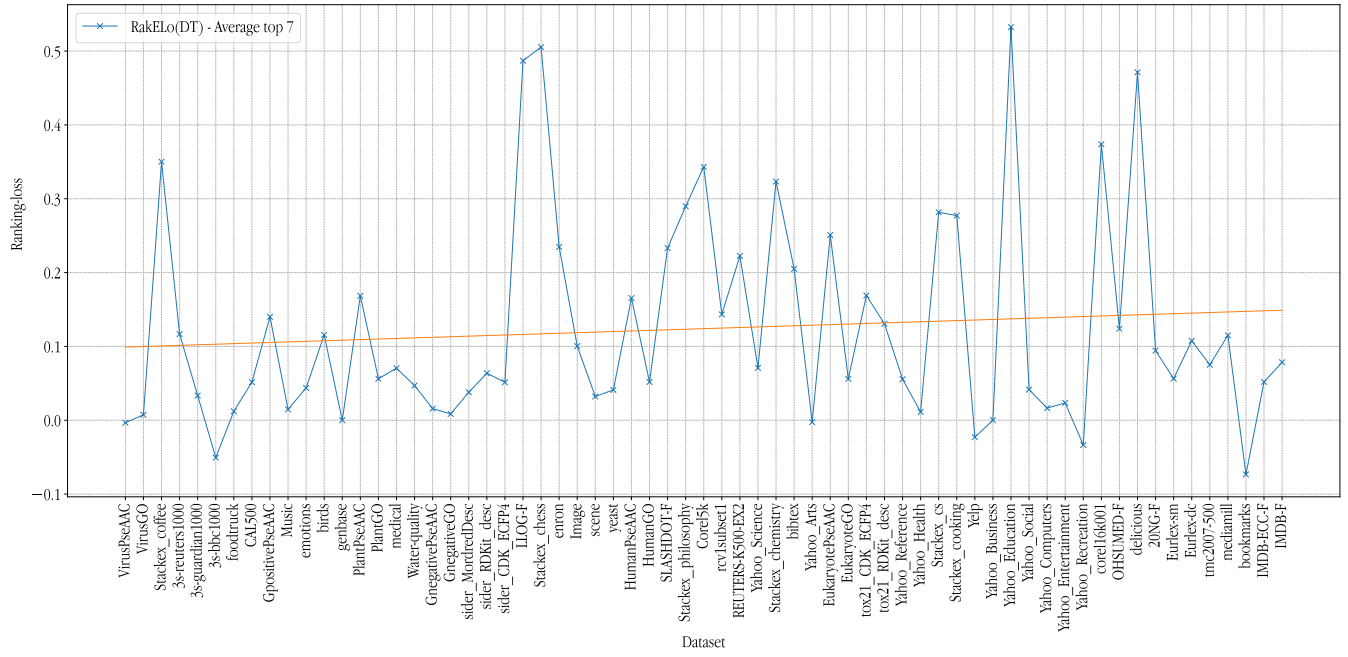


Figure 284: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

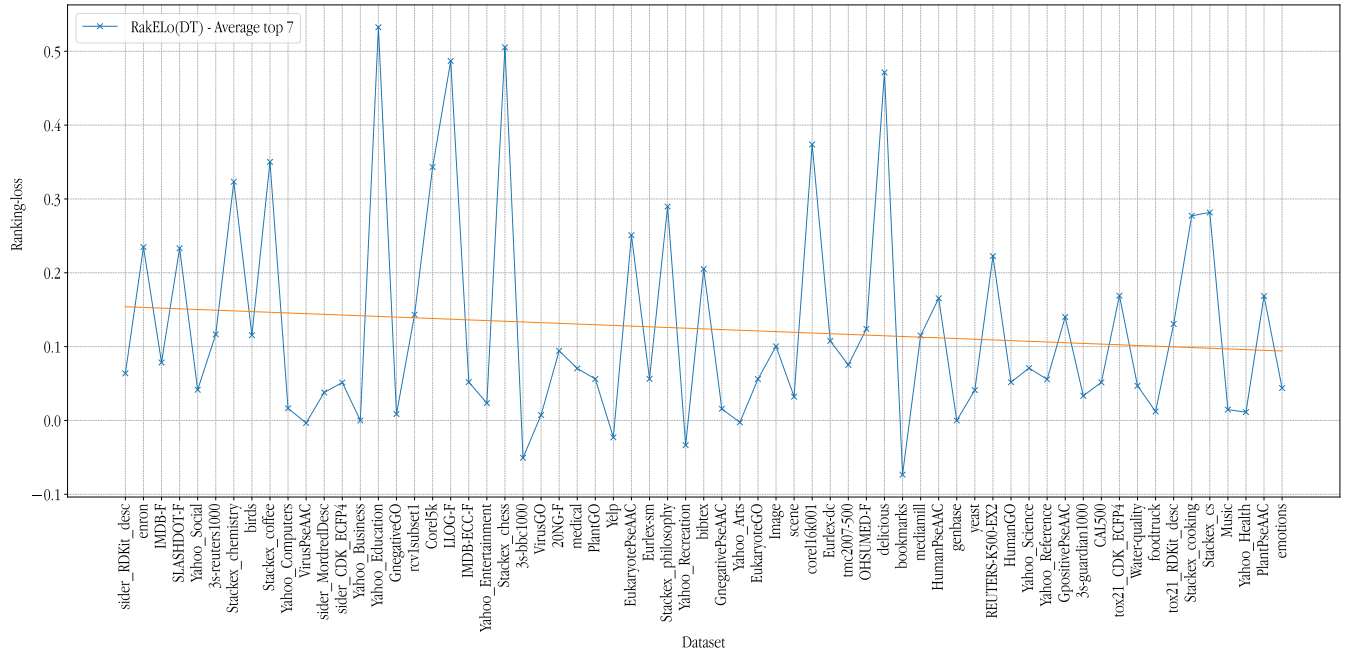


Figure 285: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

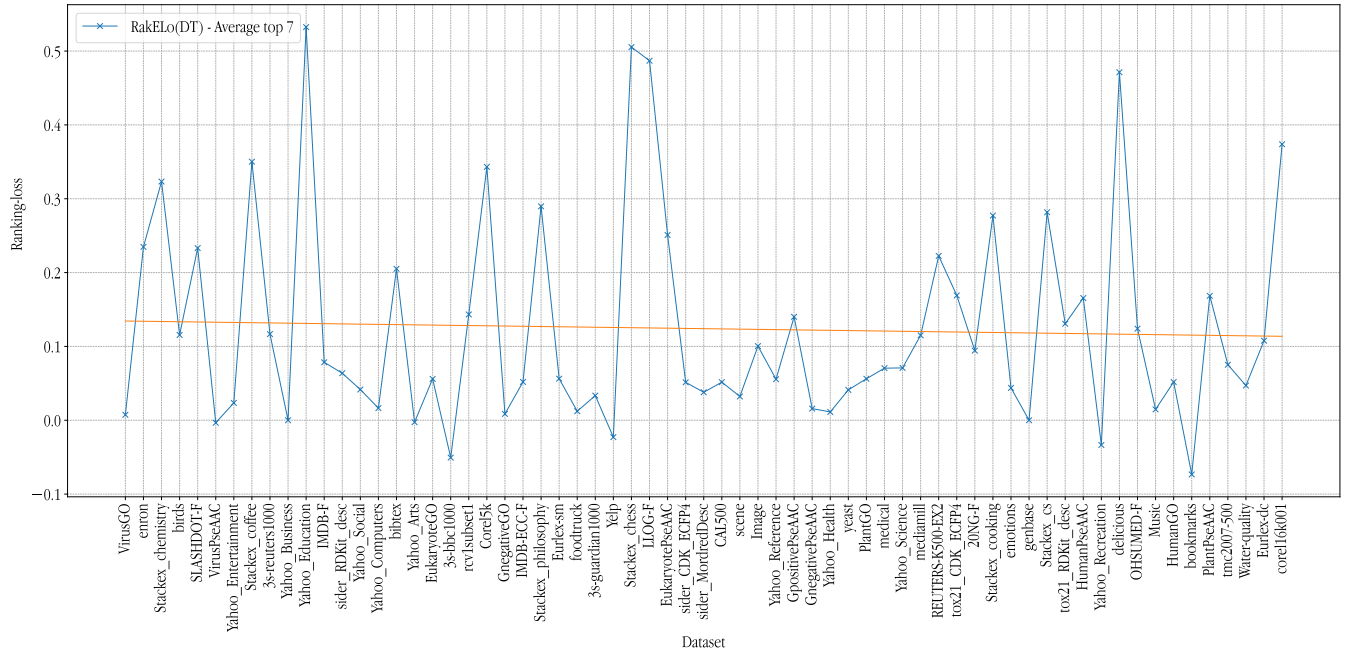


Figure 286: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

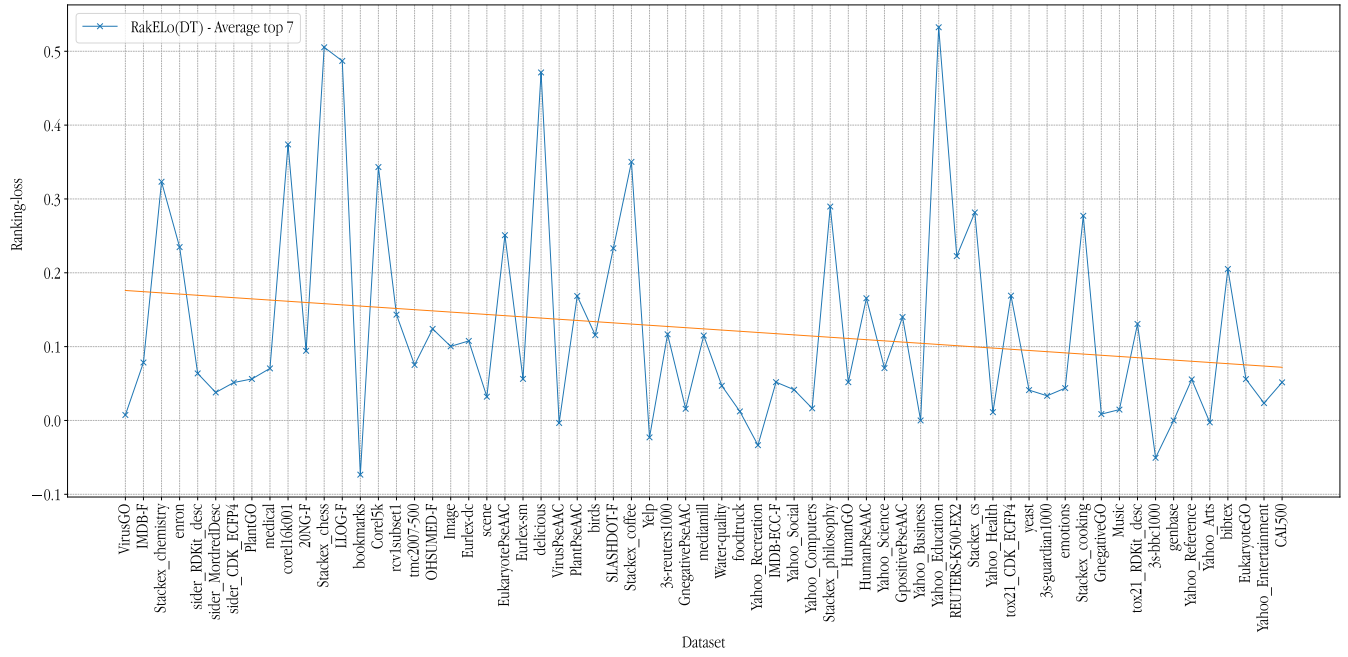


Figure 287: Difference in ranking loss performance between RAkELo(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

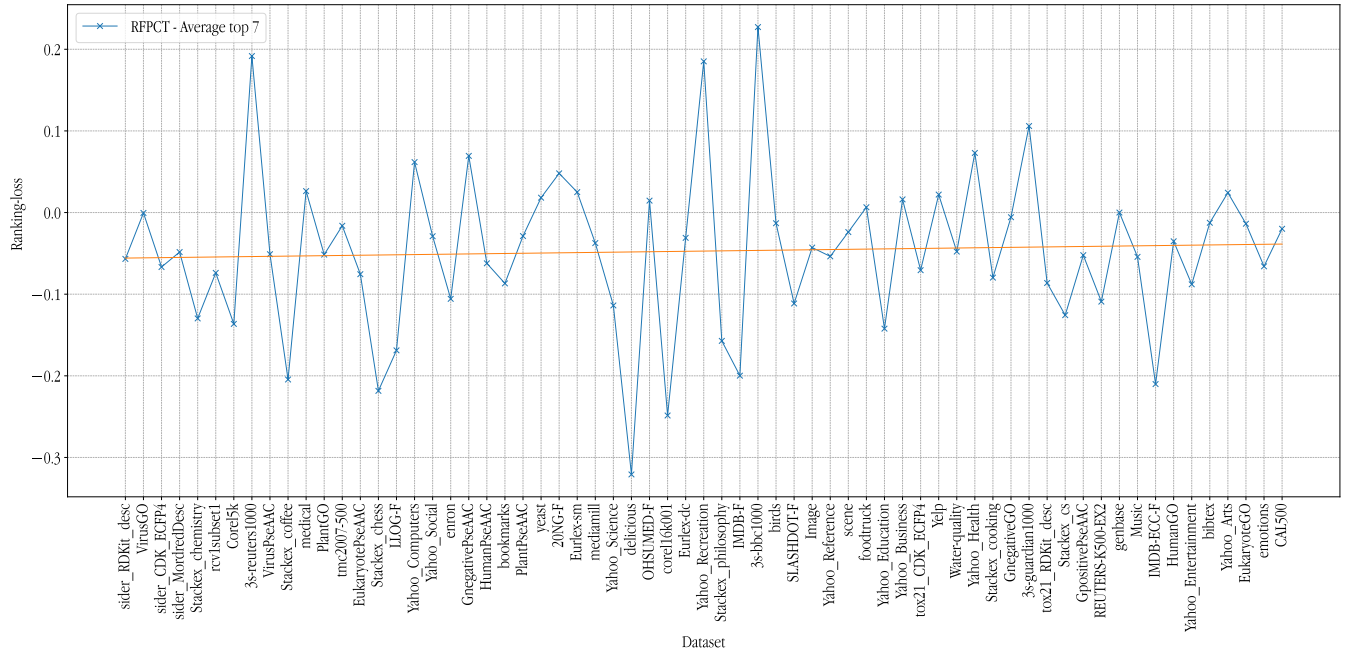


Figure 288: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

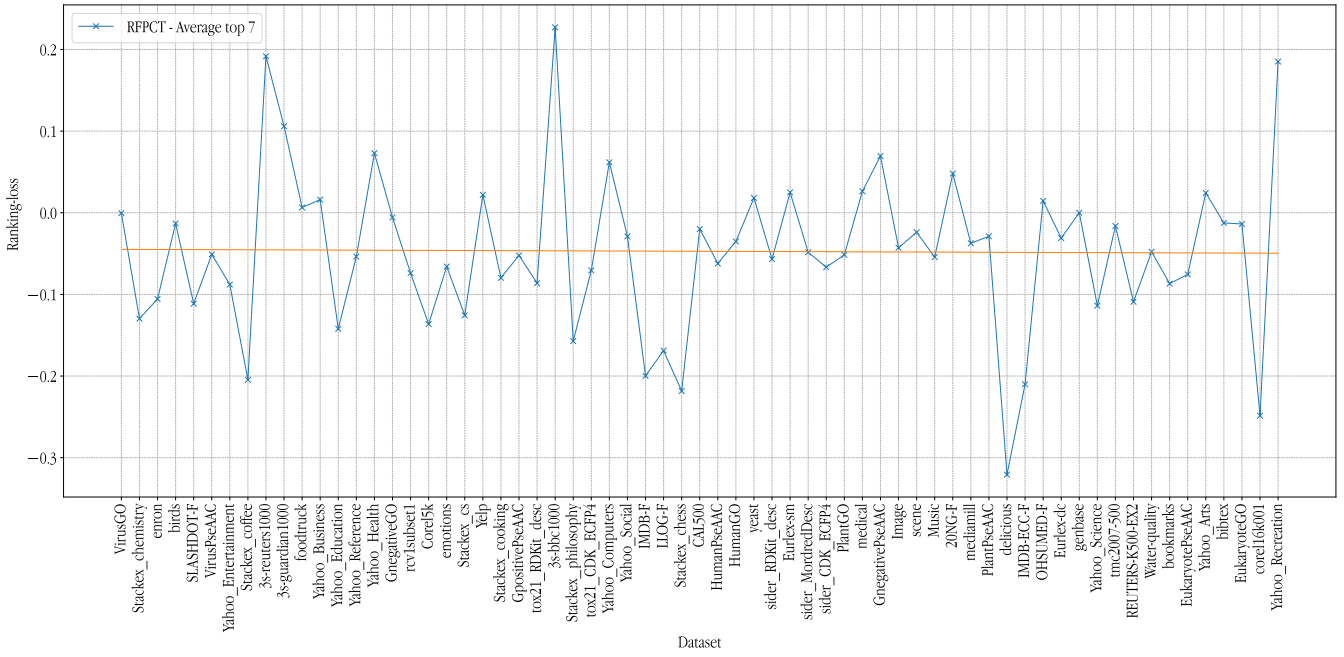


Figure 289: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

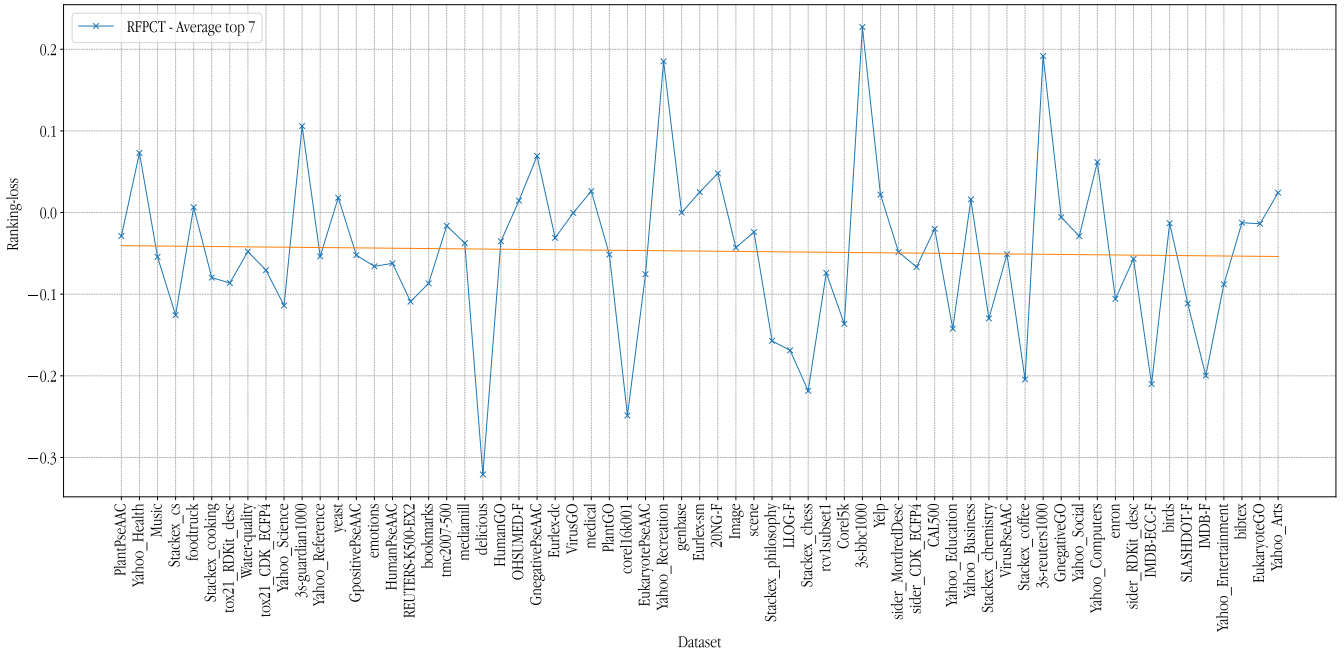


Figure 290: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

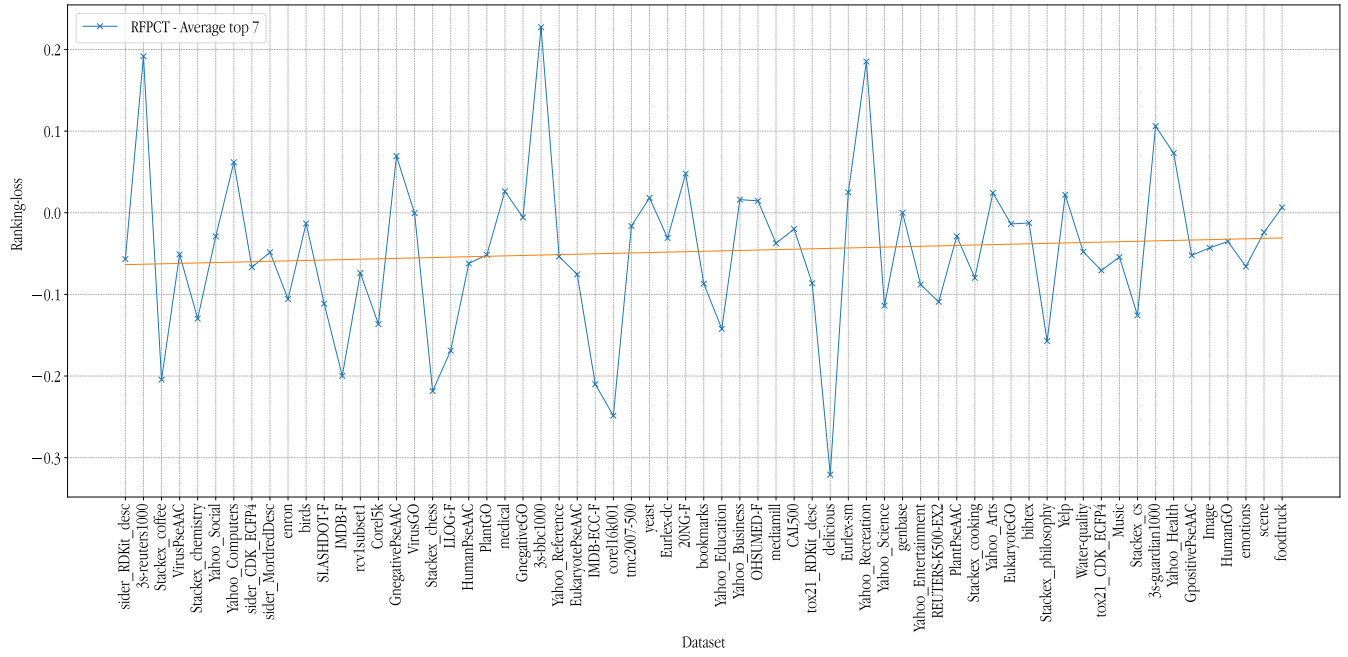


Figure 291: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

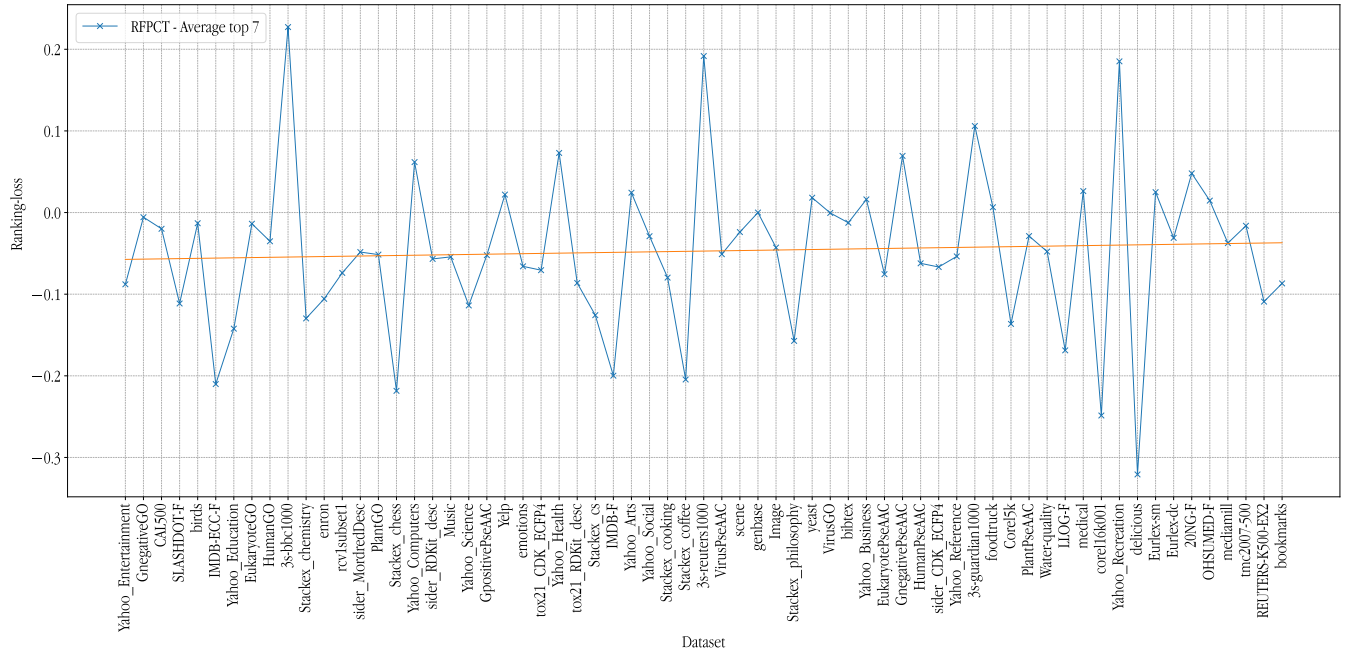


Figure 292: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

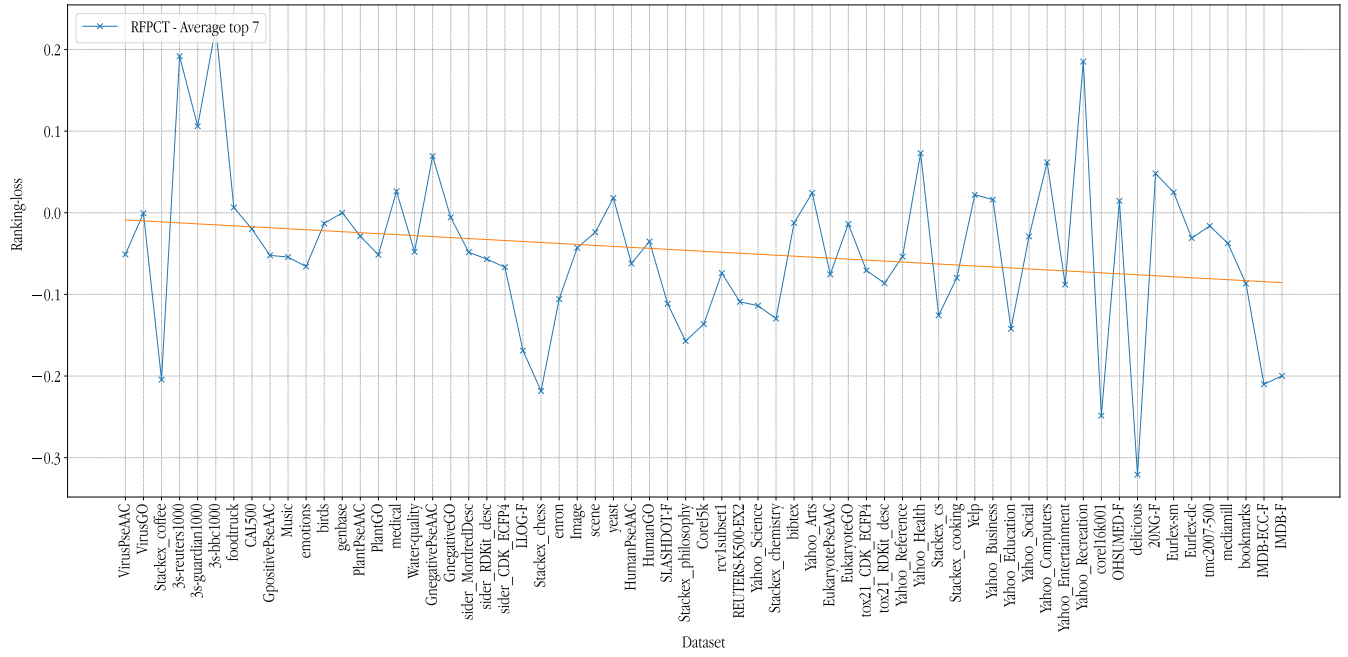


Figure 293: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

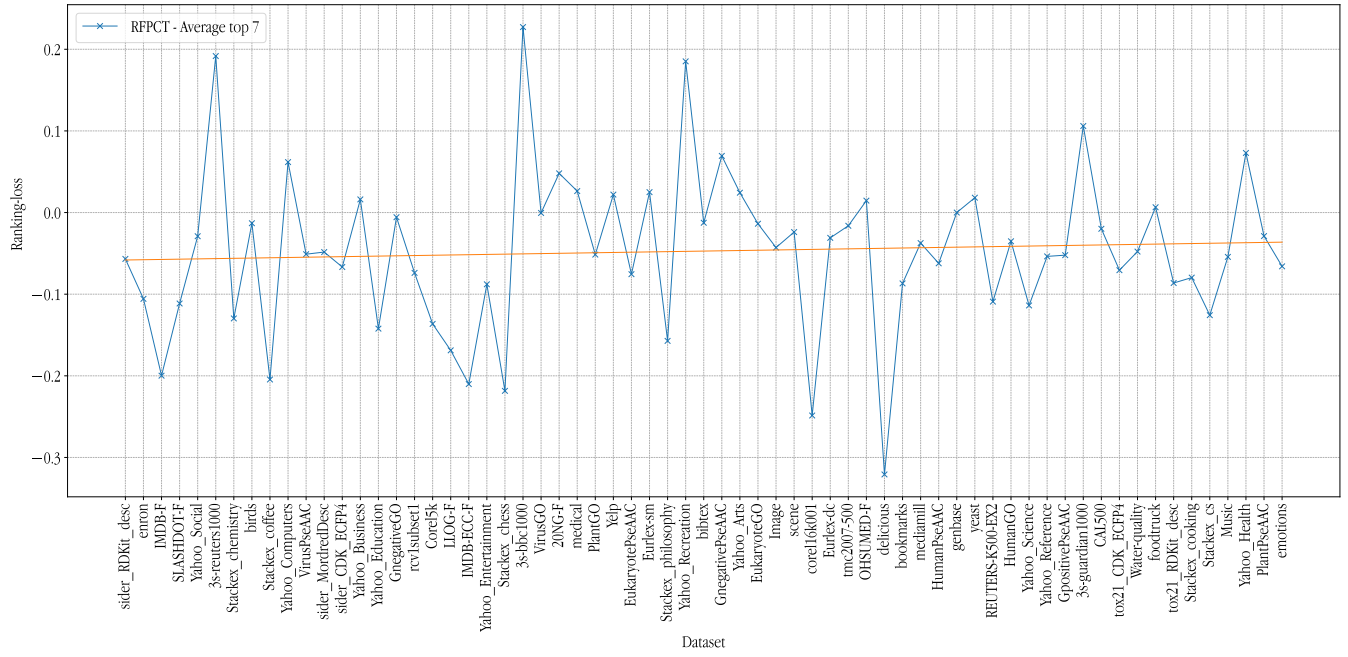


Figure 294: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

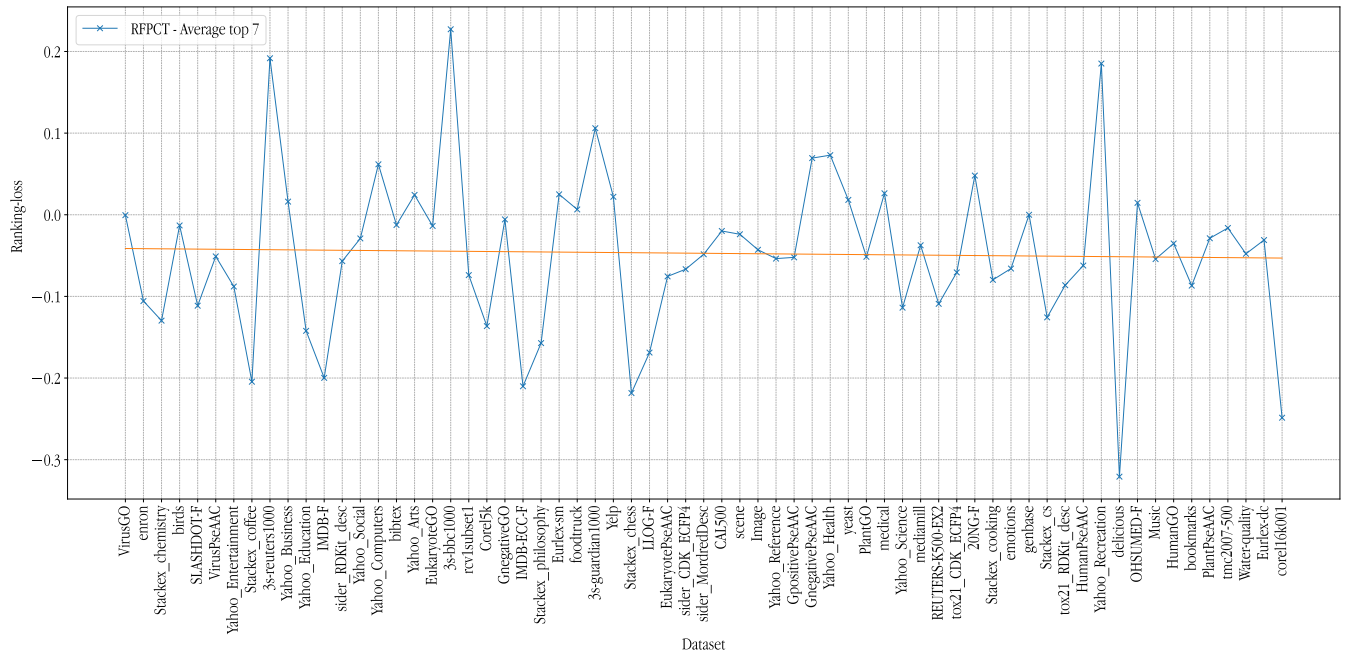


Figure 295: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

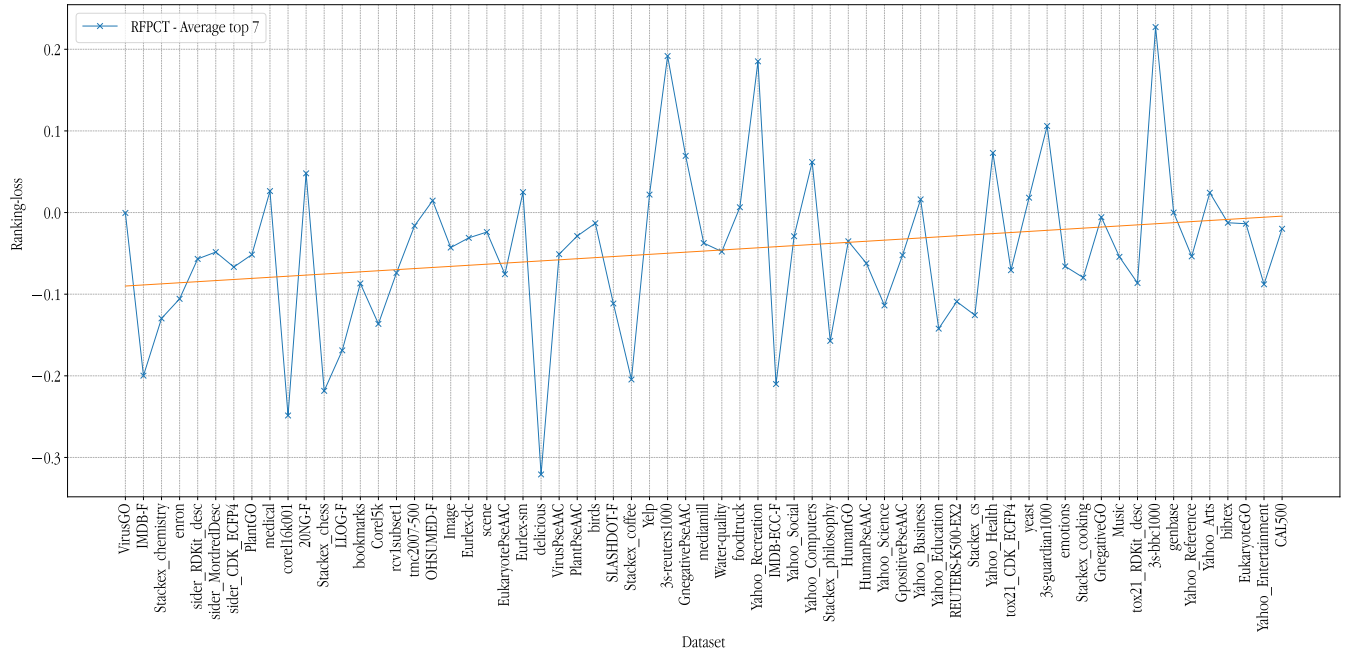


Figure 296: Difference in ranking loss performance between RFPCT and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

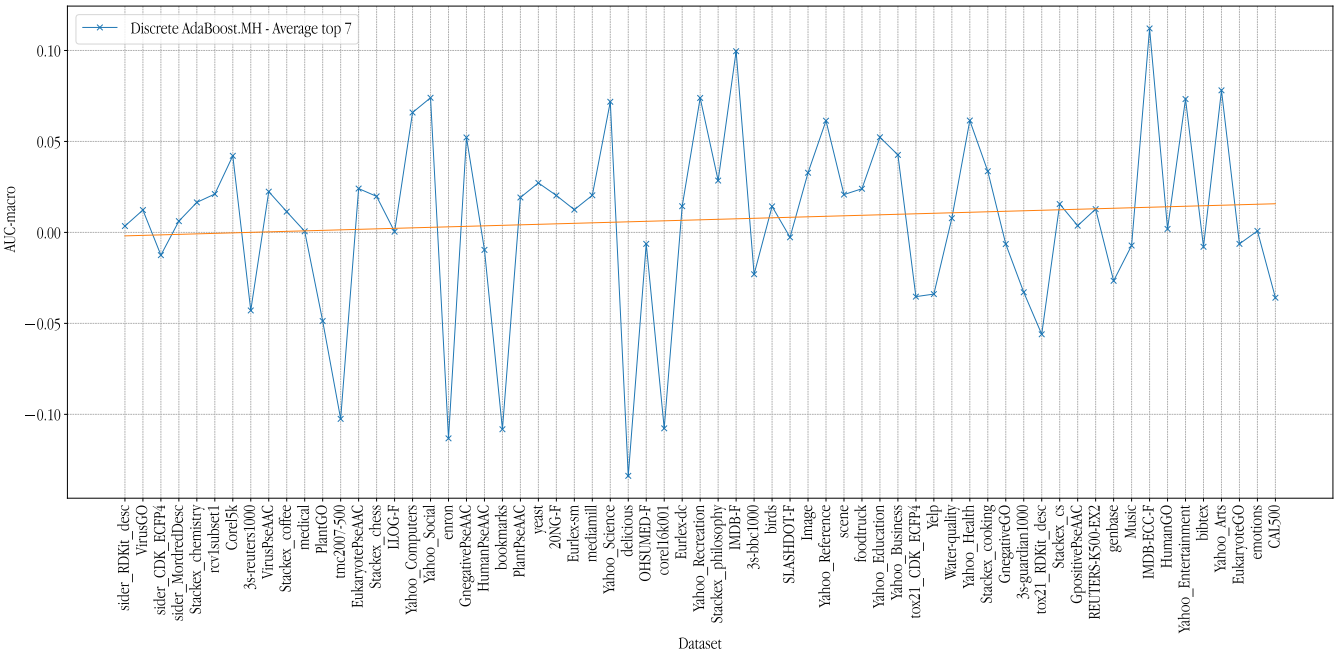


Figure 297: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

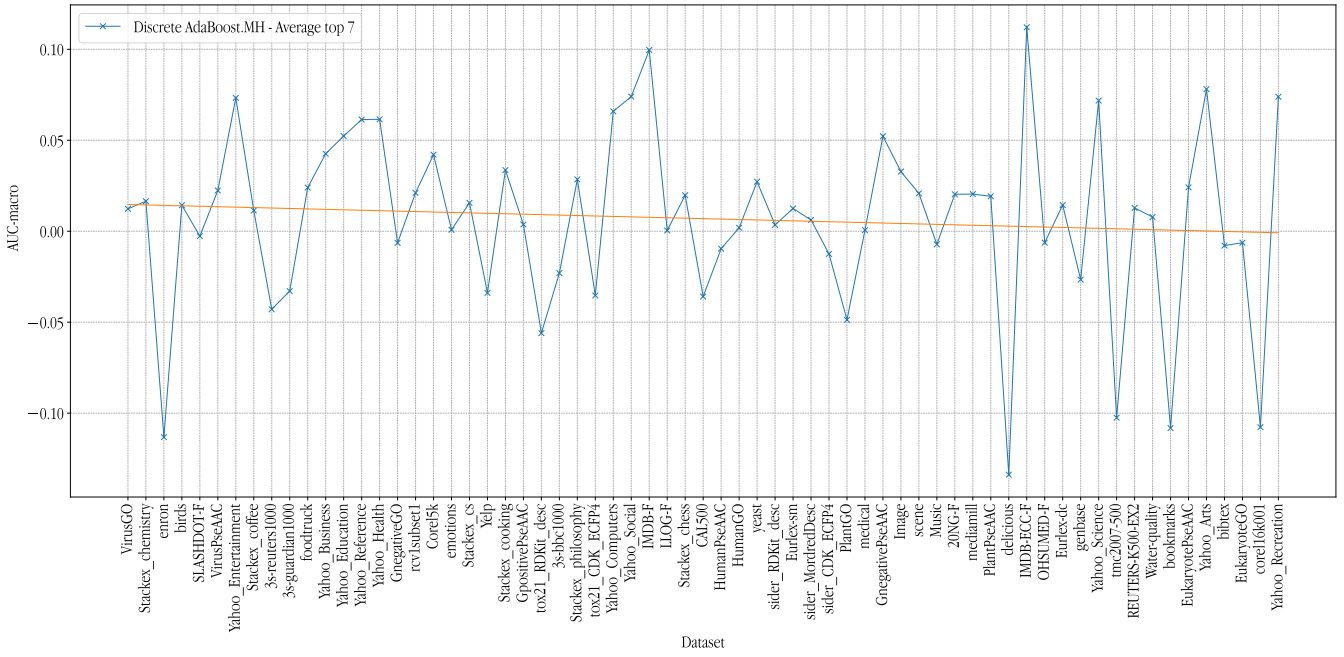


Figure 298: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

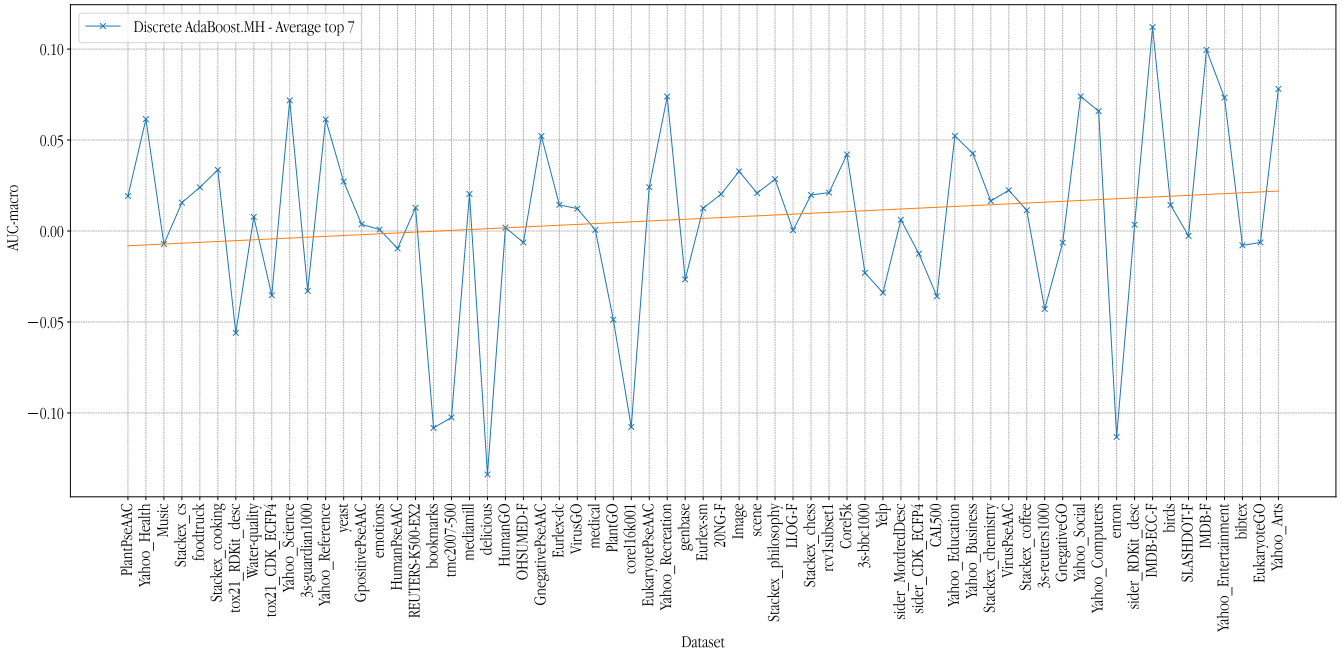


Figure 299: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

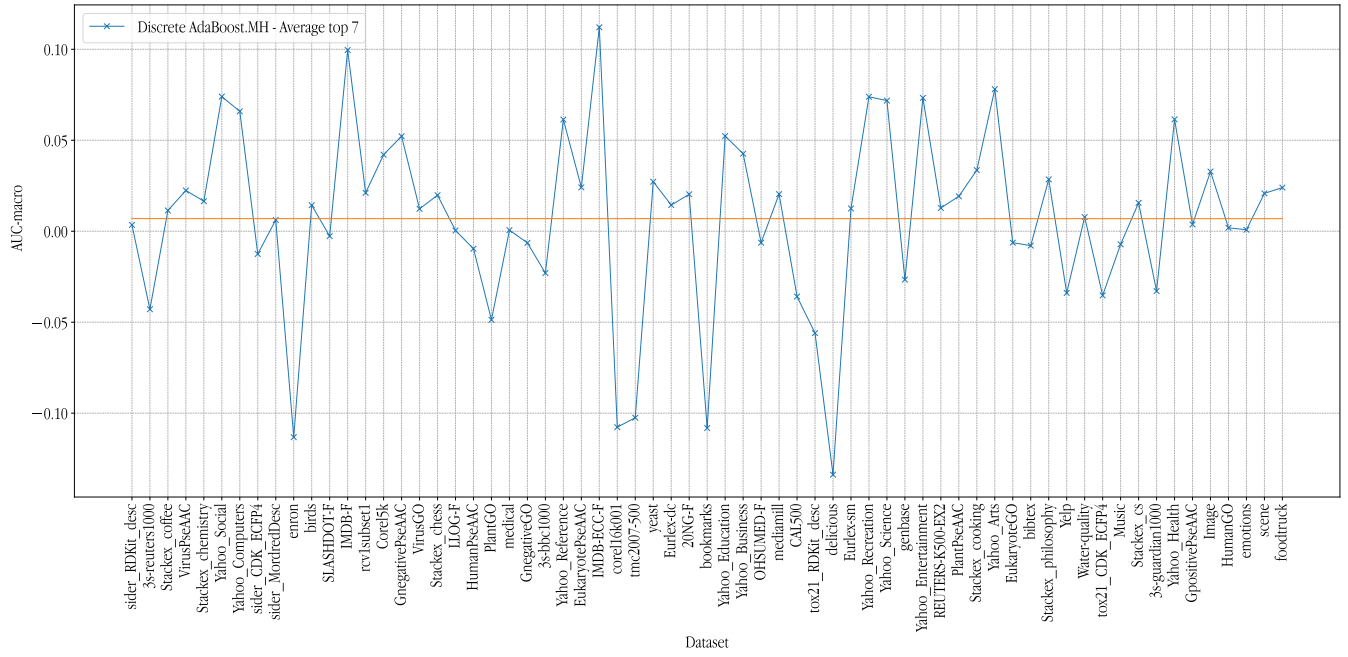


Figure 300: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

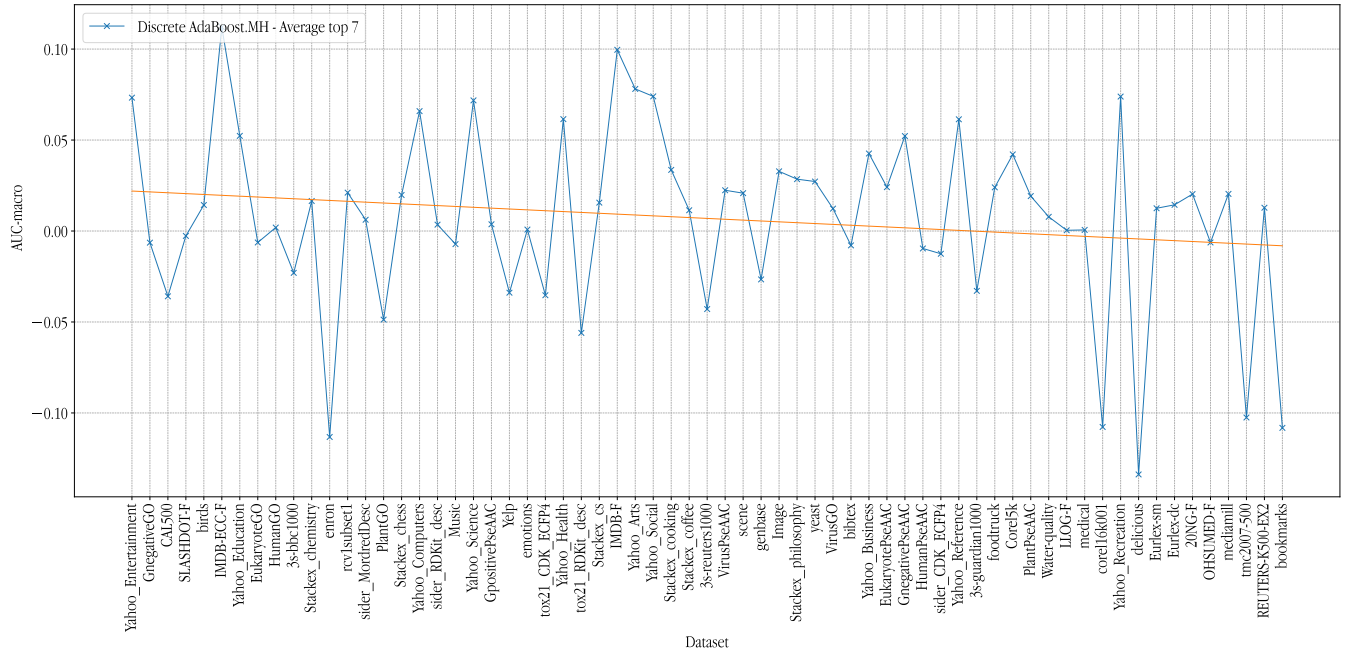


Figure 301: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

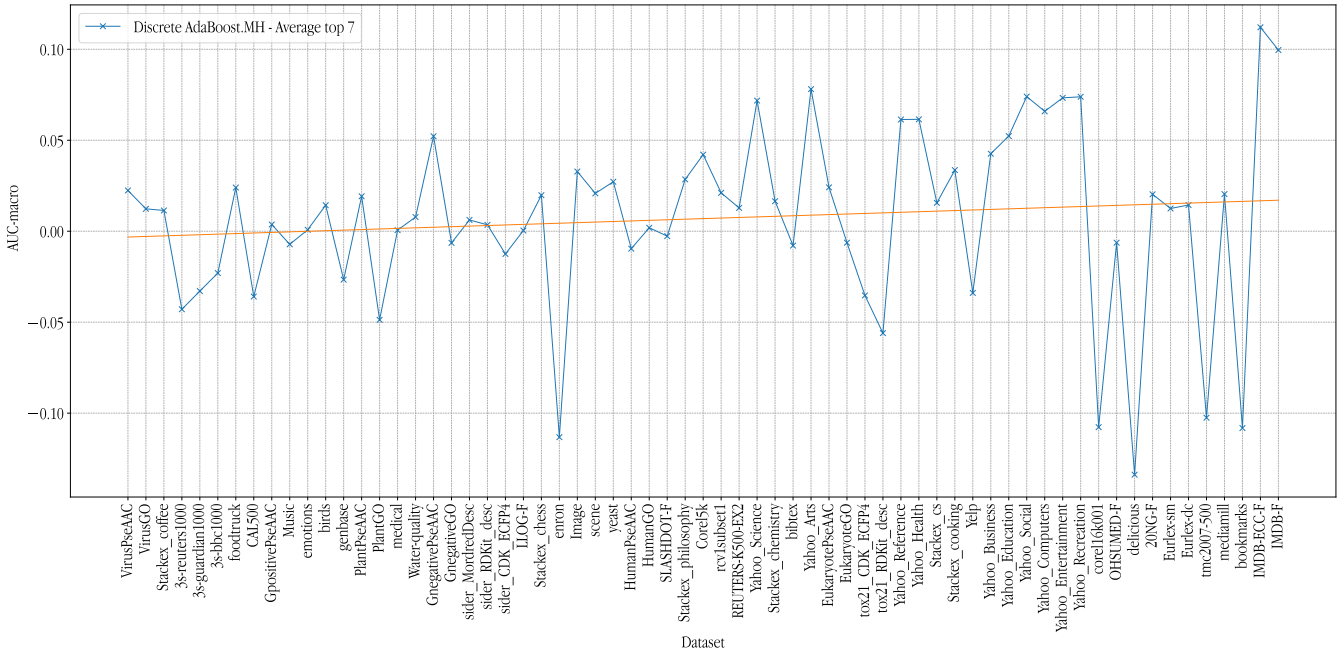


Figure 302: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

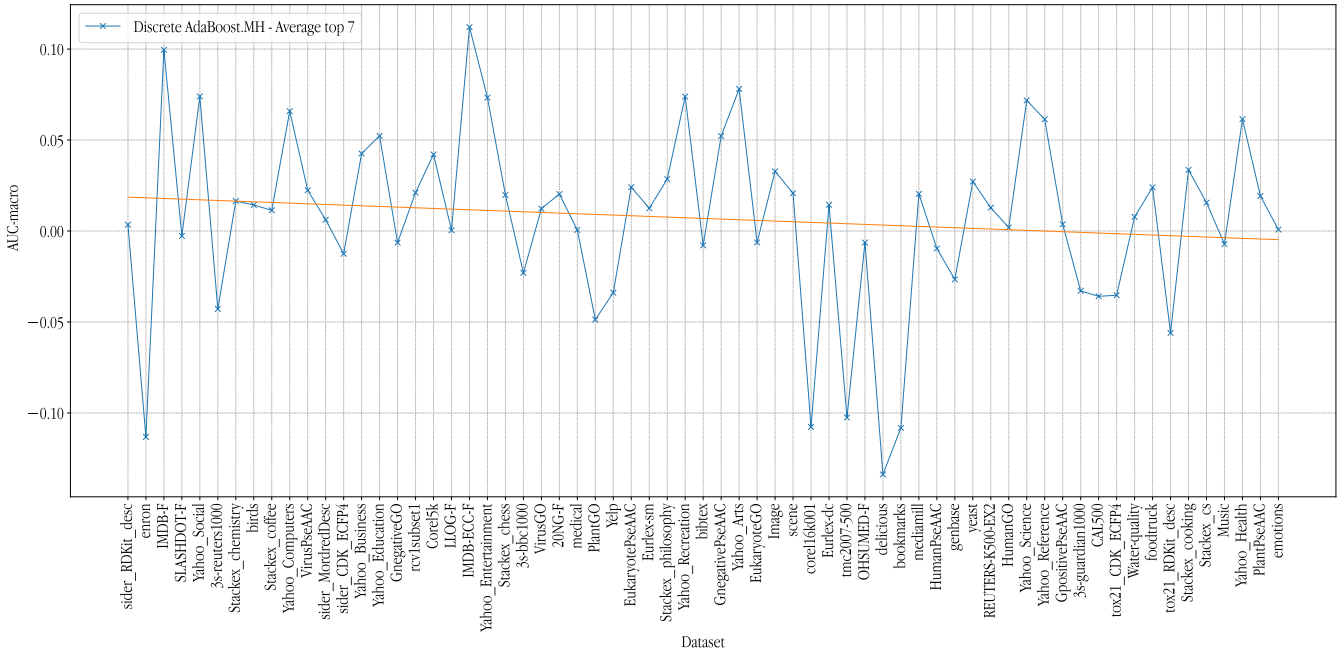


Figure 303: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

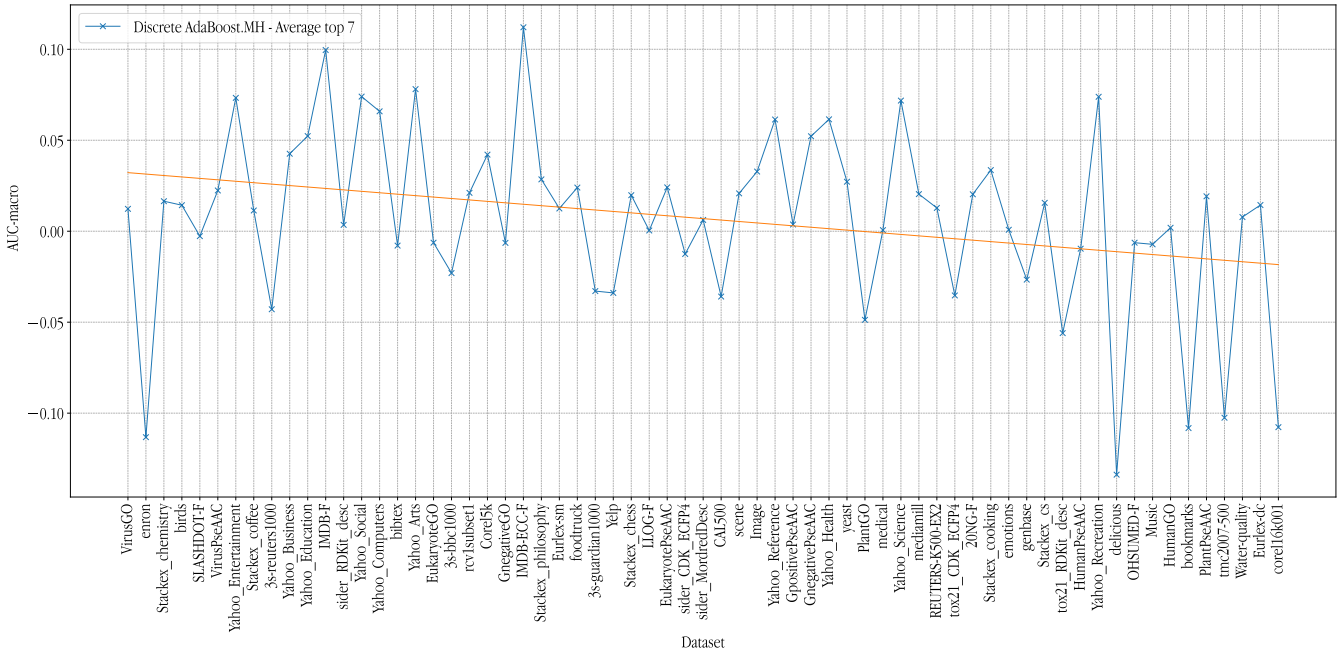


Figure 304: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

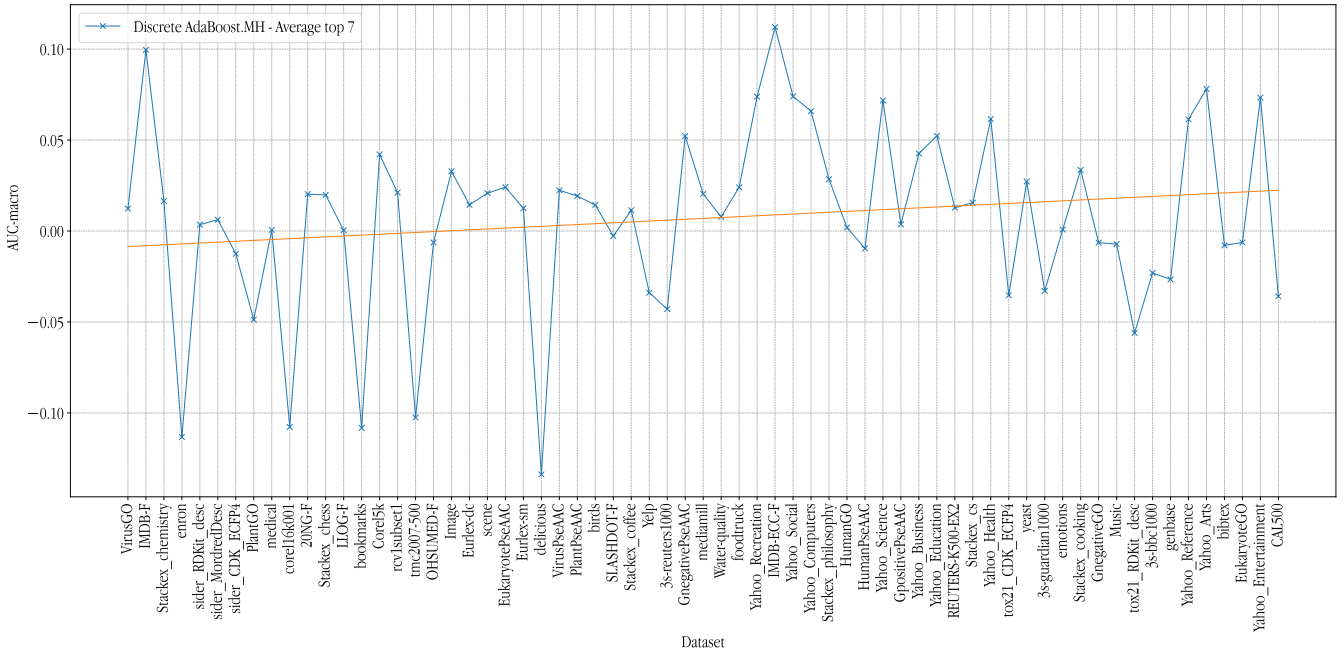


Figure 305: Difference in AUC-macro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

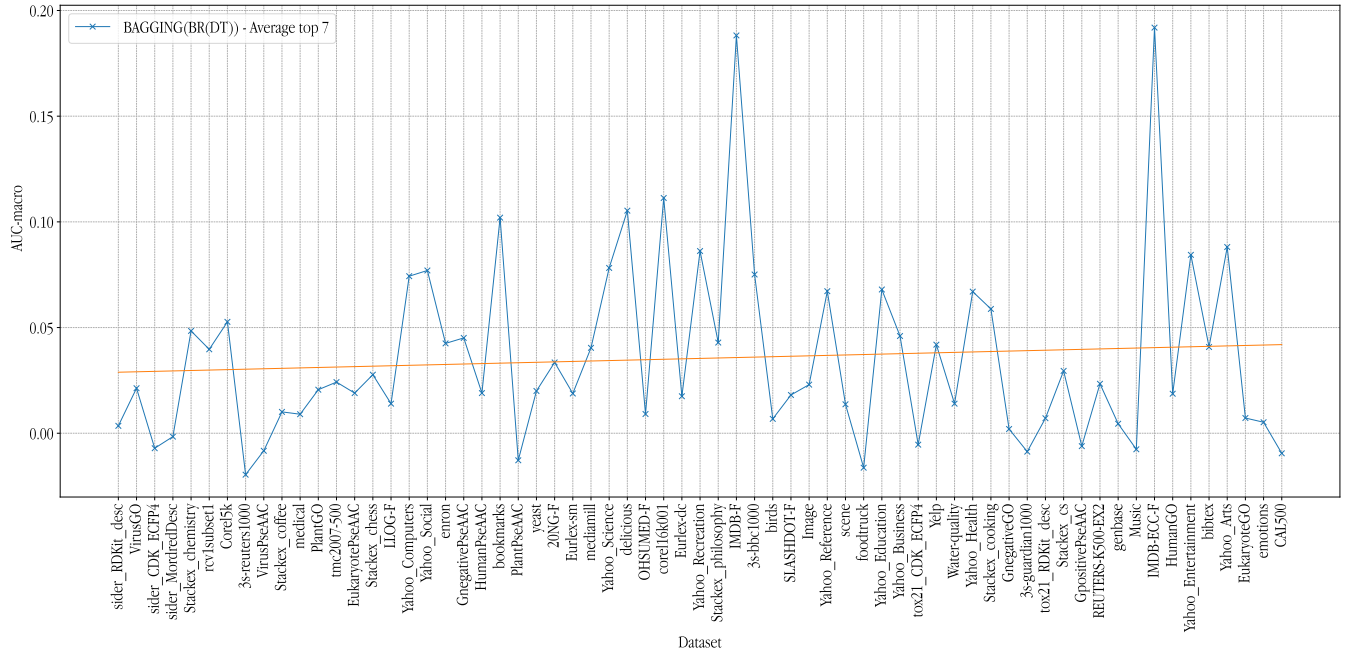


Figure 306: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

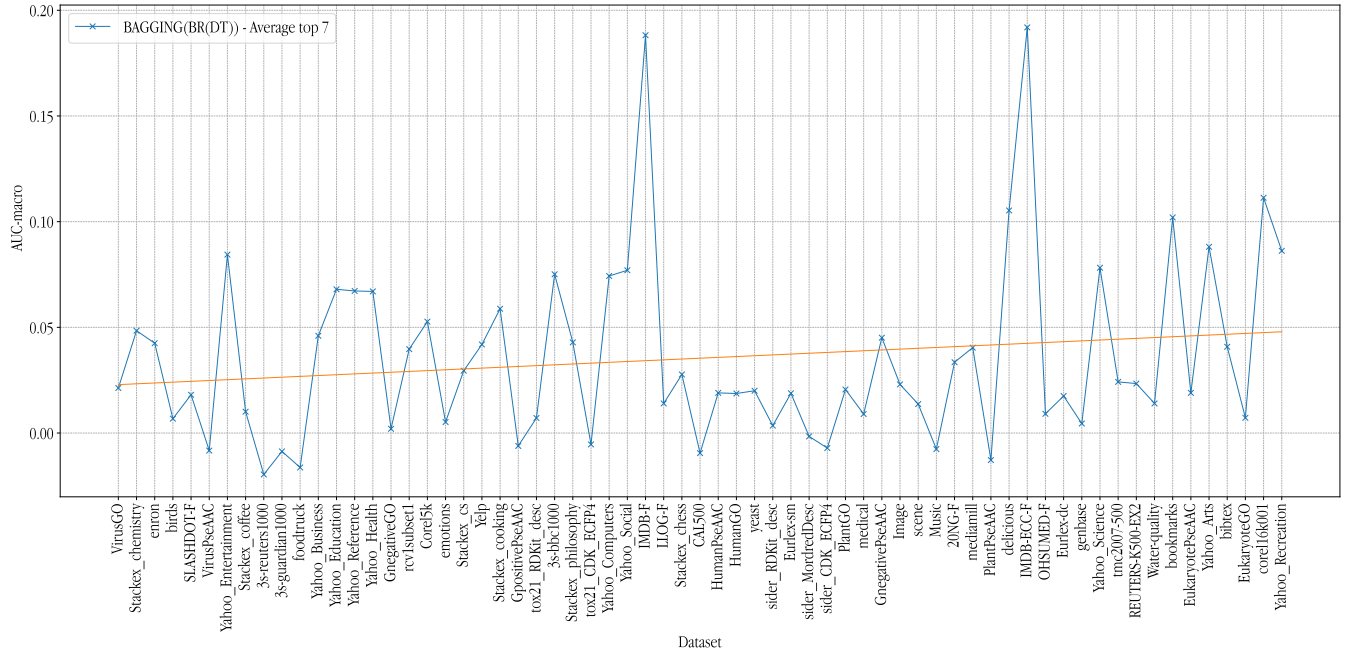


Figure 307: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

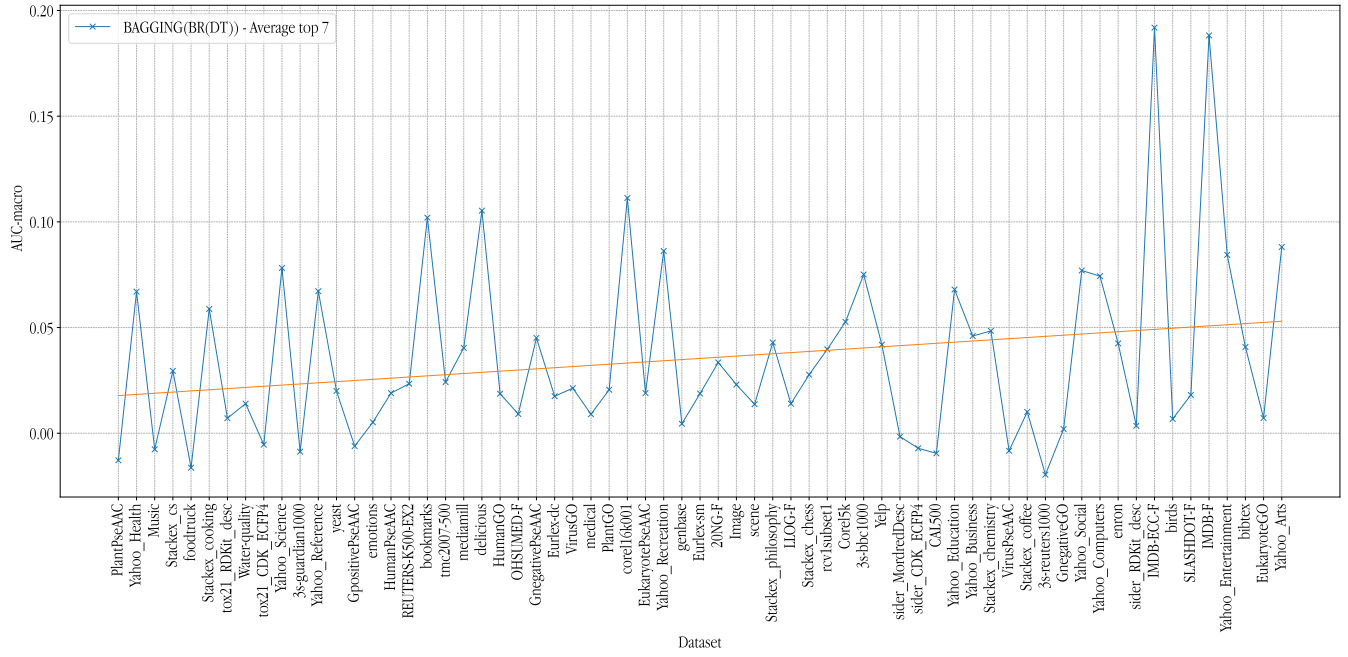


Figure 308: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

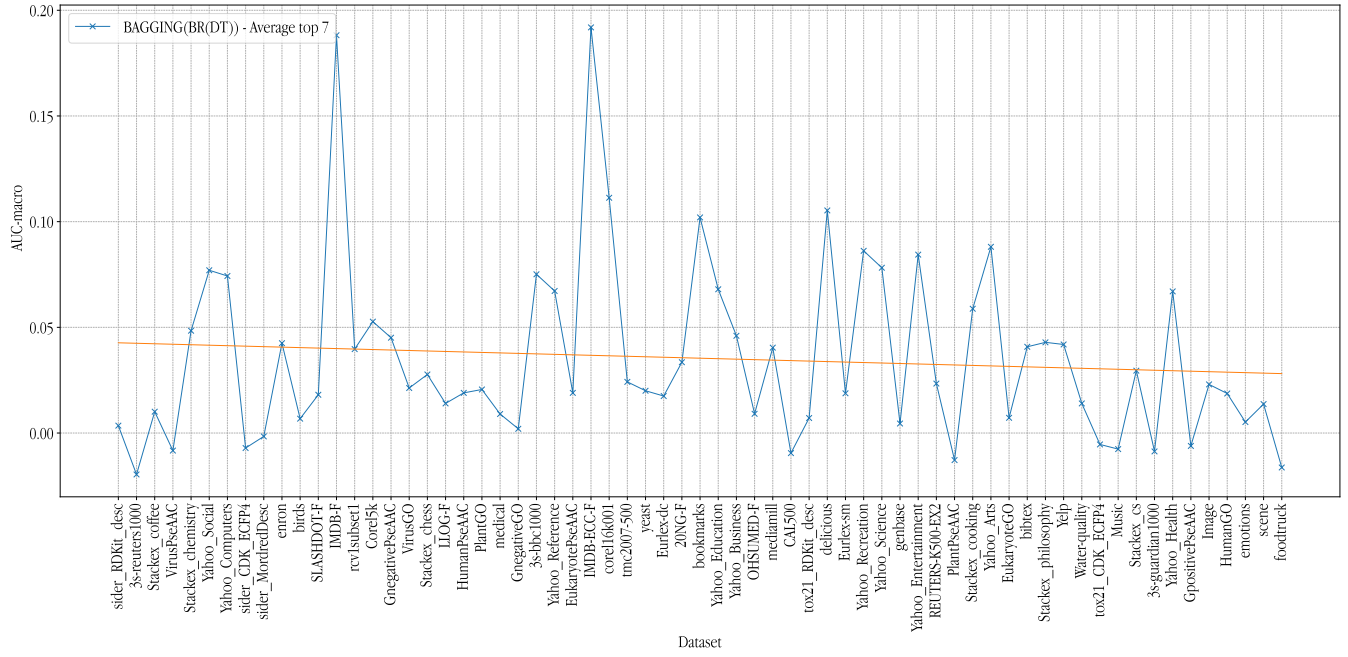


Figure 309: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

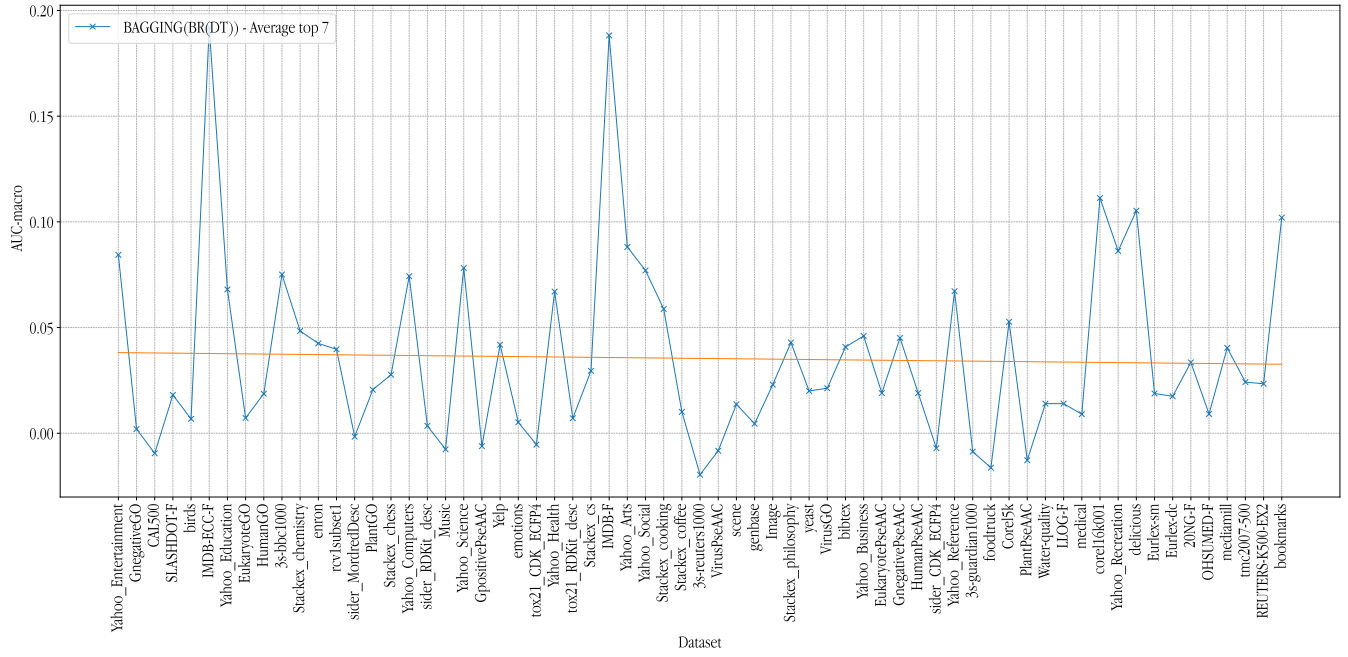


Figure 310: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

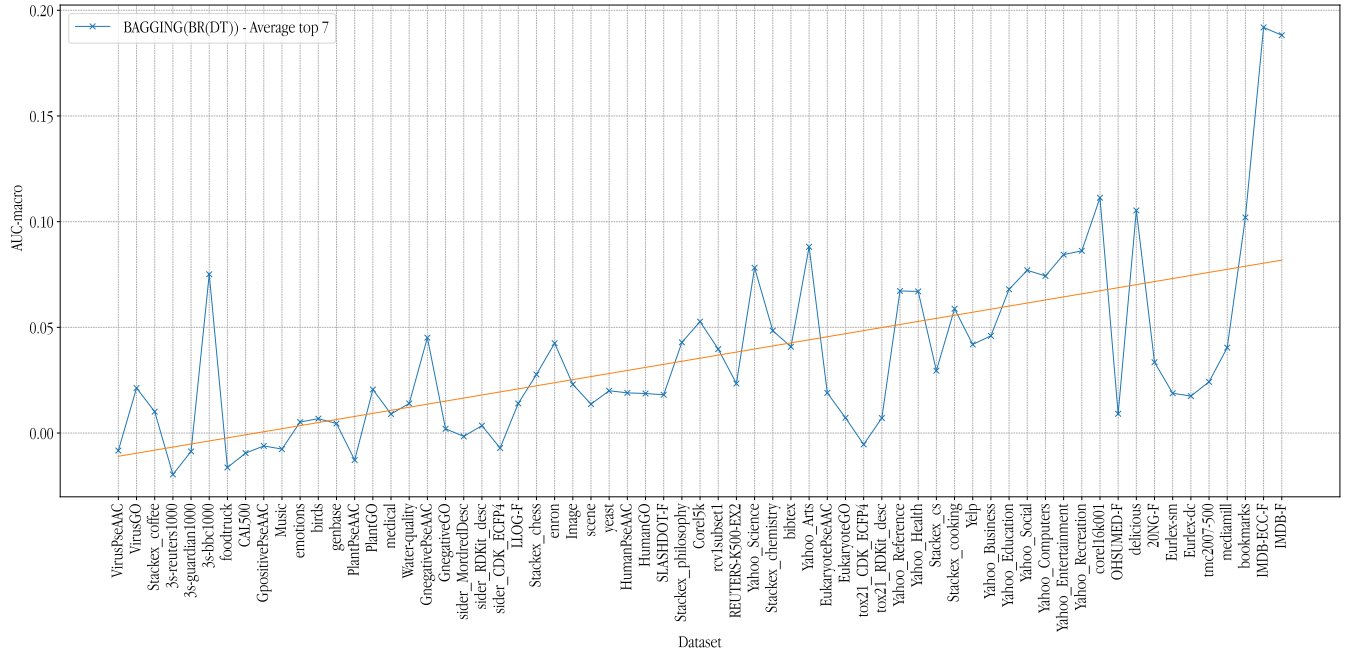


Figure 311: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

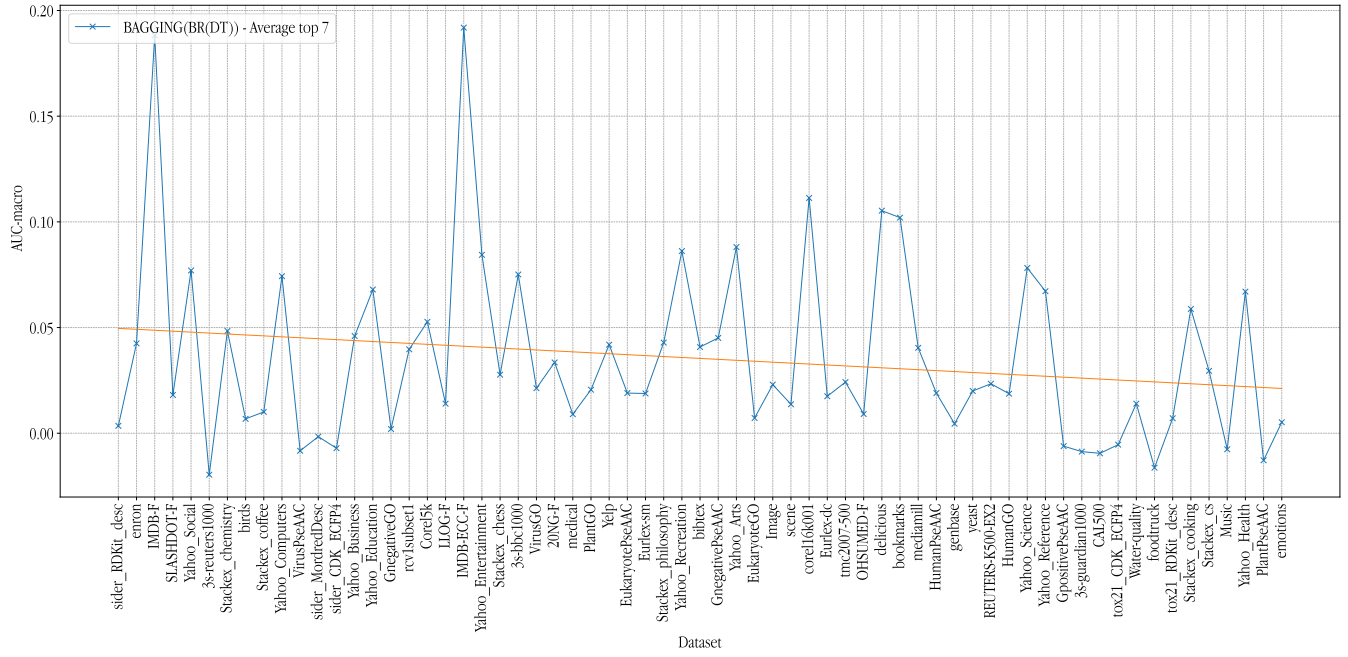


Figure 312: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

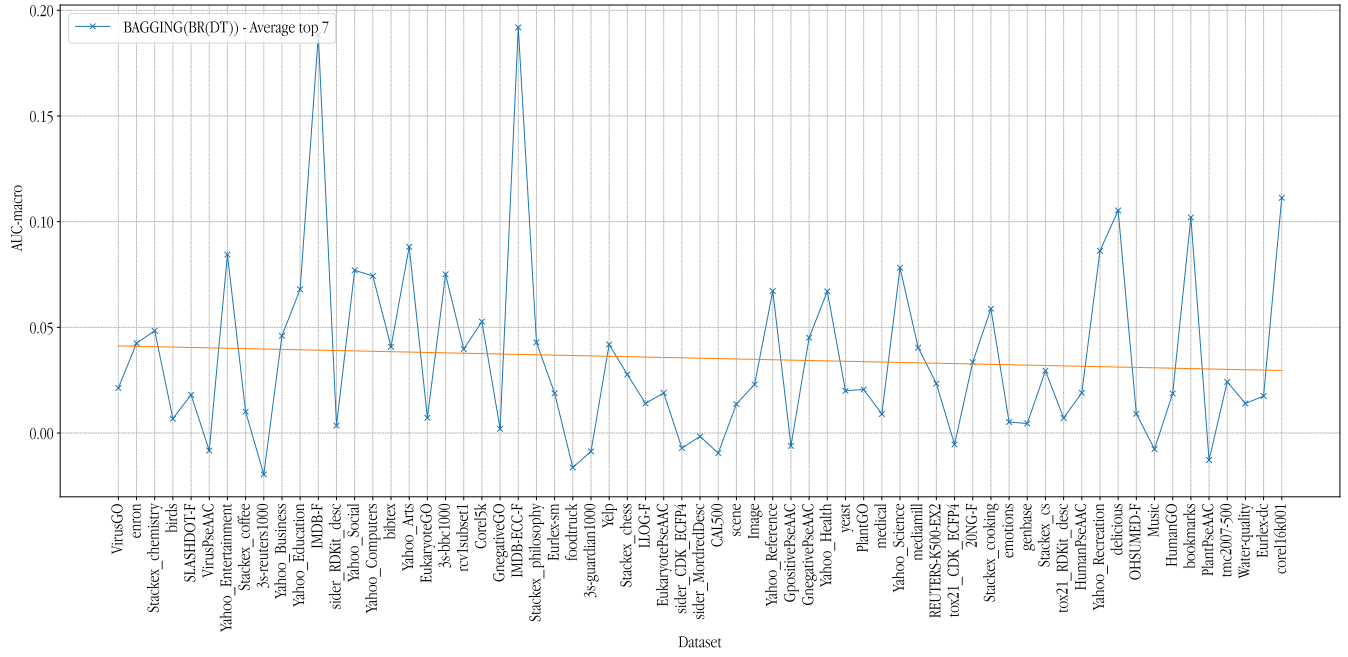


Figure 313: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

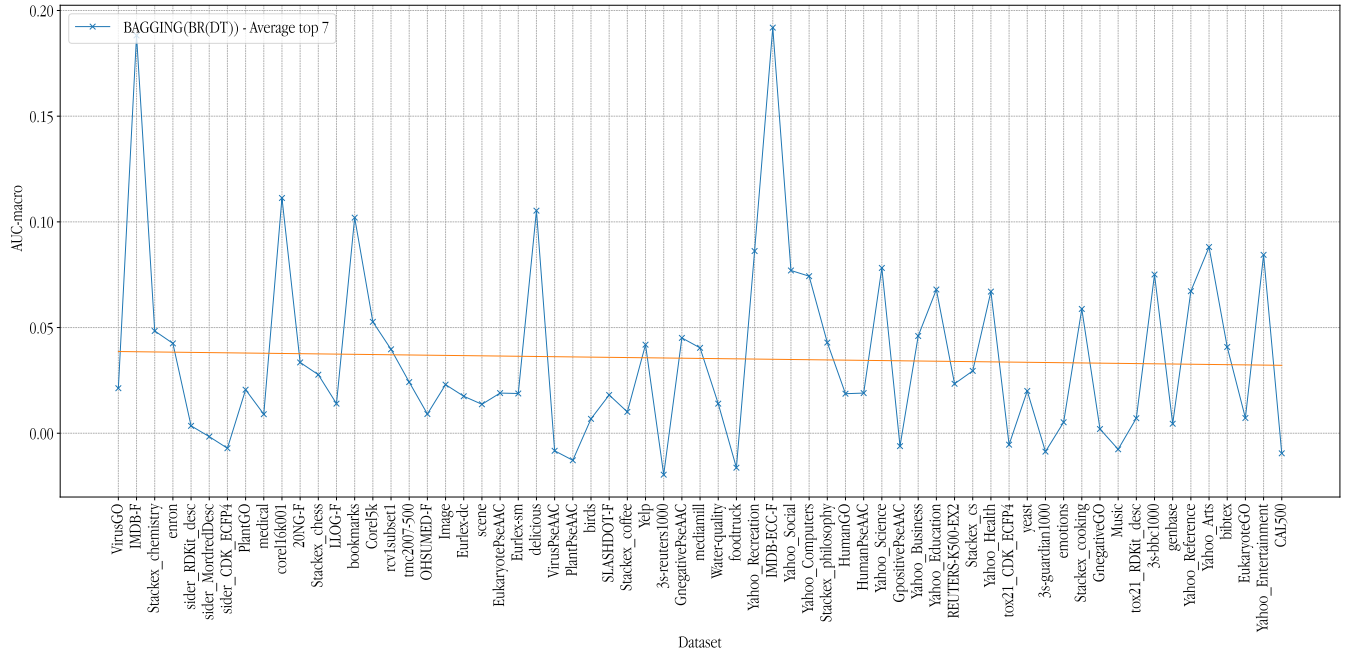


Figure 314: Difference in AUC-macro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

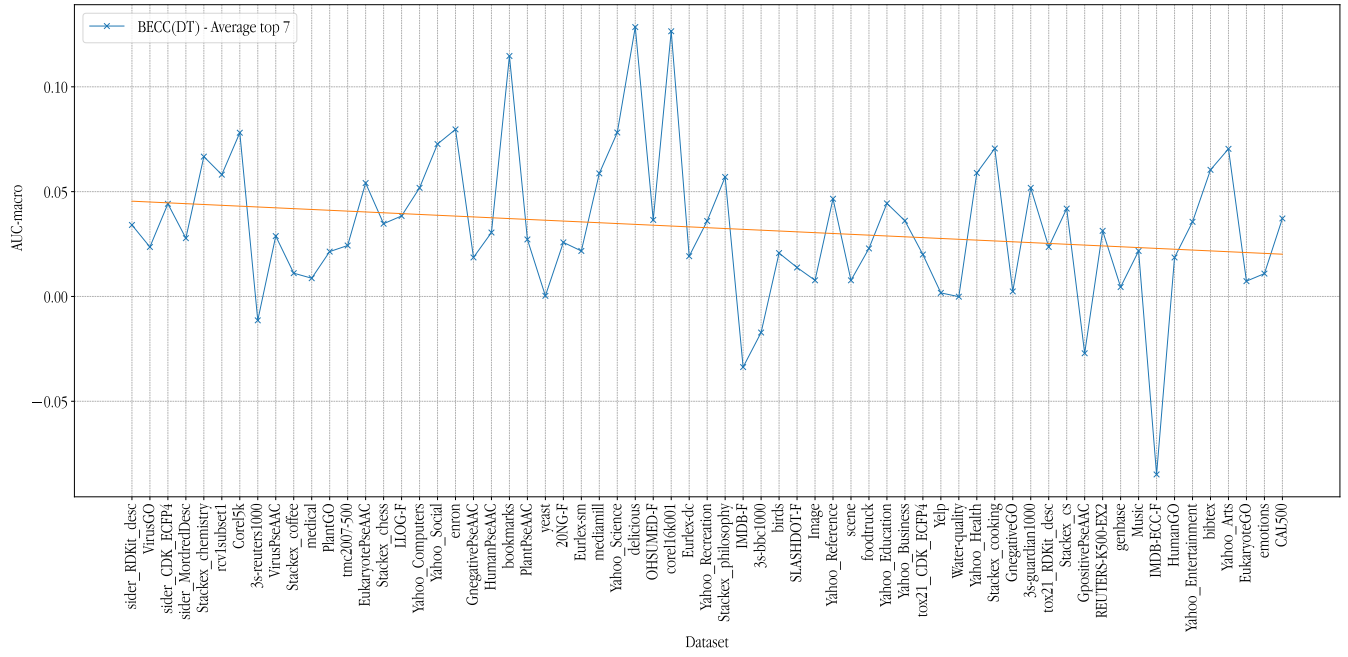


Figure 315: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

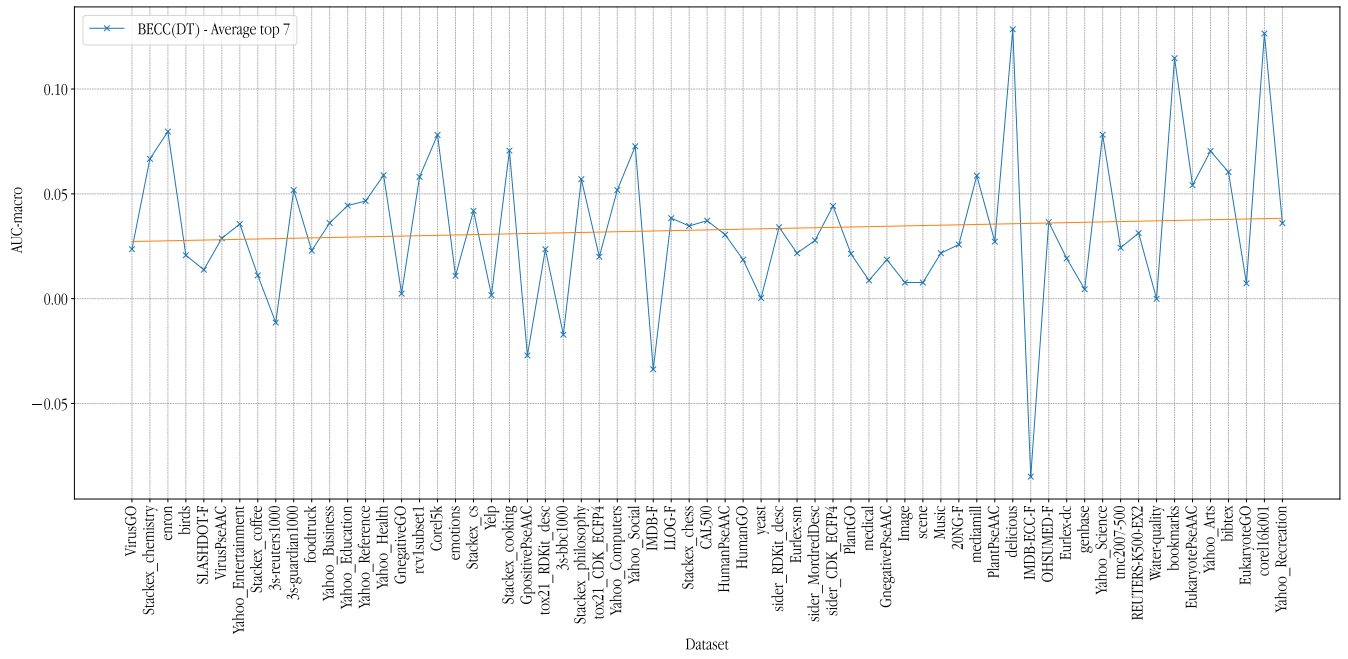


Figure 316: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

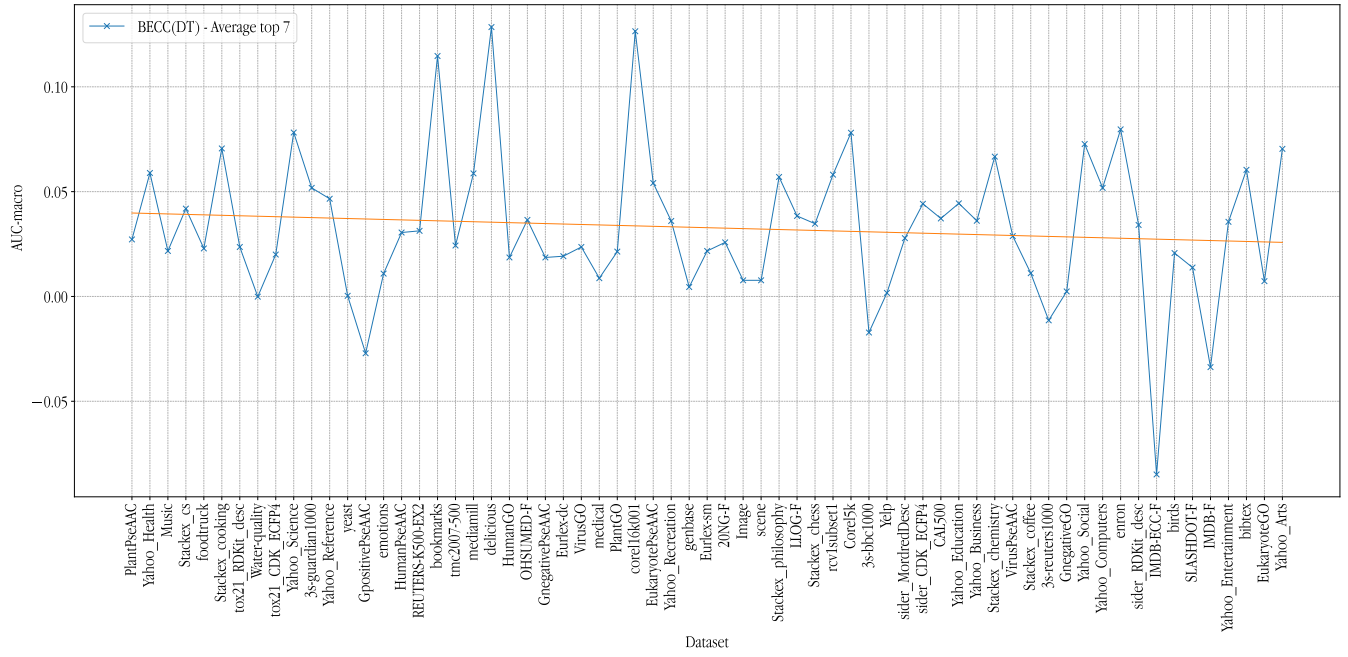


Figure 317: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

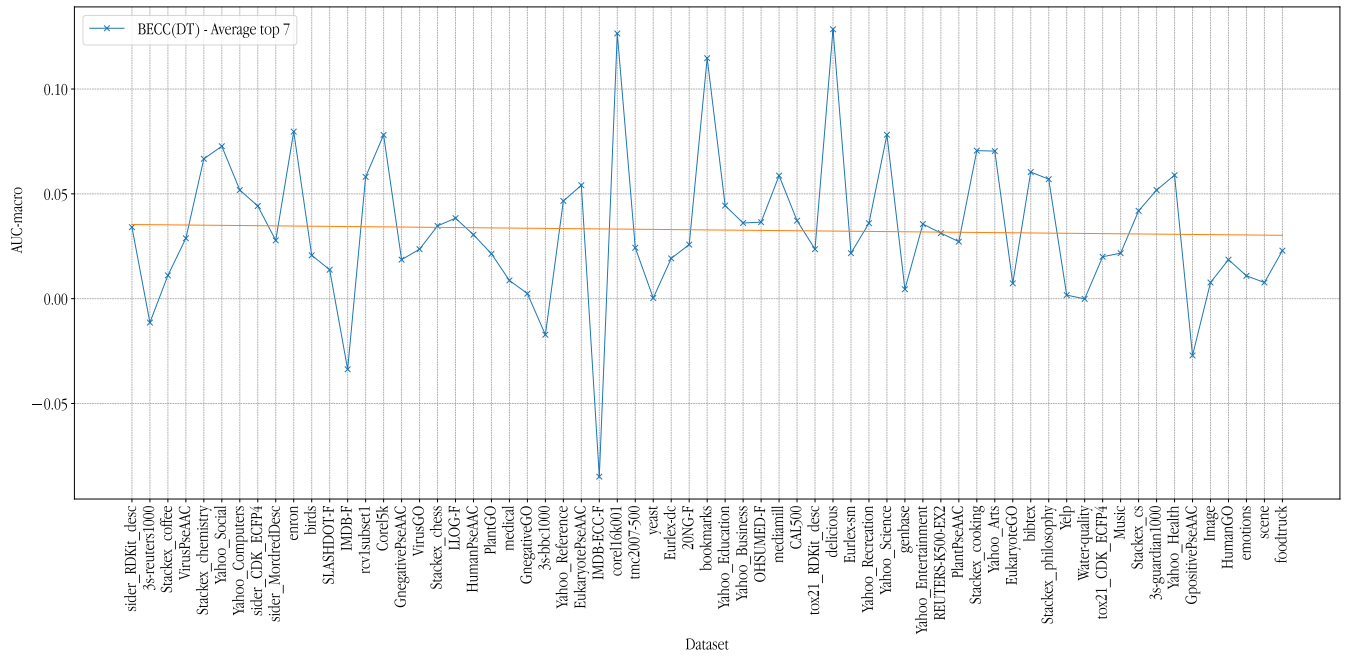


Figure 318: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

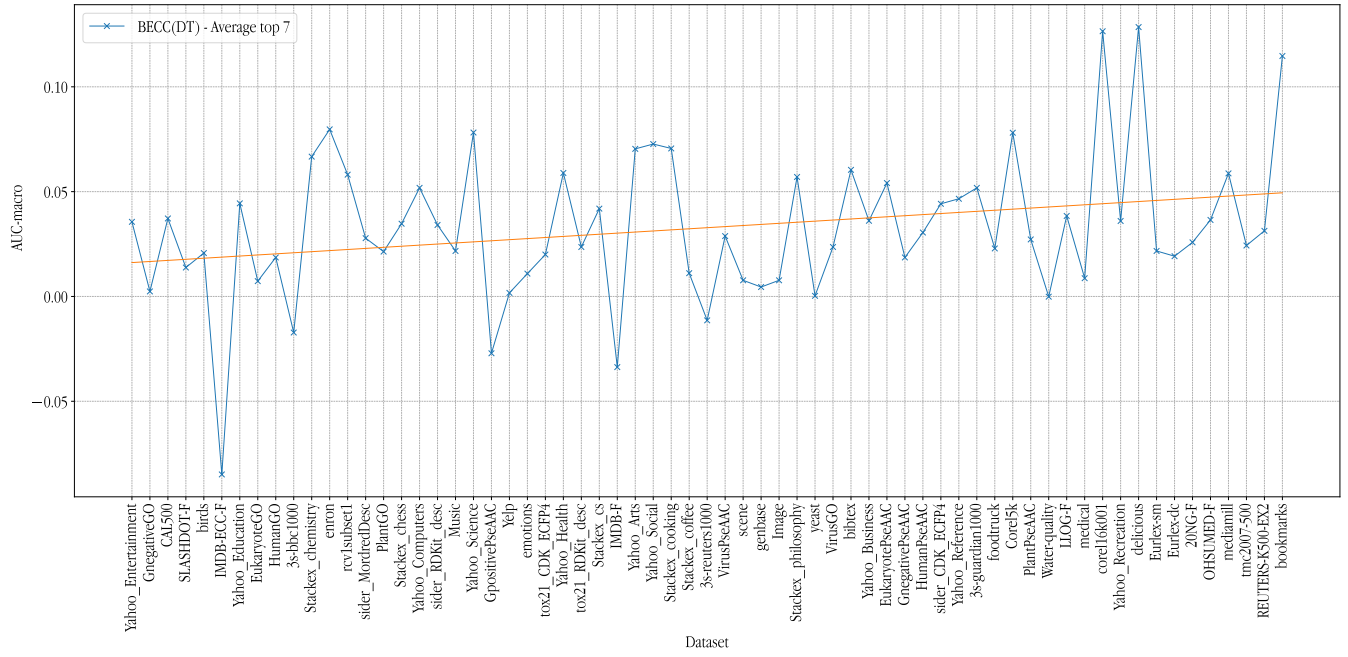


Figure 319: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

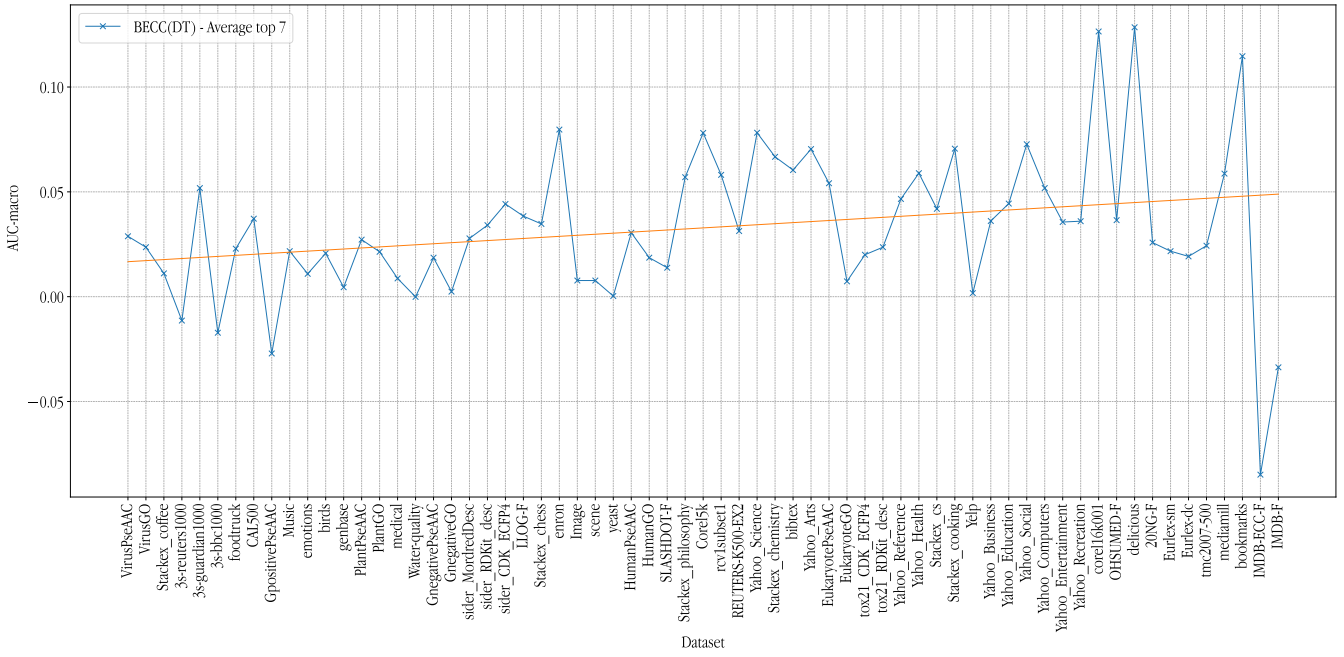


Figure 320: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

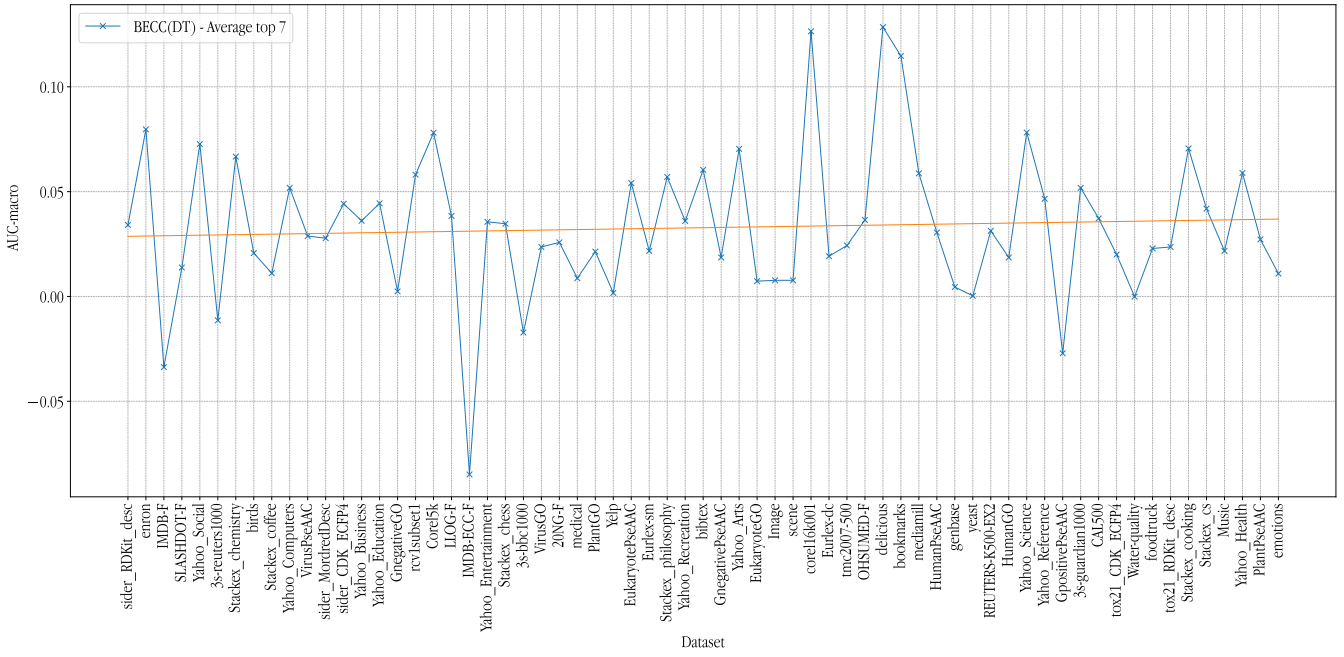


Figure 321: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

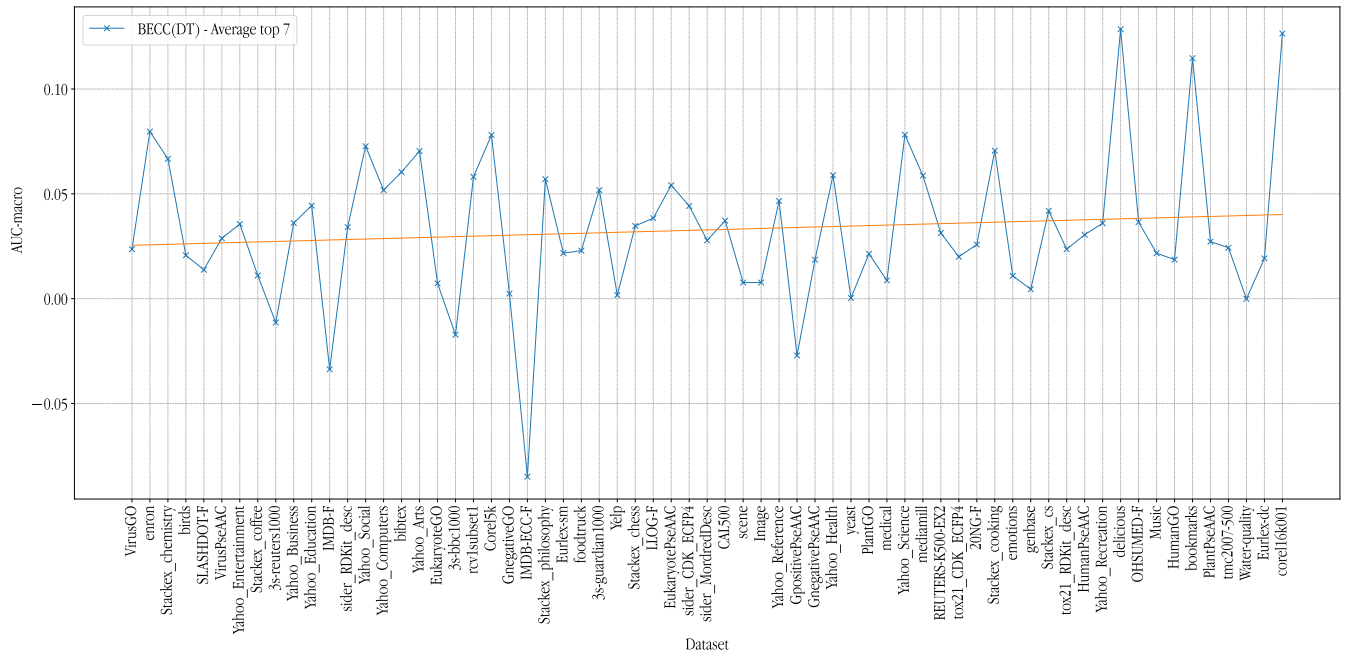


Figure 322: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

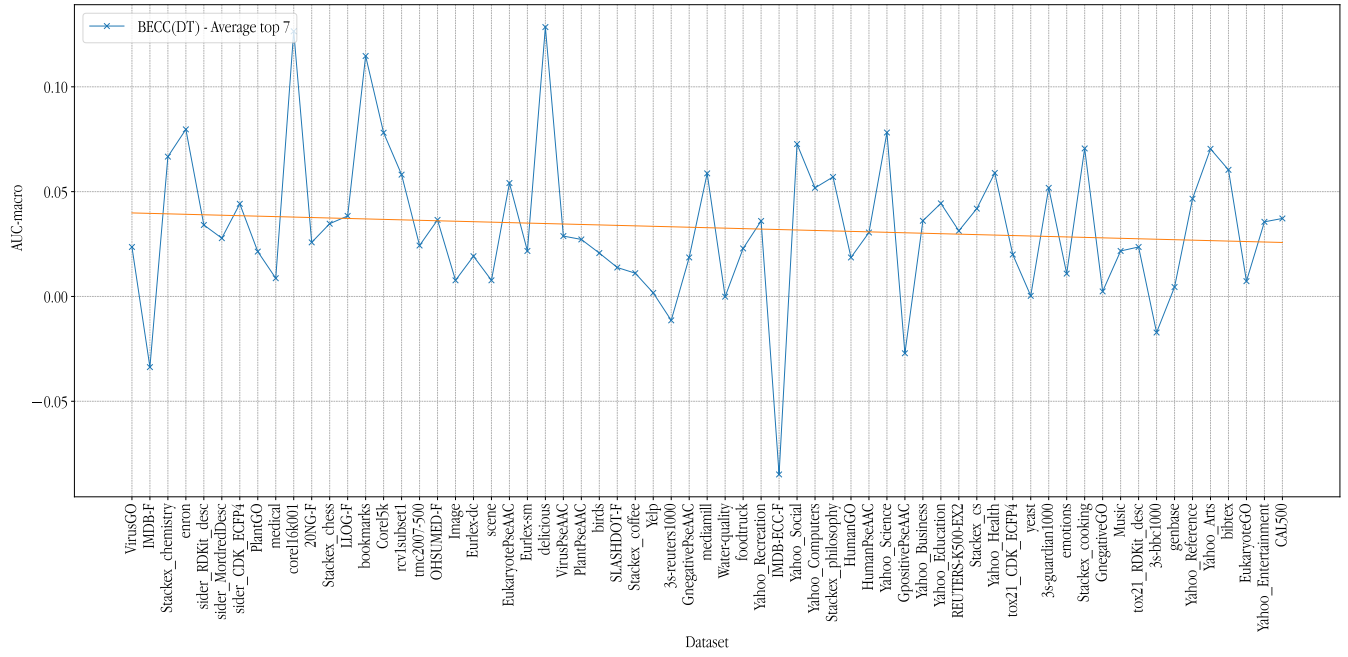


Figure 323: Difference in AUC-macro performance between BECC and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

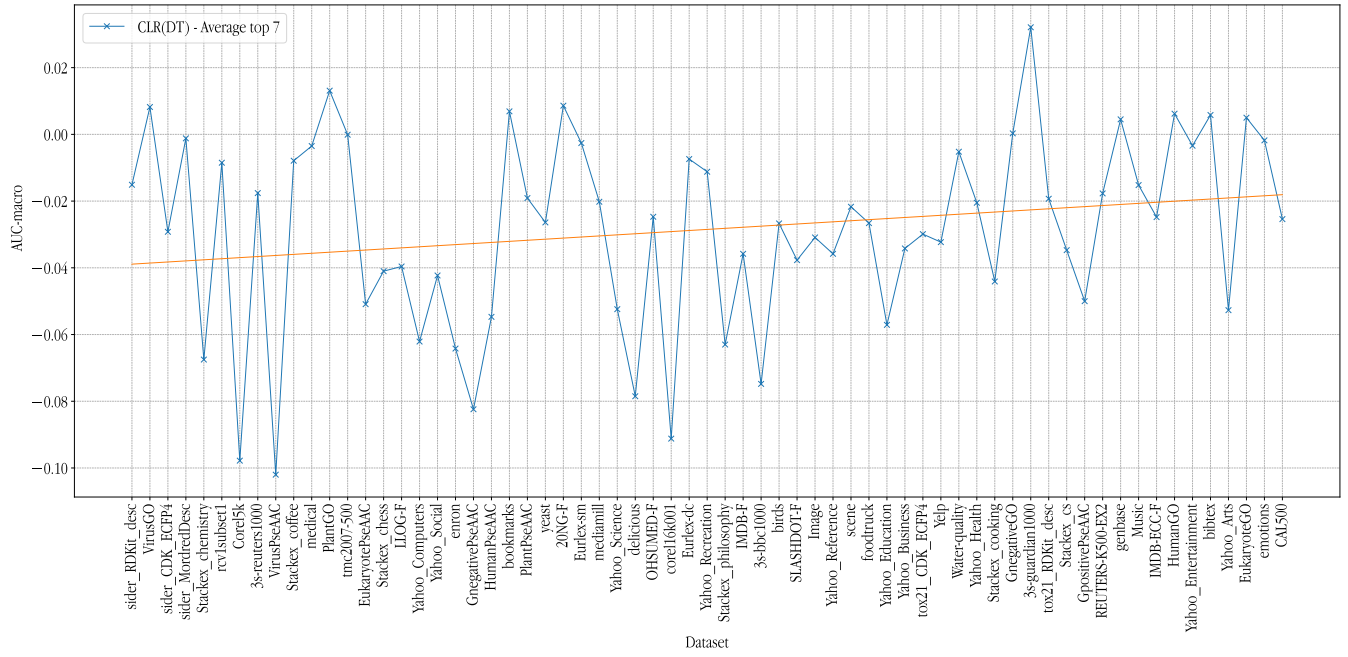


Figure 324: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

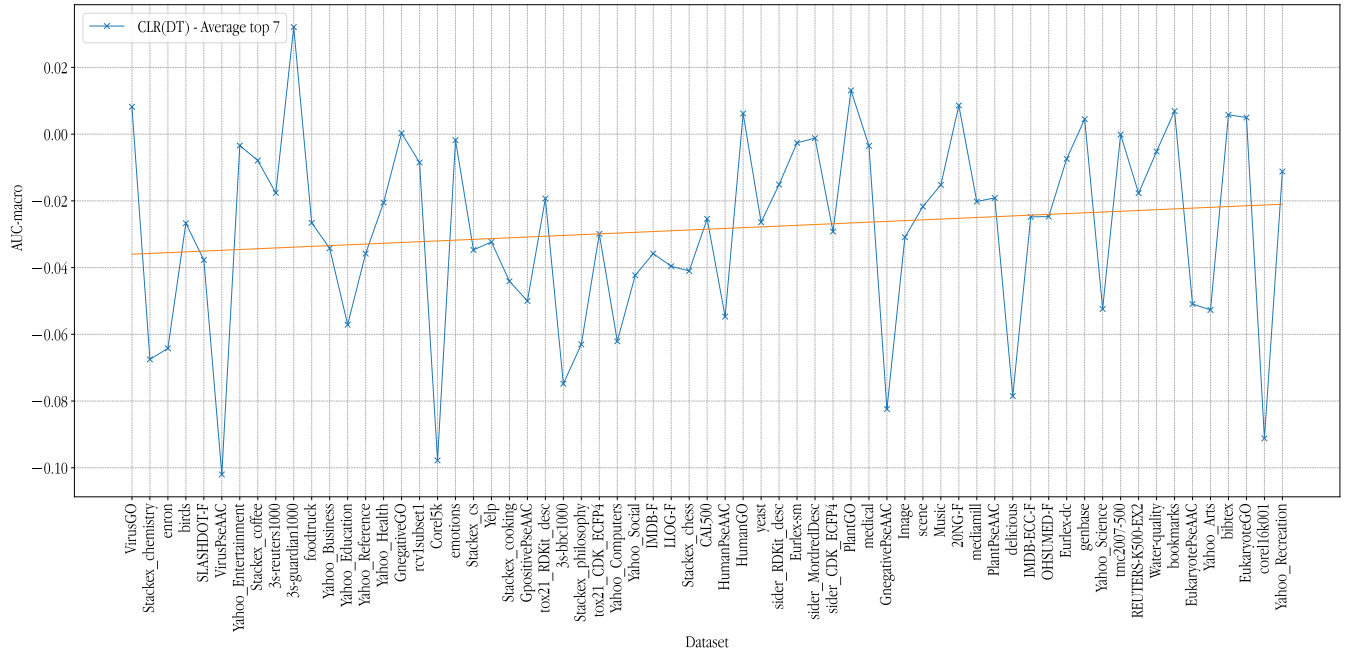


Figure 325: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

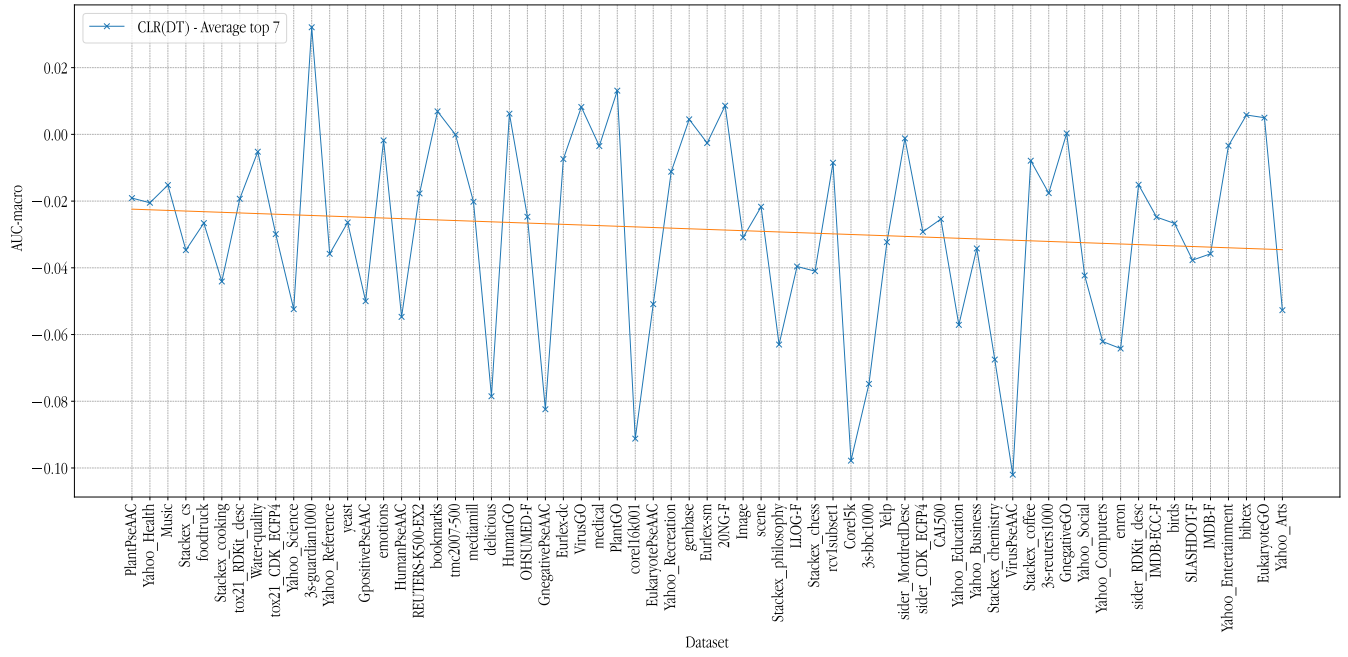


Figure 326: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

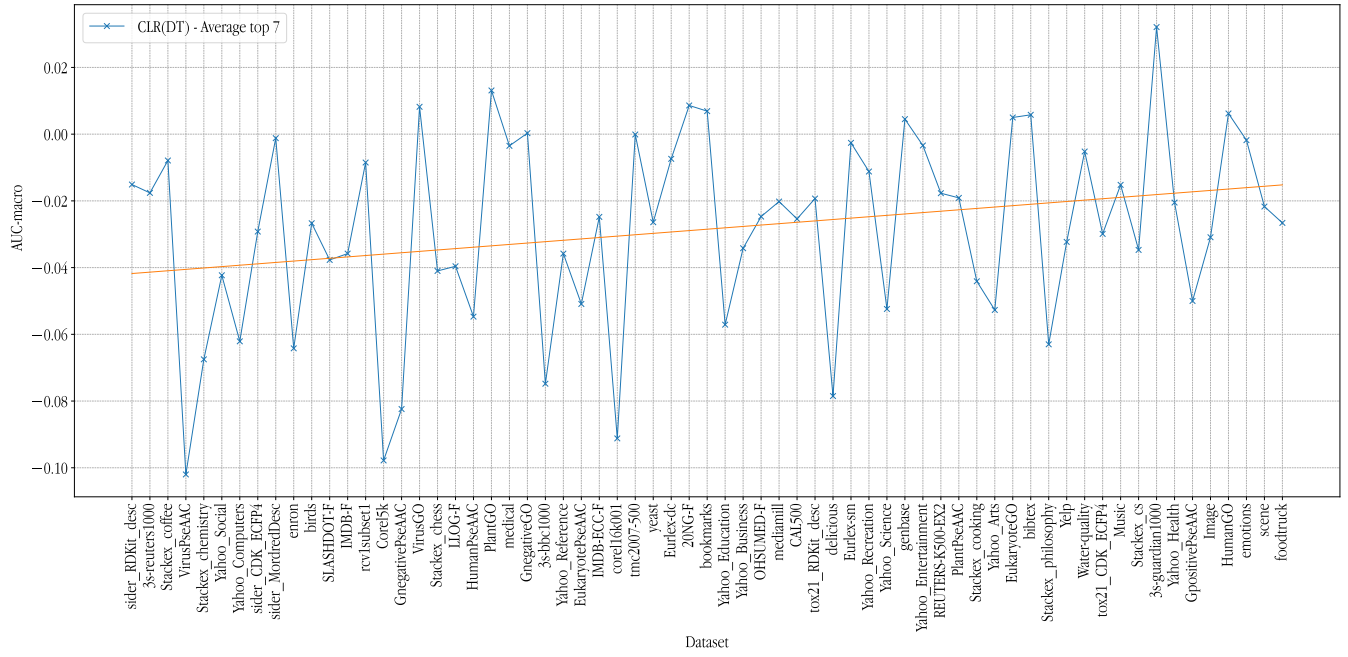


Figure 327: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

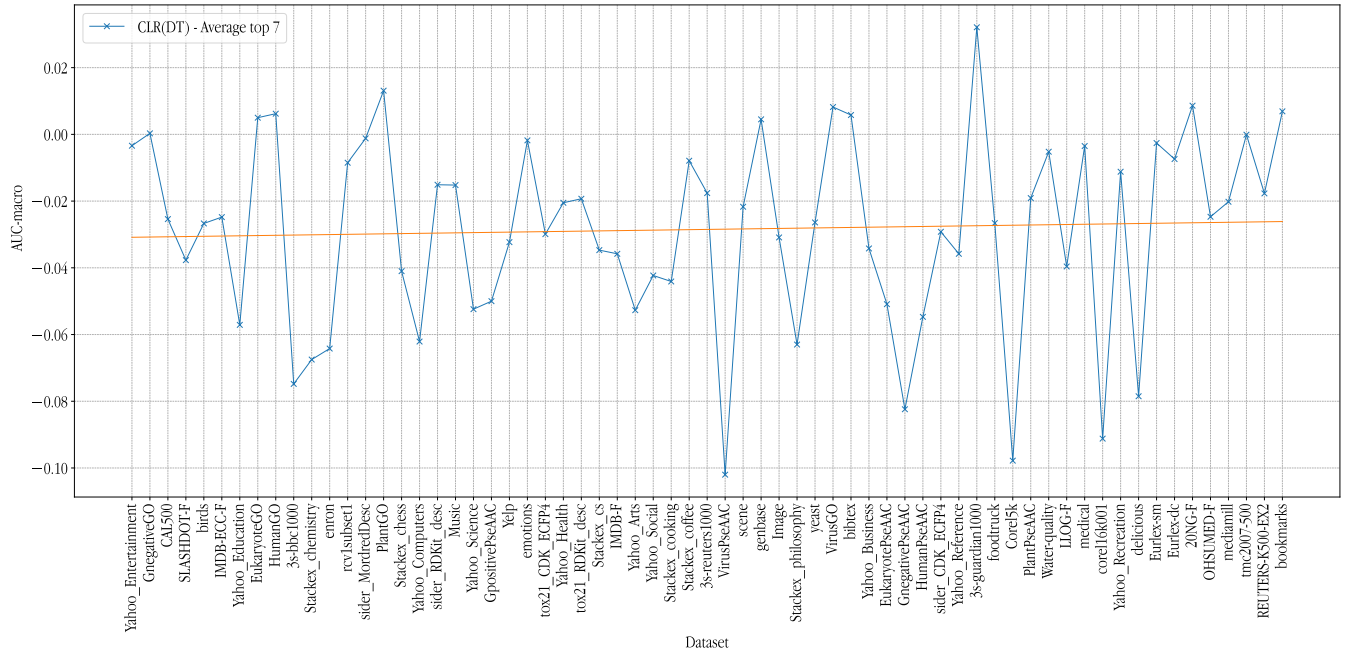


Figure 328: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

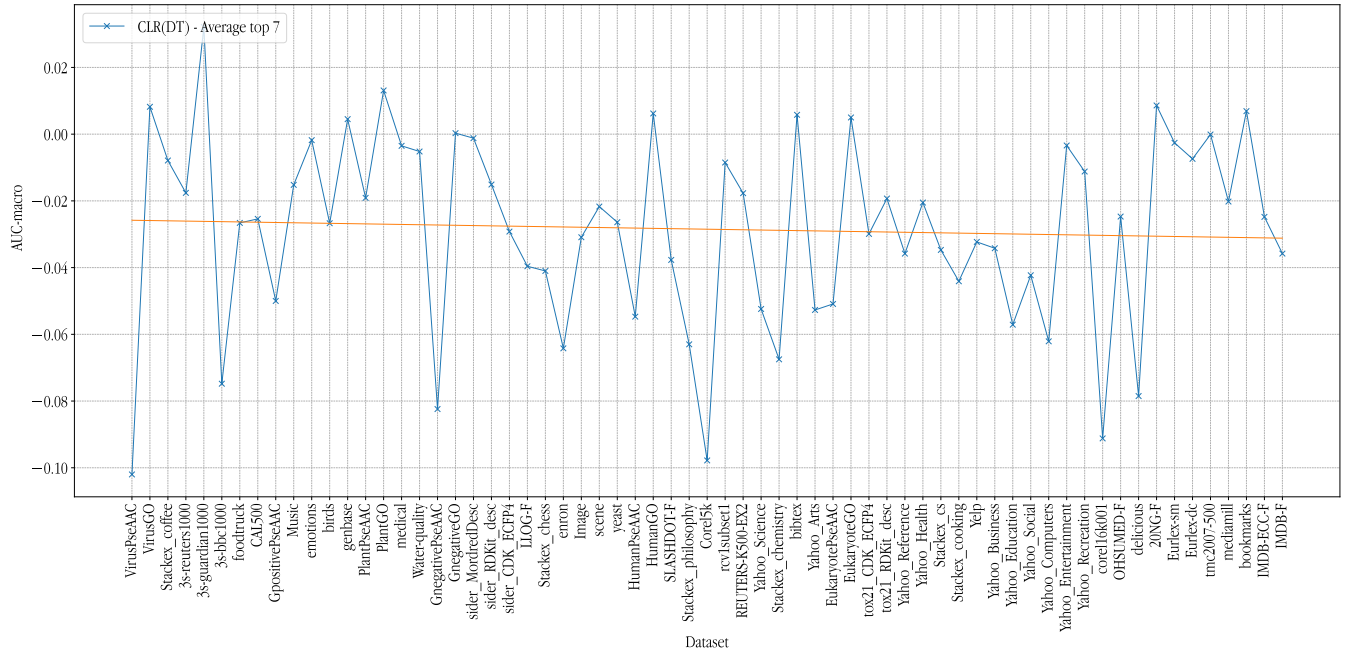


Figure 329: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

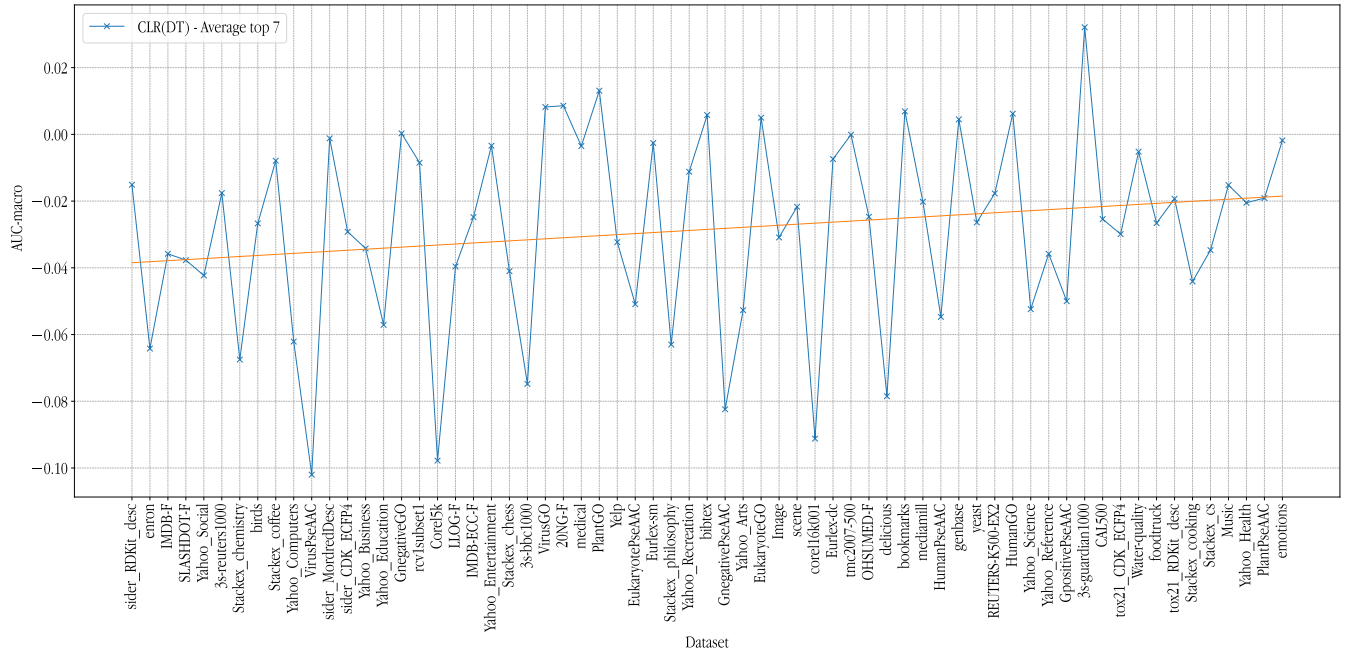


Figure 330: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

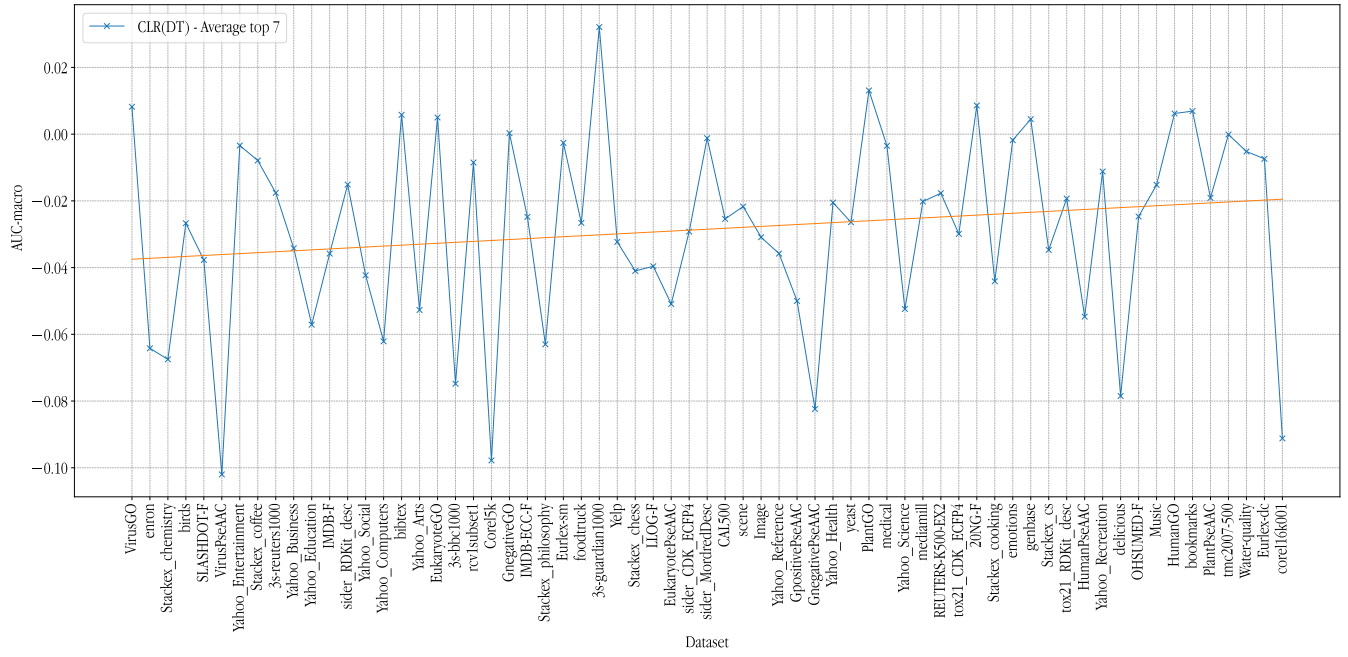


Figure 331: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

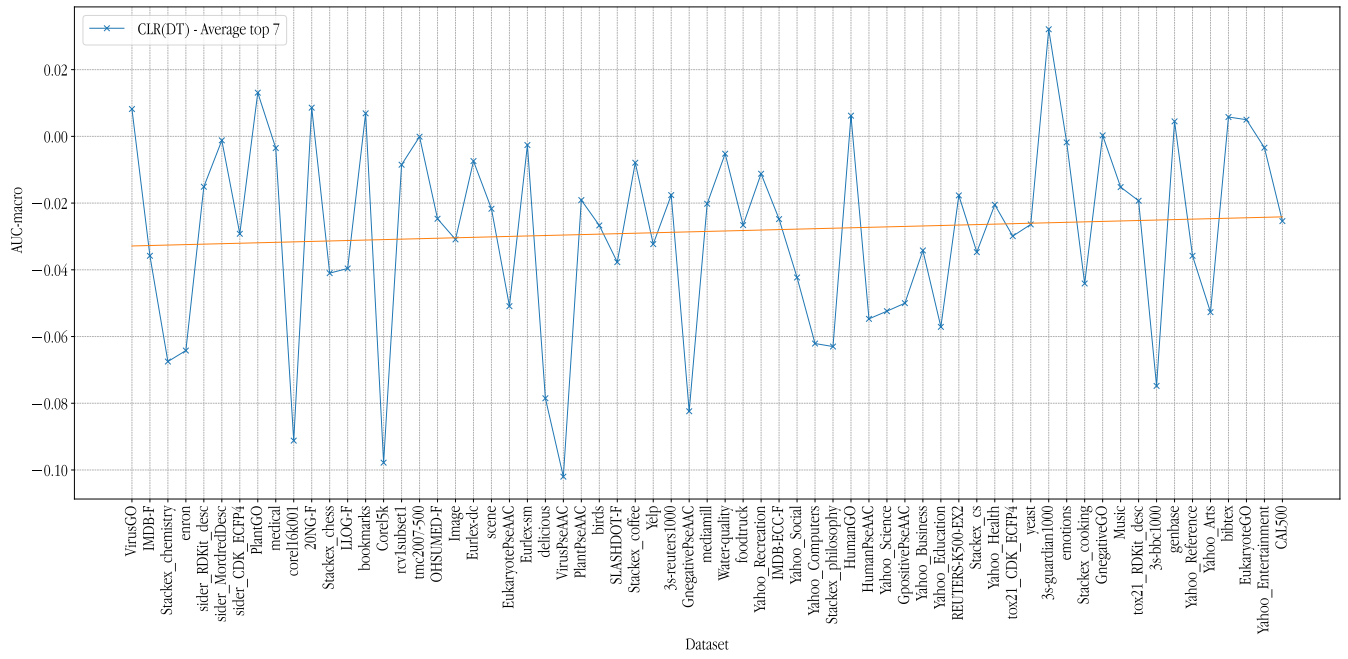


Figure 332: Difference in AUC-macro performance between CLR(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

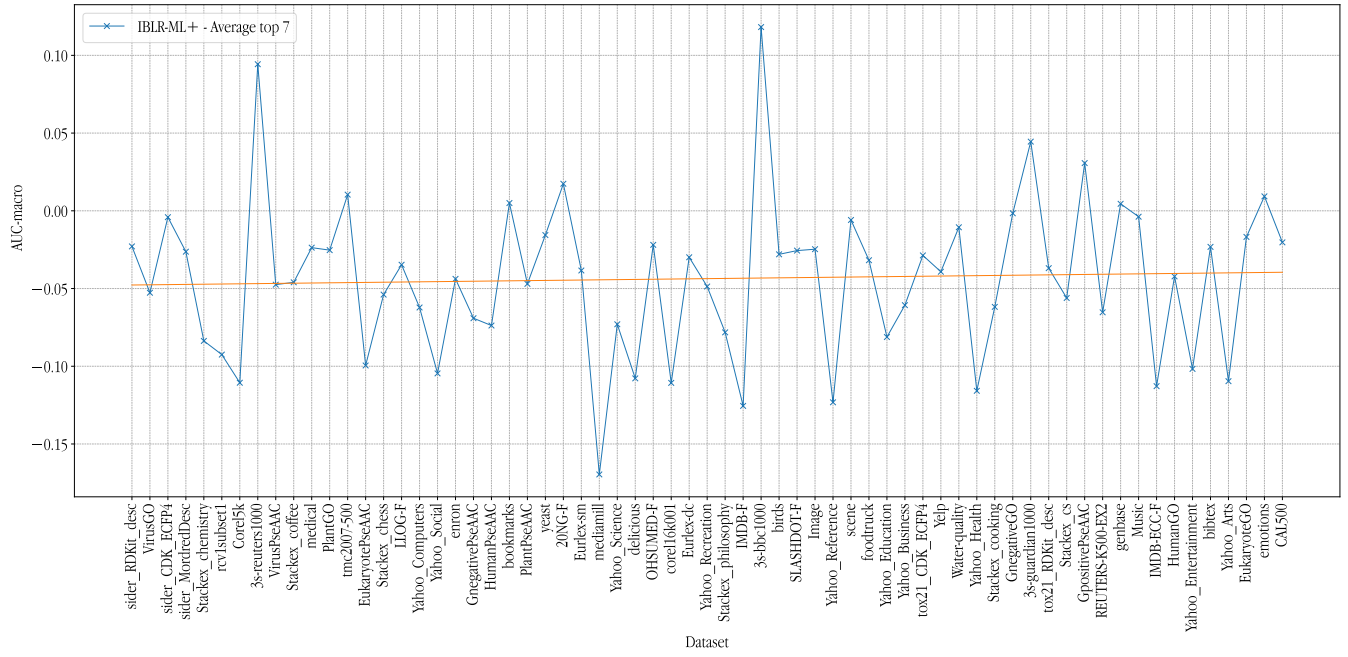


Figure 333: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

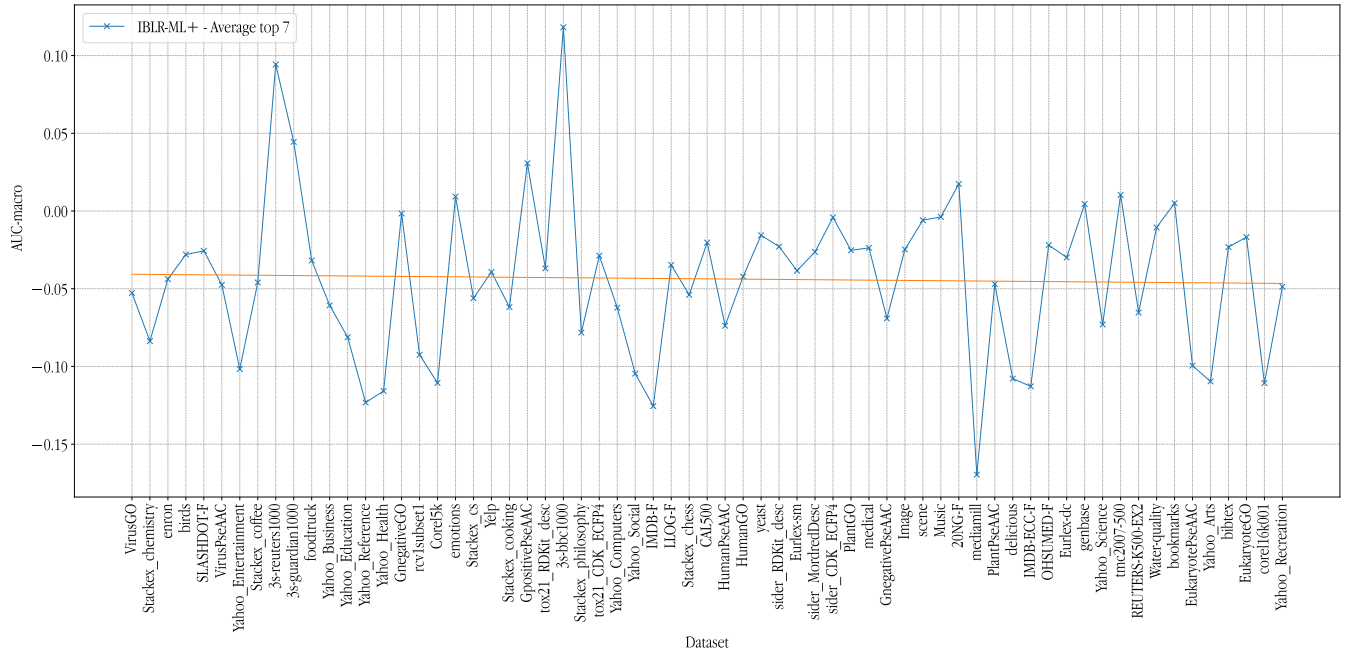


Figure 334: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

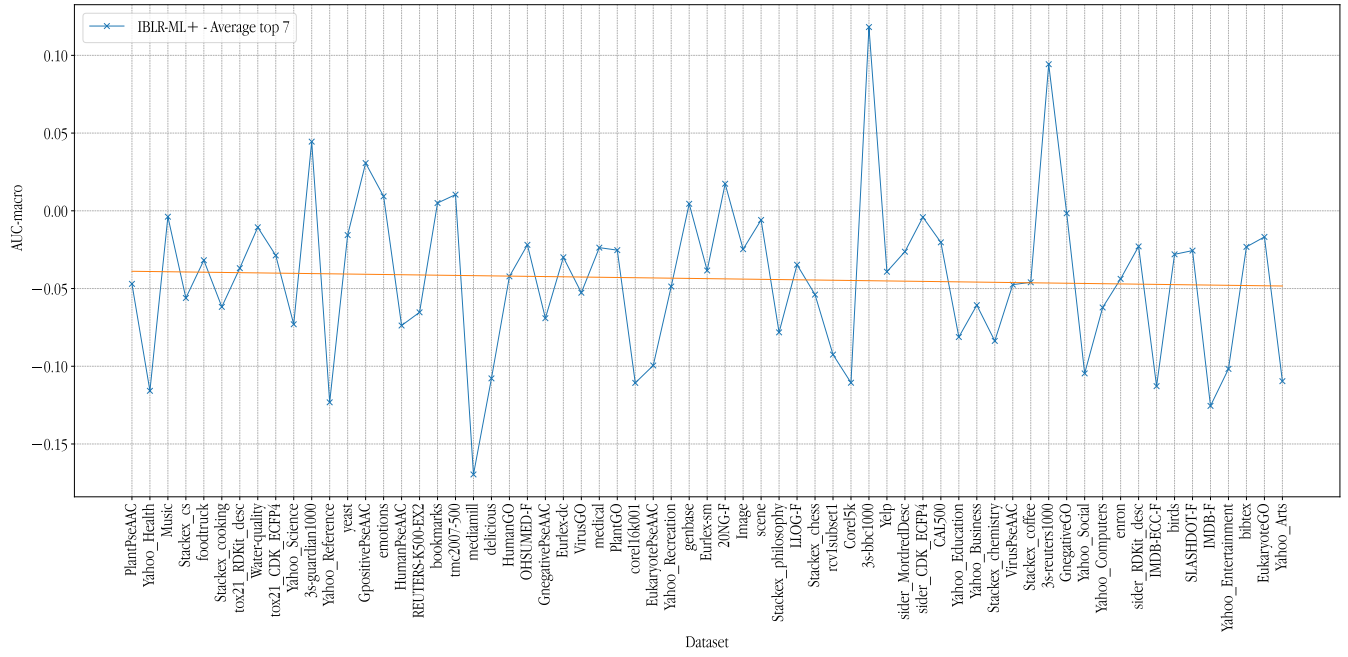


Figure 335: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

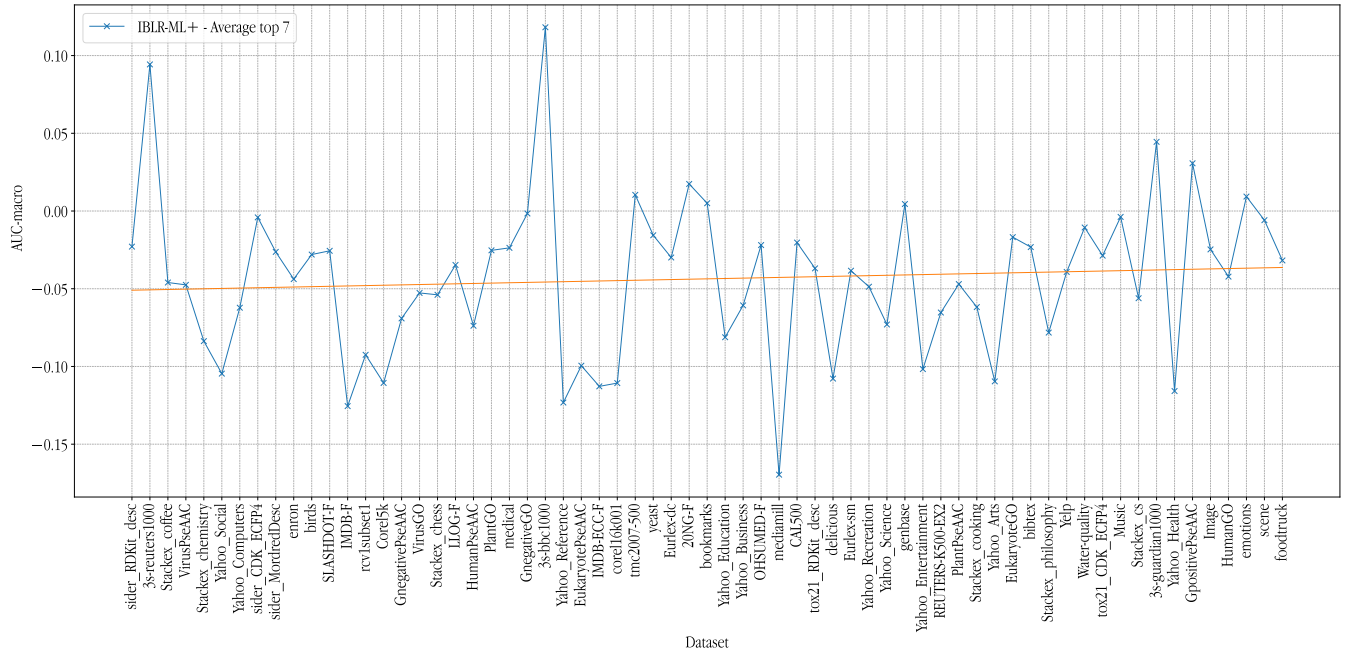


Figure 336: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

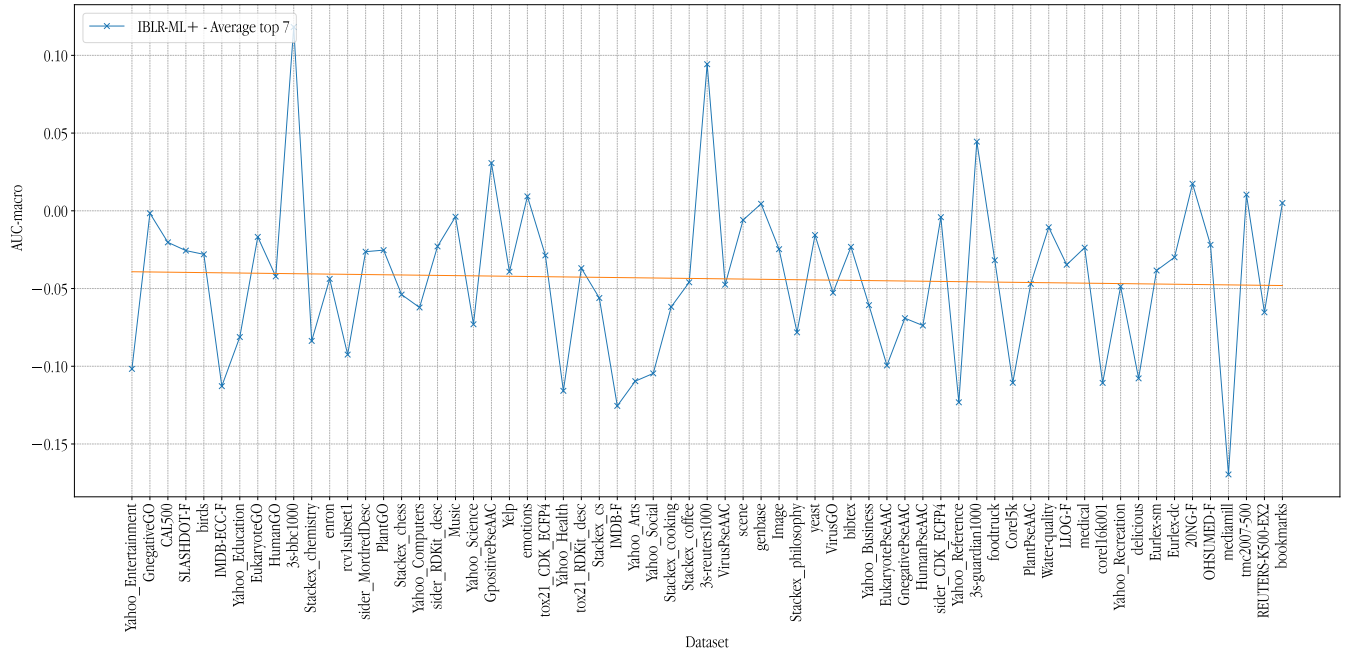


Figure 337: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

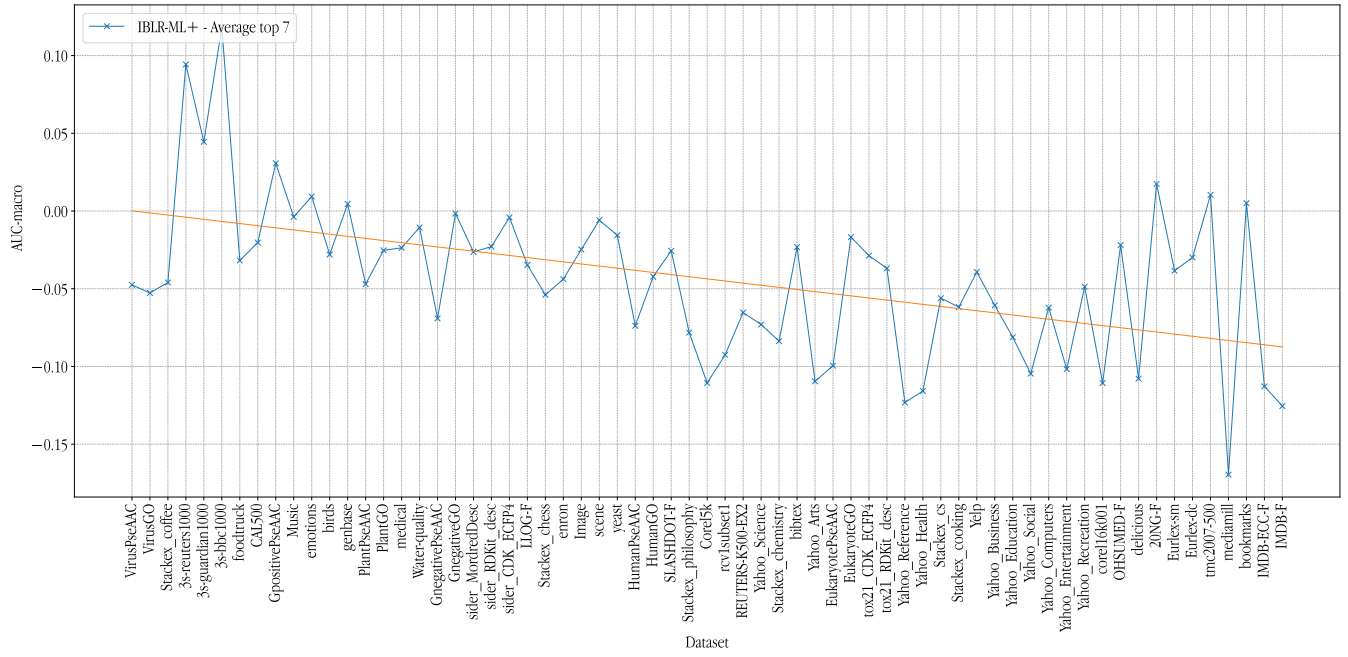


Figure 338: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

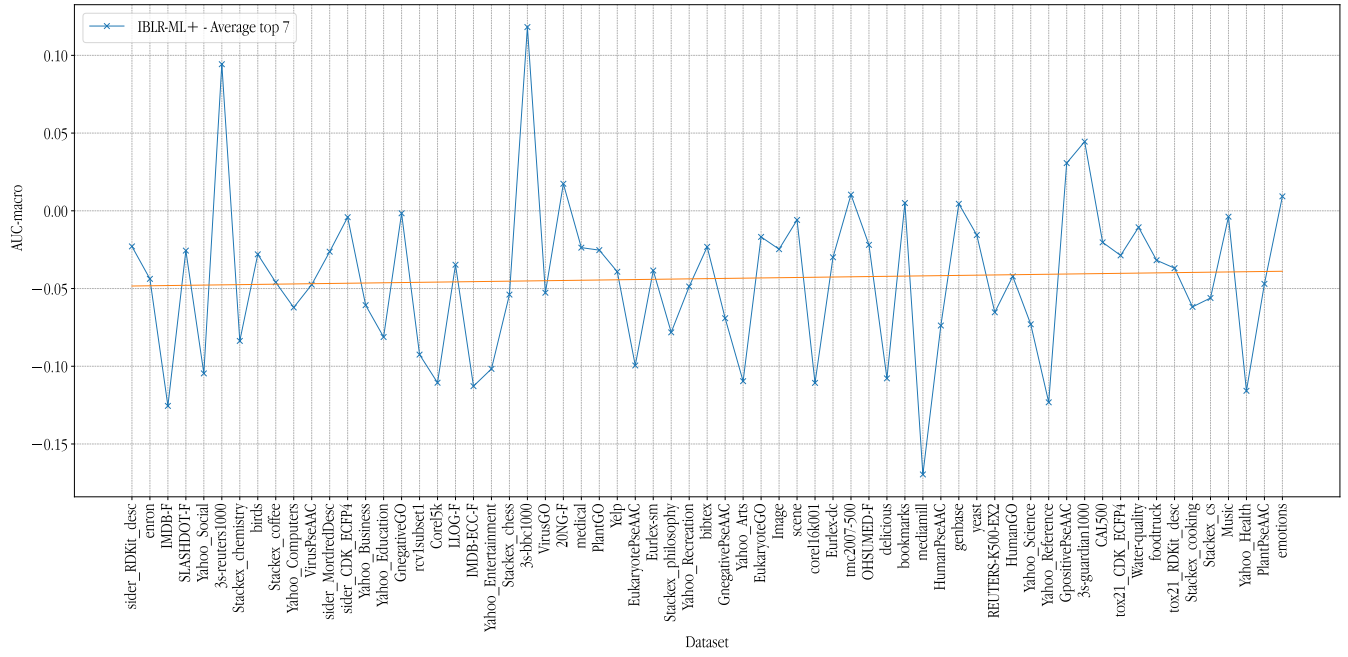


Figure 339: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

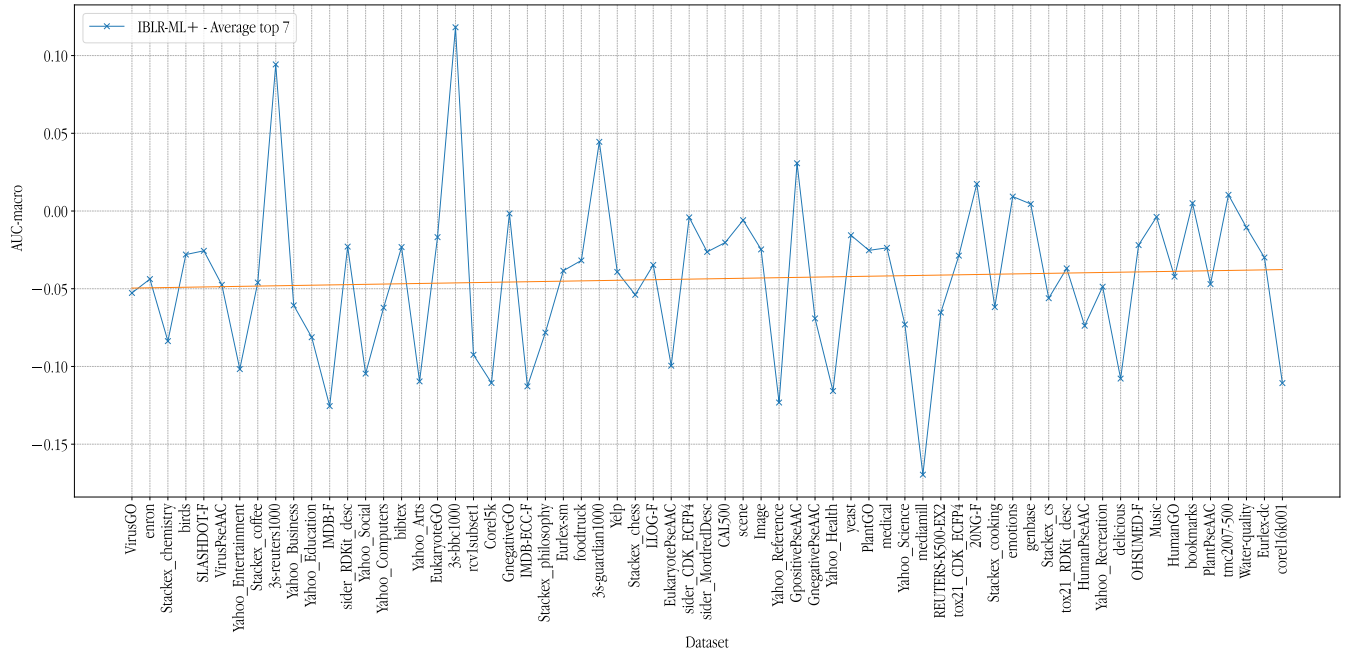


Figure 340: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

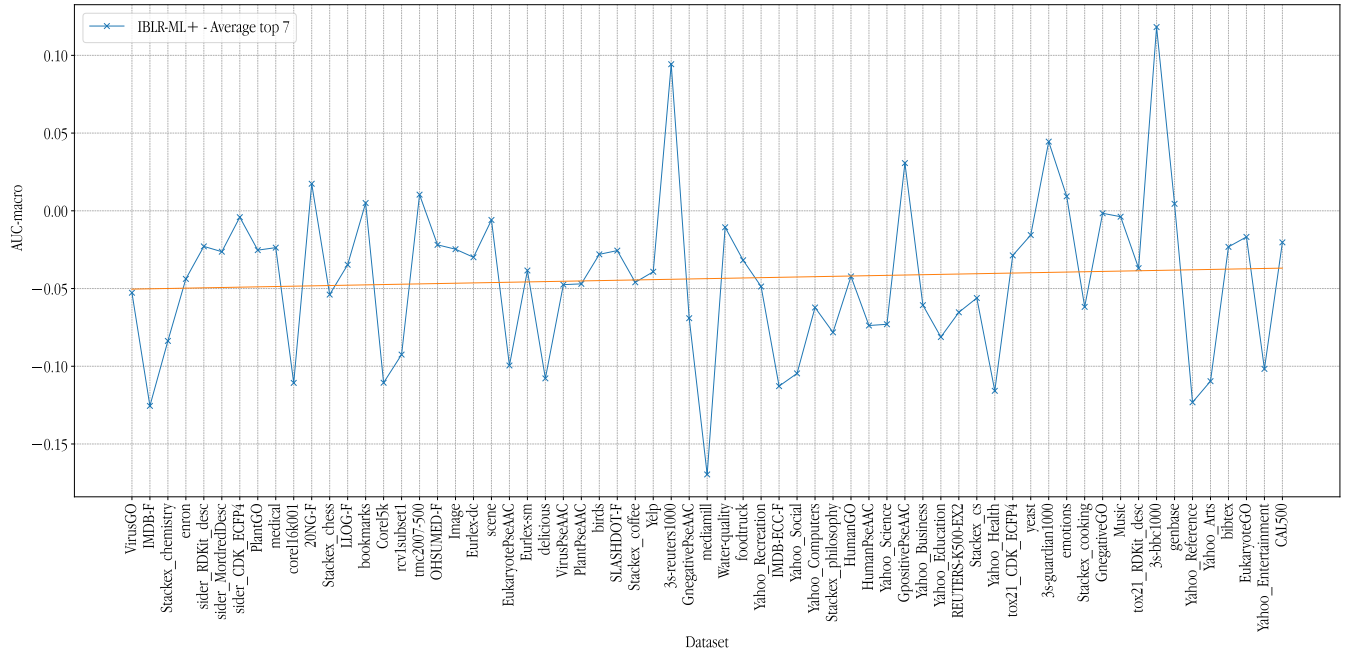


Figure 341: Difference in AUC-macro performance between IBLR-ML+ and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

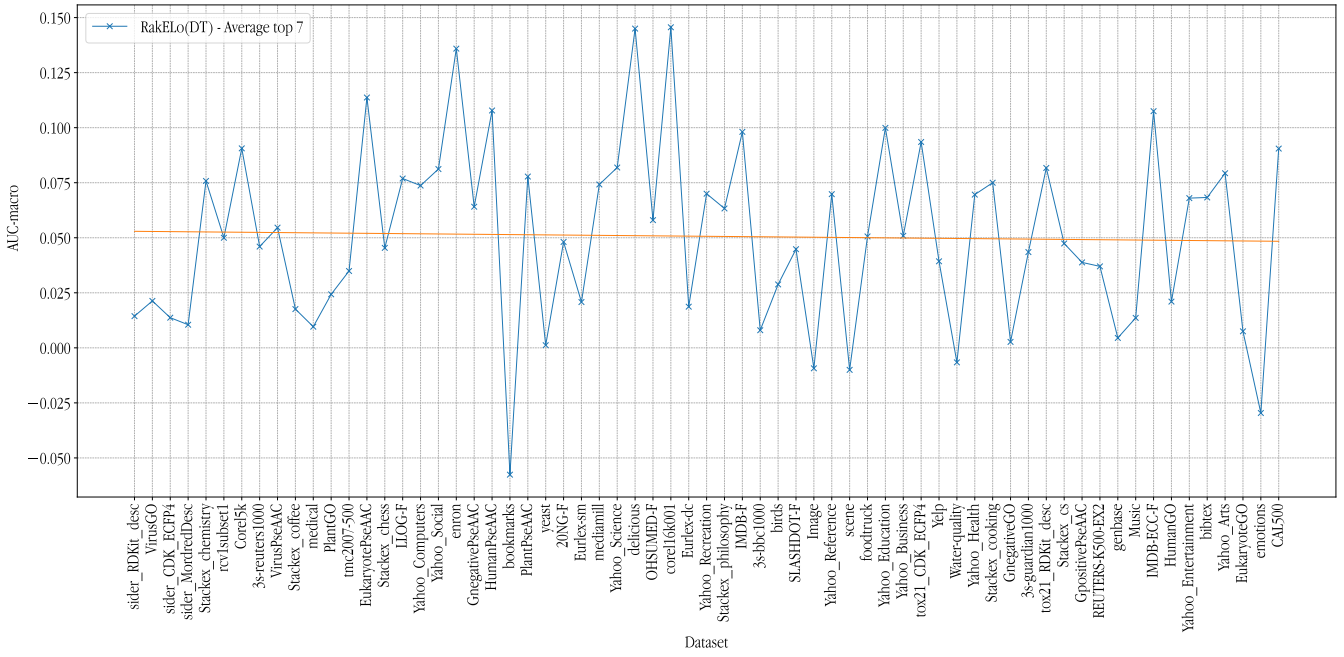


Figure 342: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

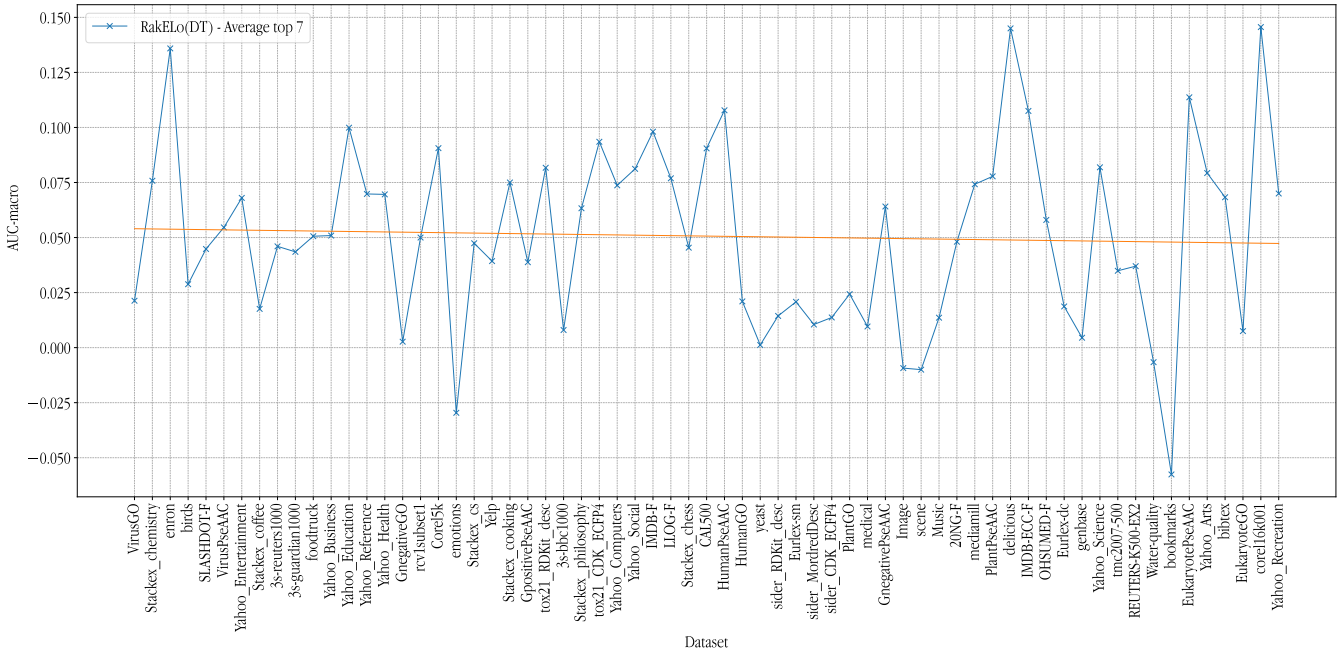


Figure 343: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

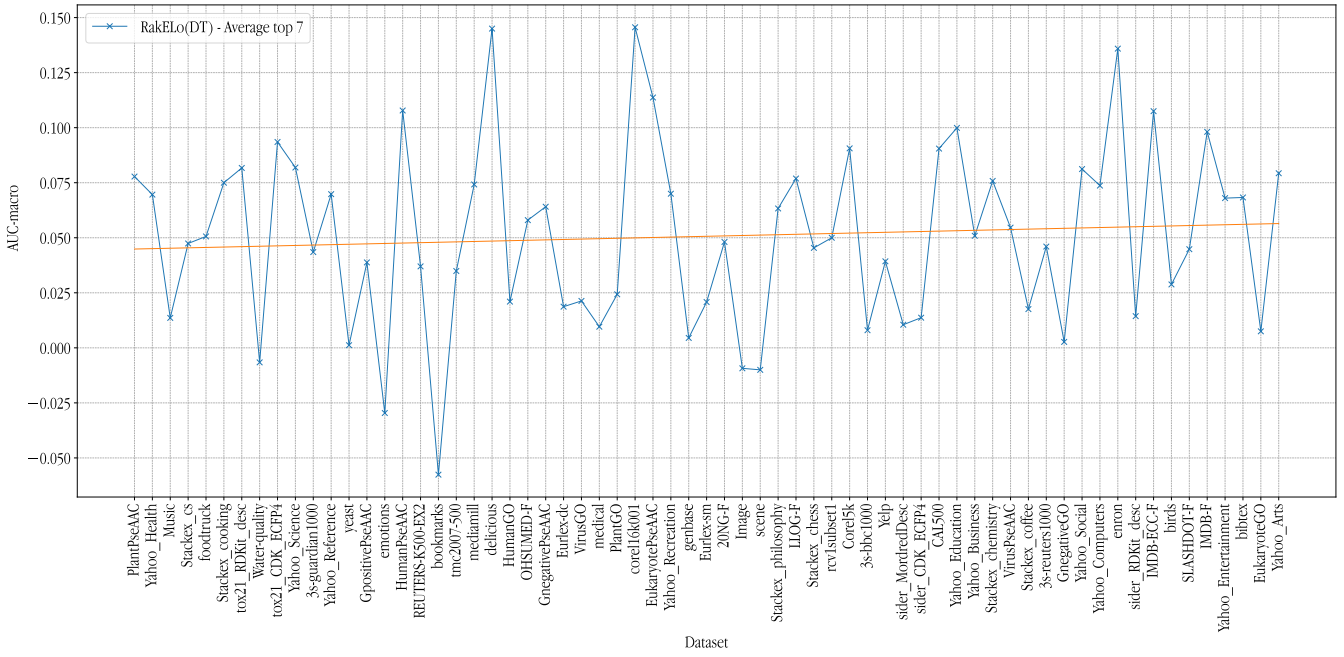


Figure 344: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

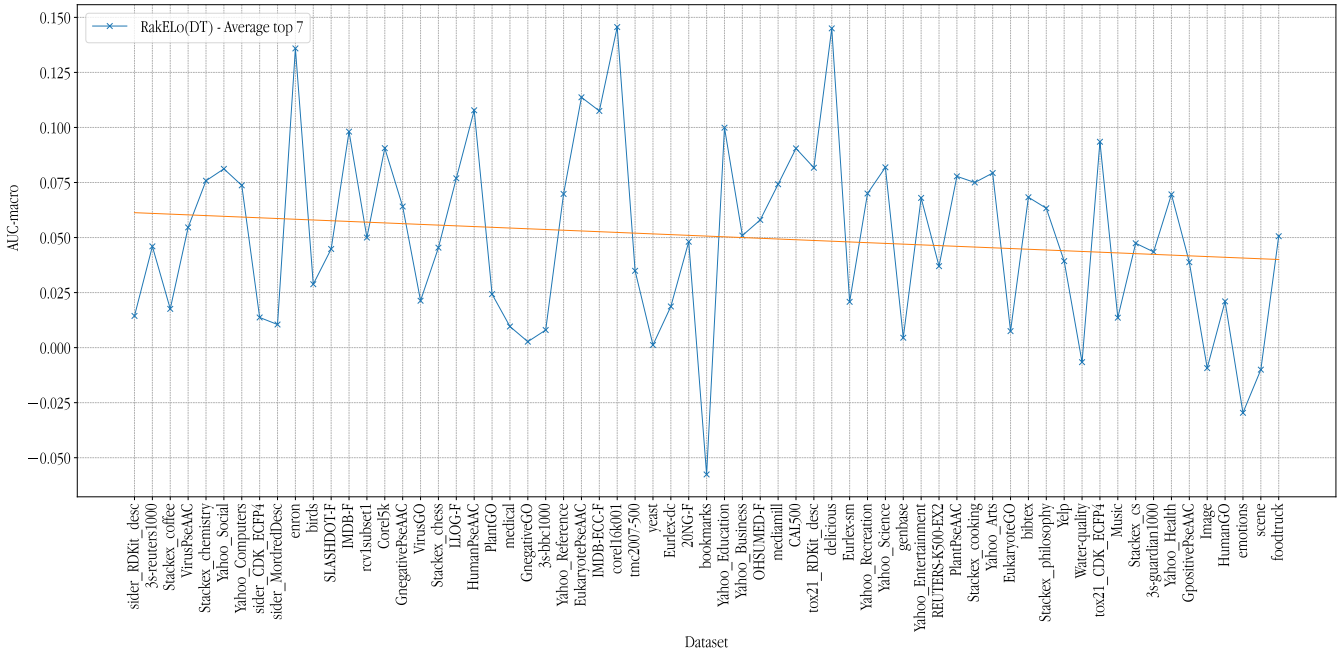


Figure 345: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

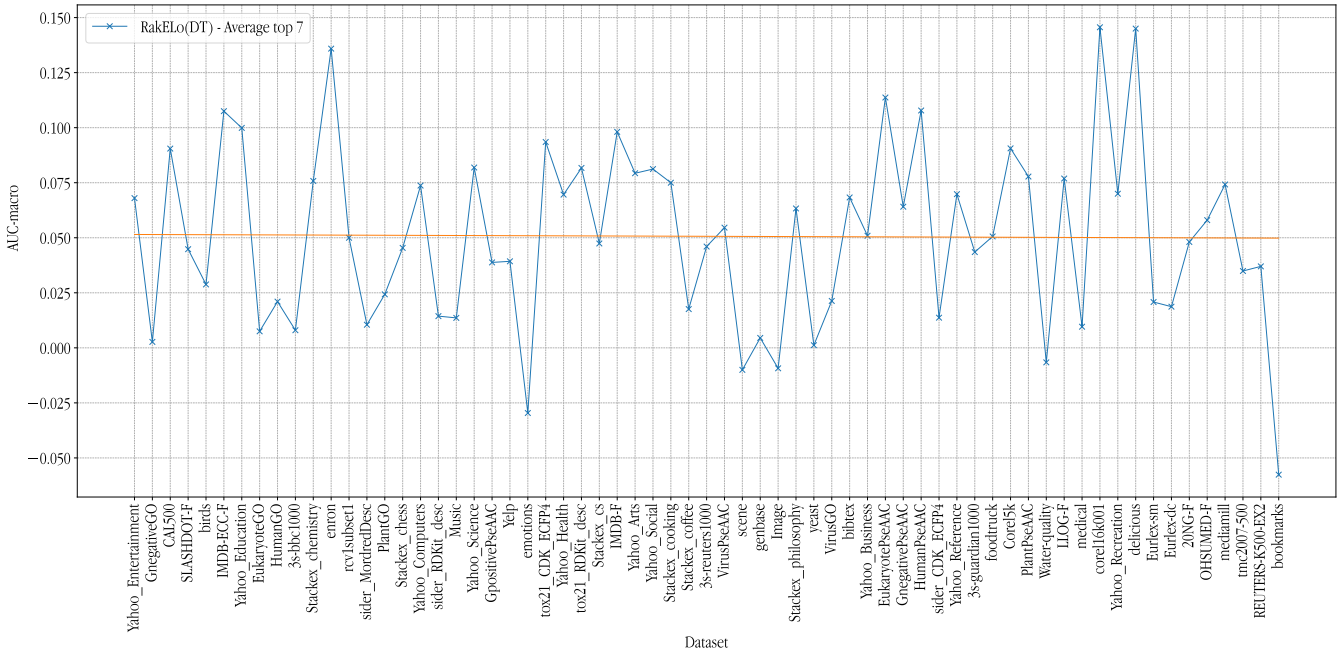


Figure 346: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

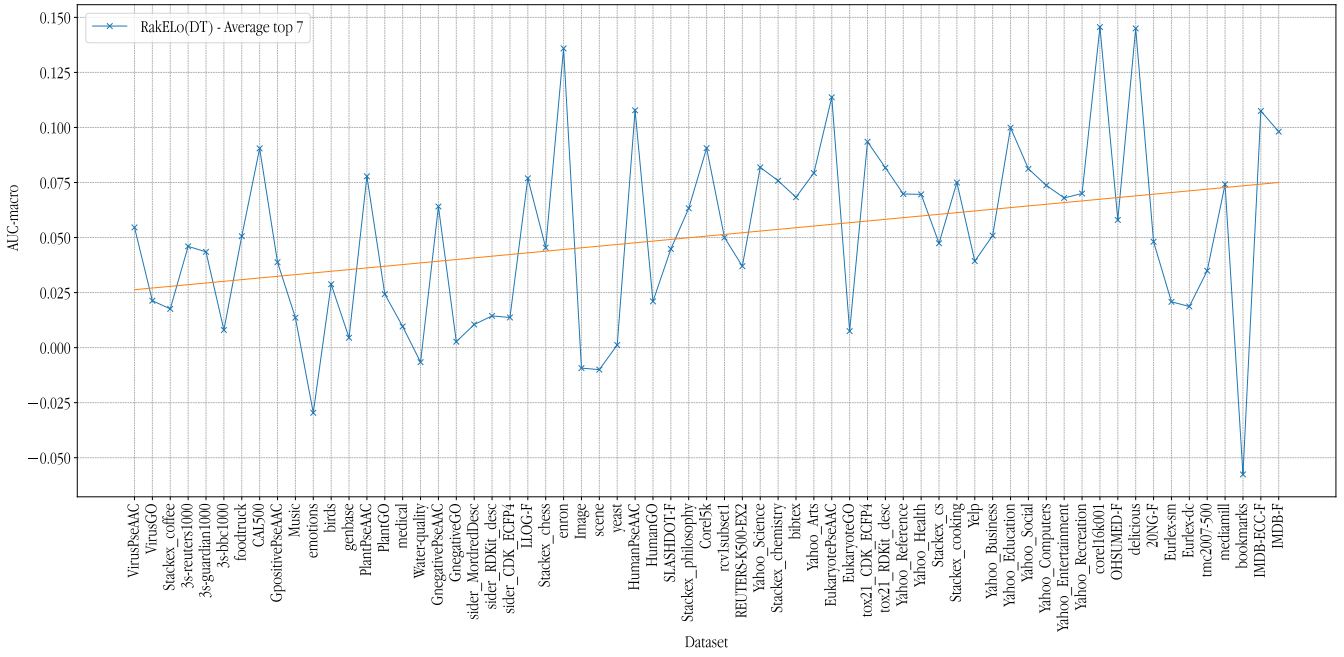


Figure 347: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

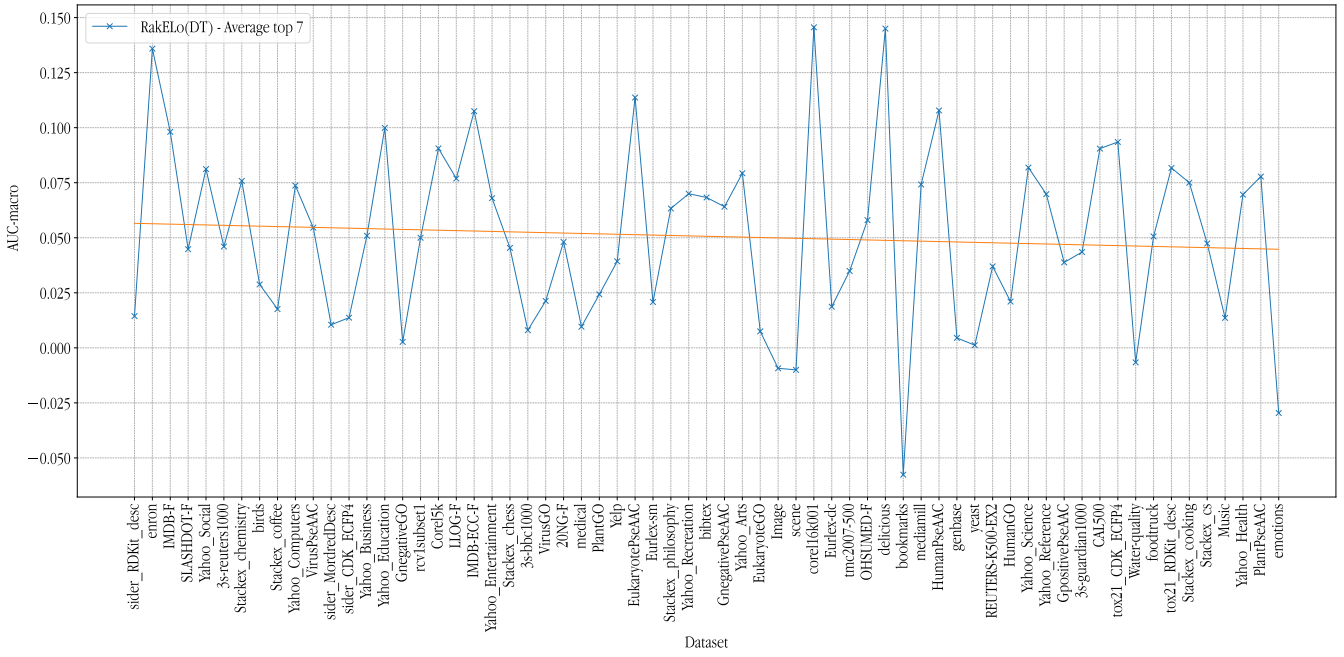


Figure 348: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

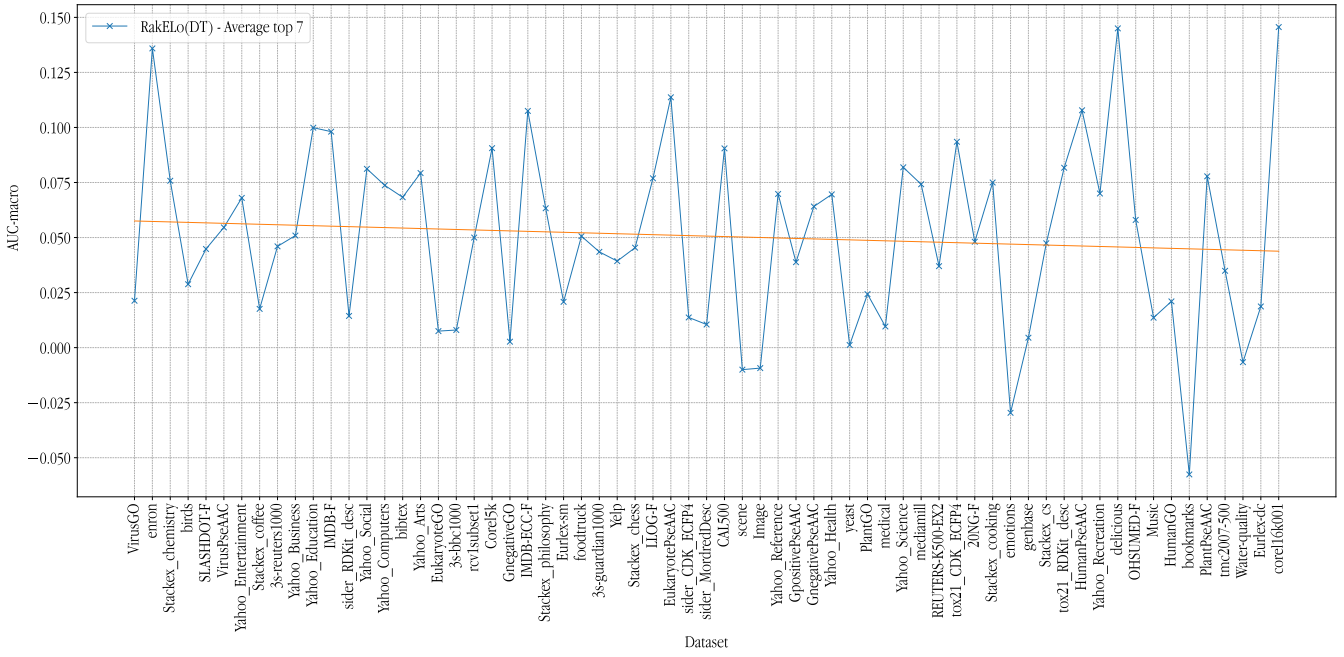


Figure 349: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

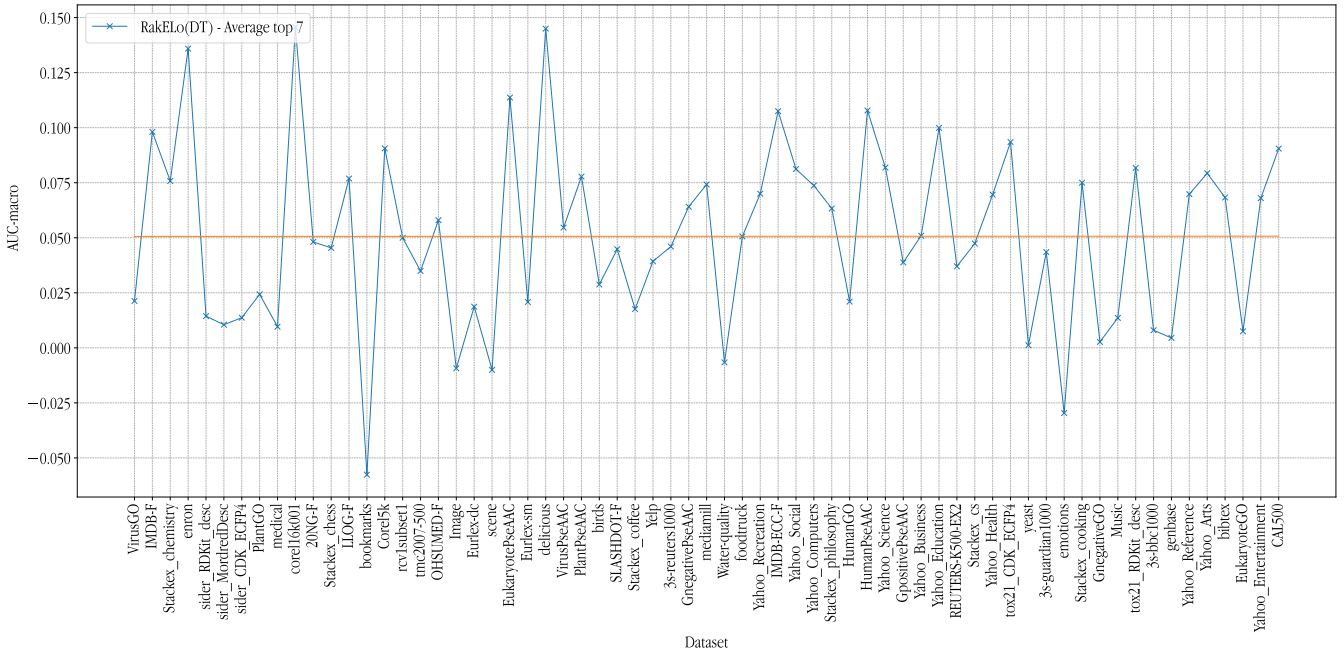


Figure 350: Difference in AUC-macro performance between RAkELo(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

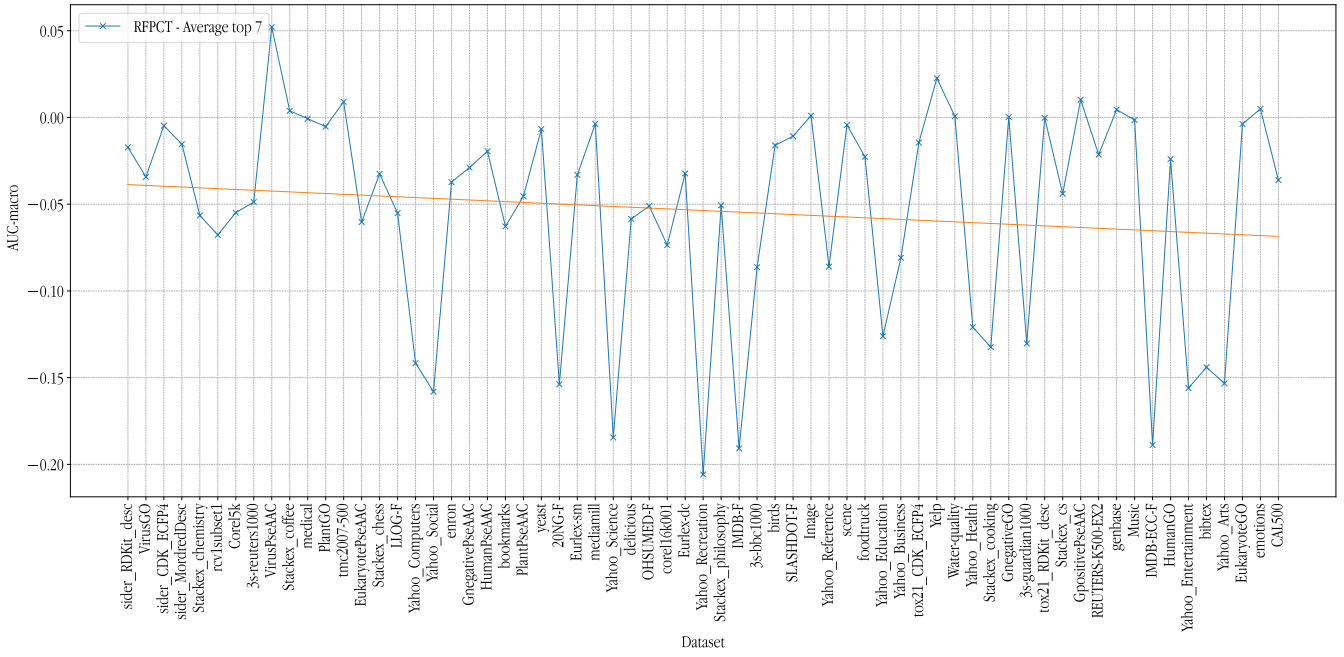


Figure 351: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

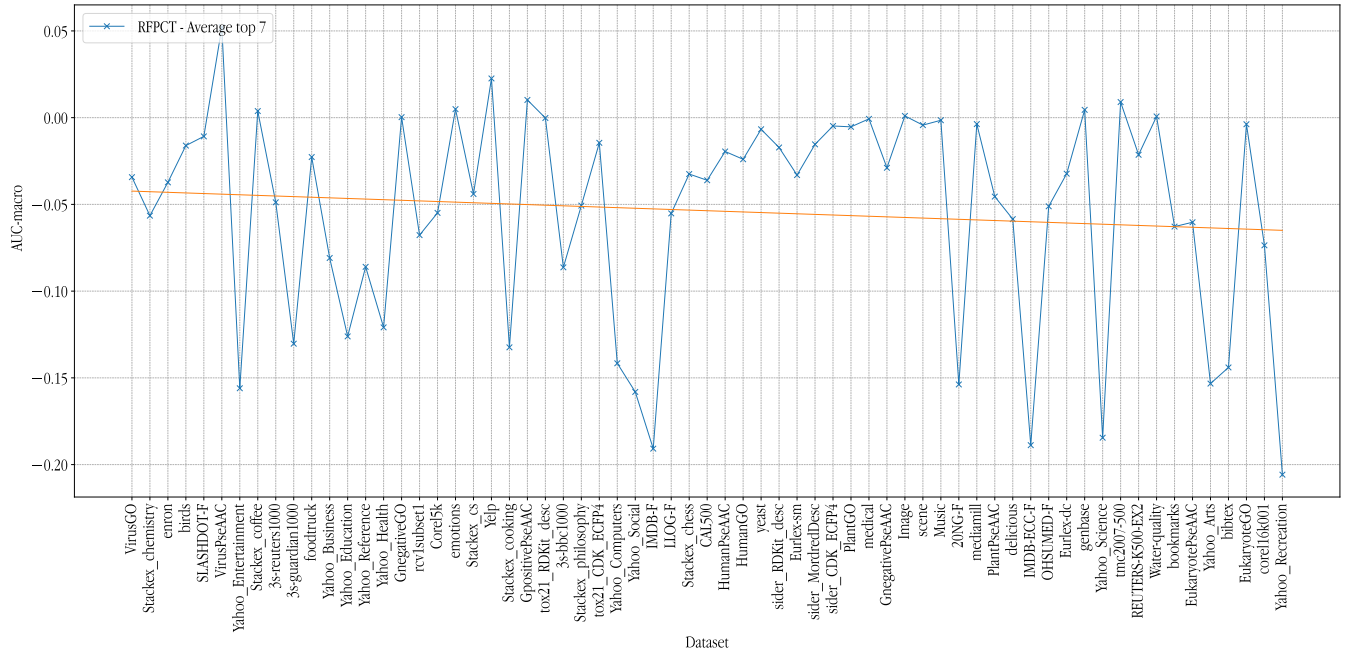


Figure 352: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

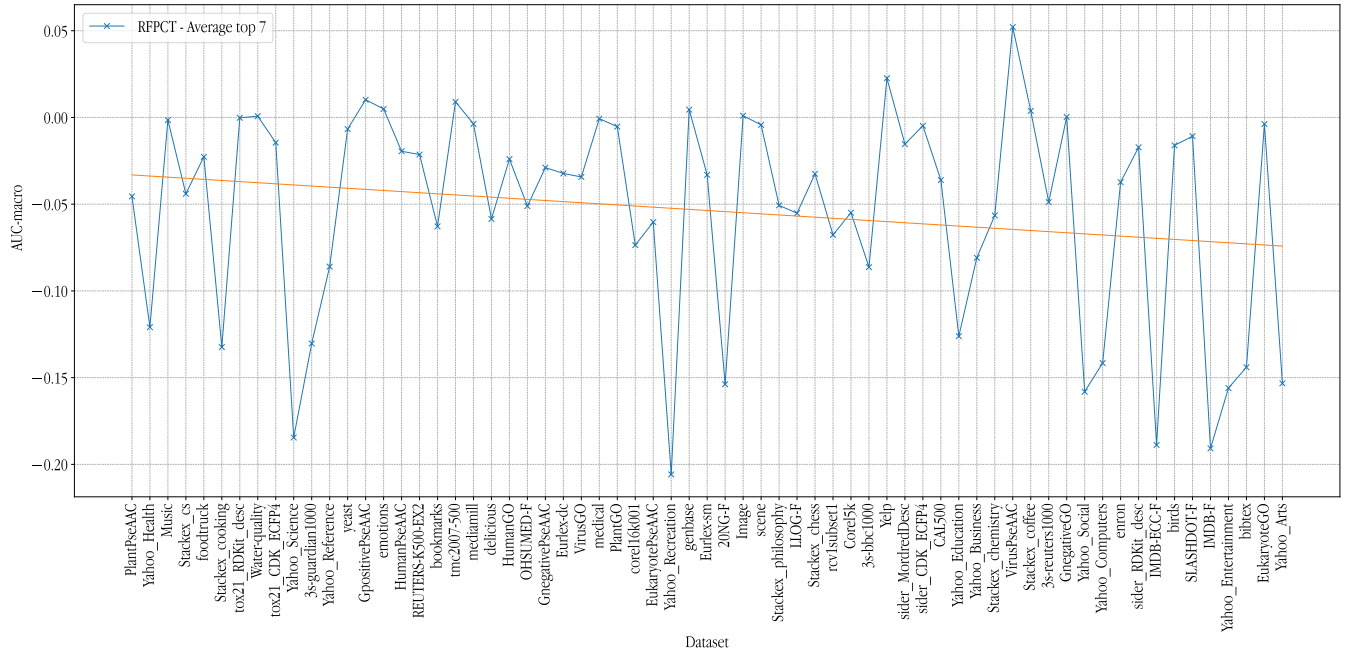


Figure 353: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

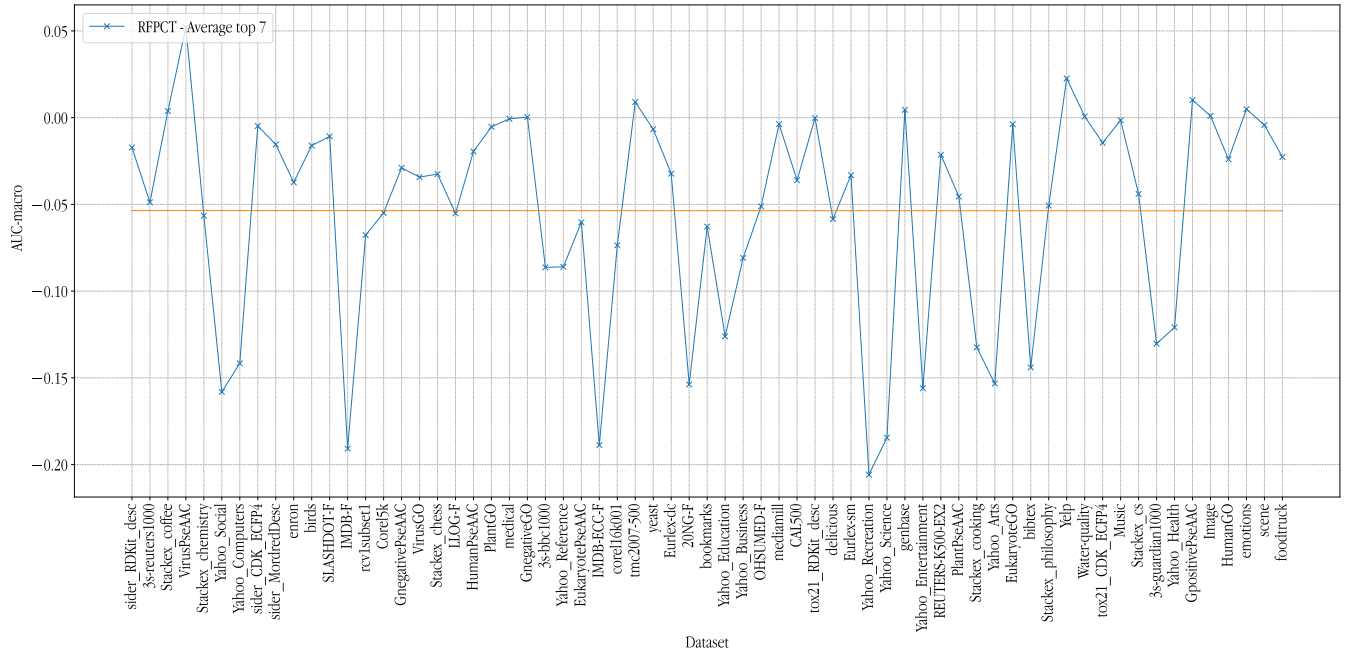


Figure 354: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

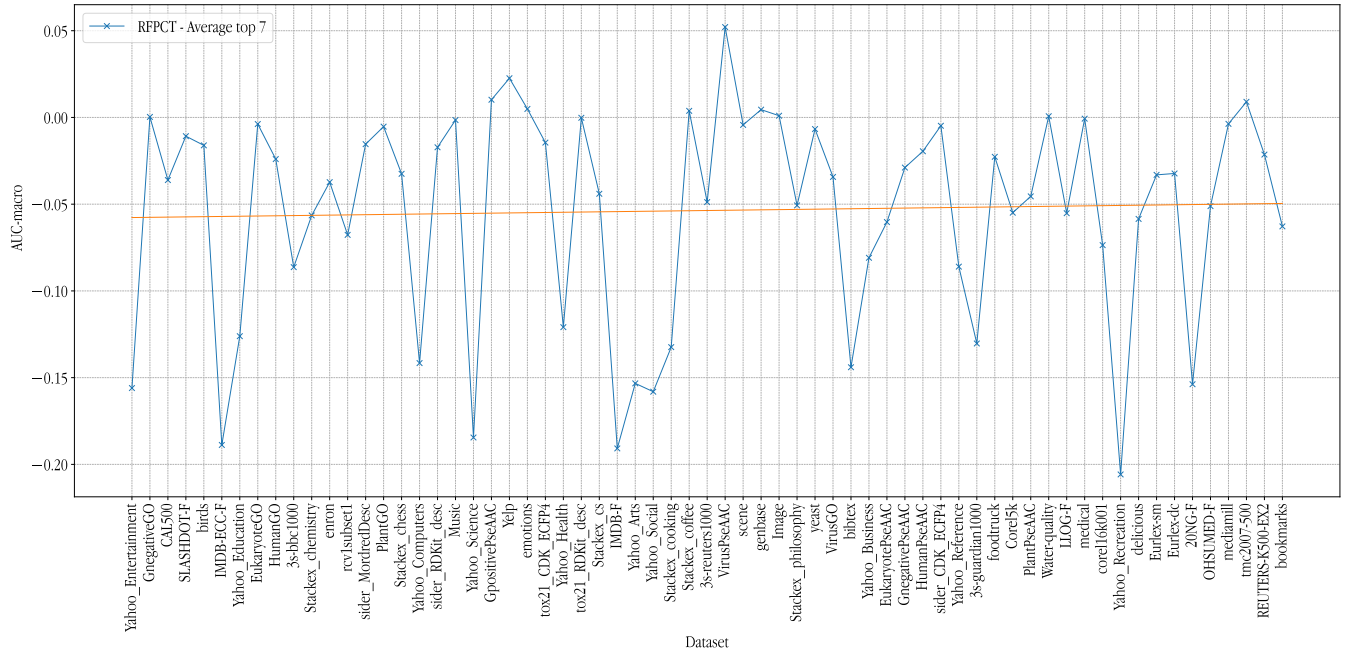


Figure 355: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

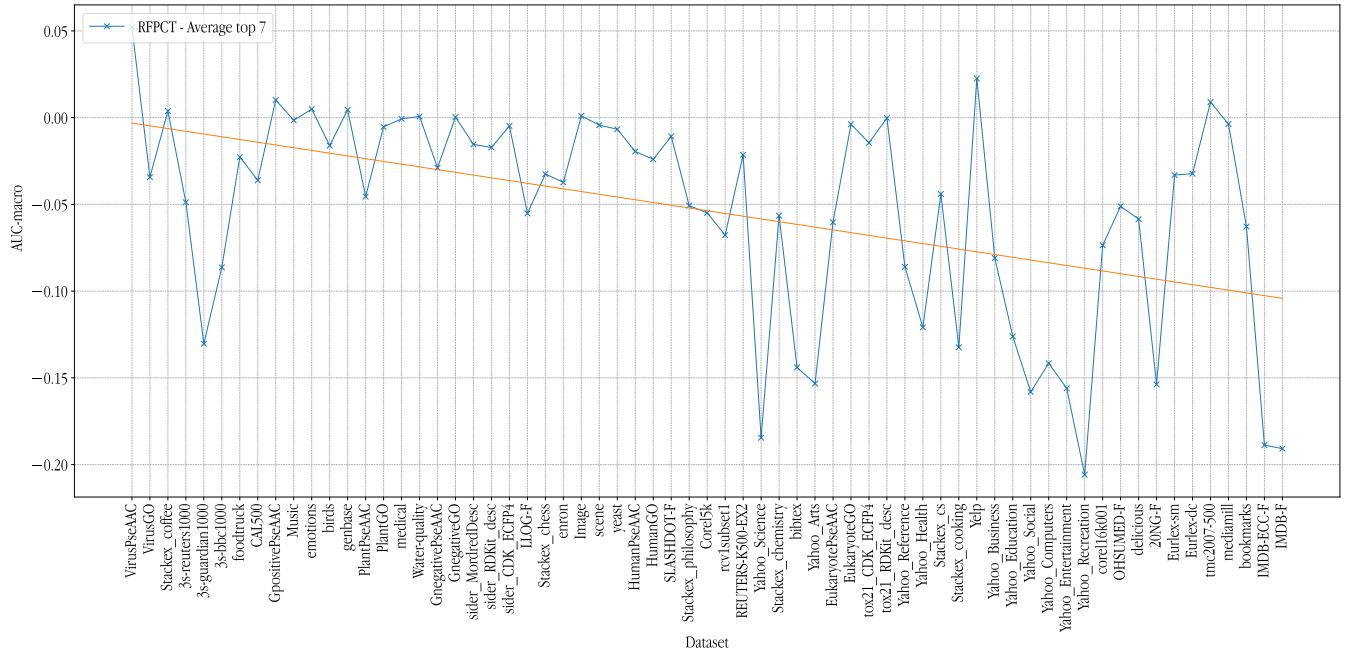


Figure 356: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

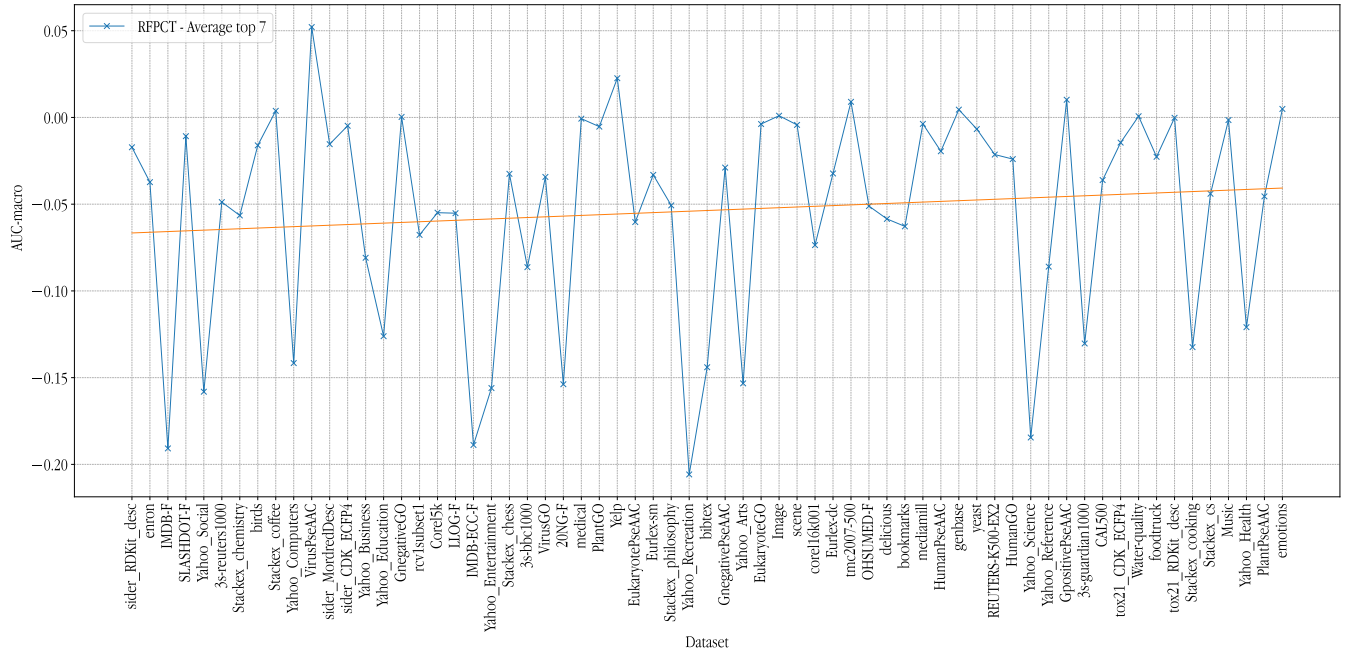


Figure 357: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

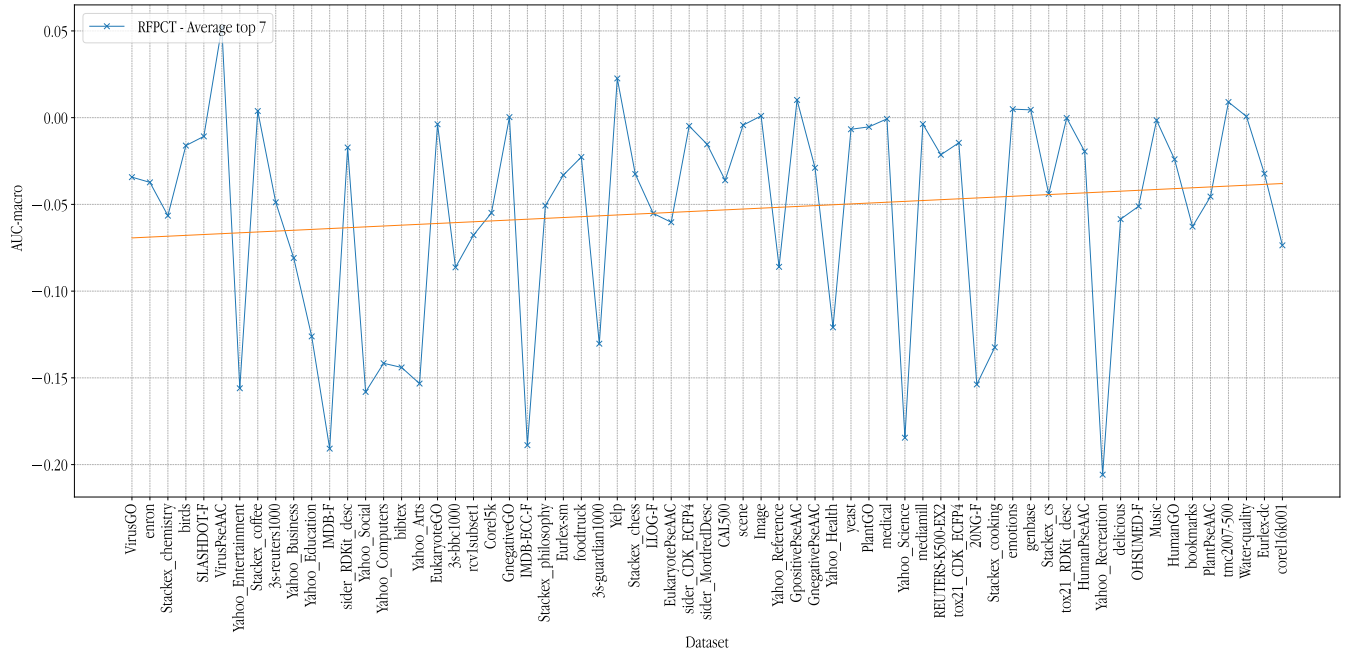


Figure 358: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

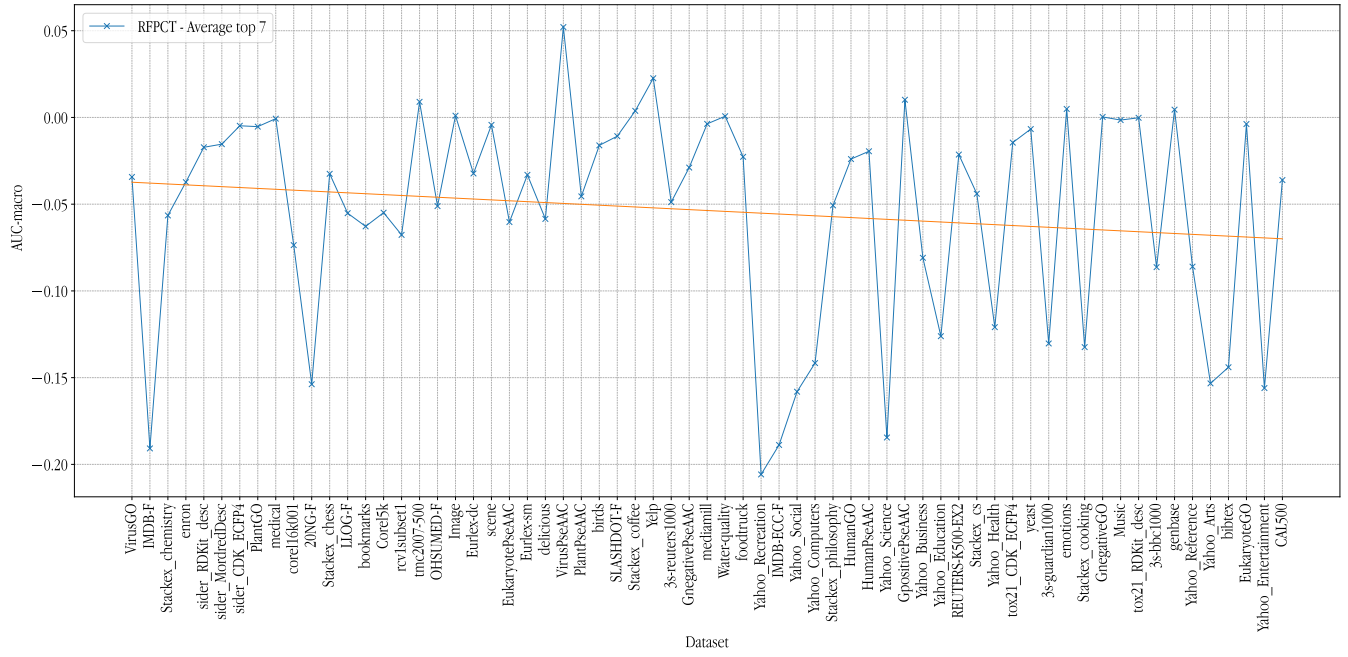


Figure 359: Difference in AUC-macro performance between RFPCT and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

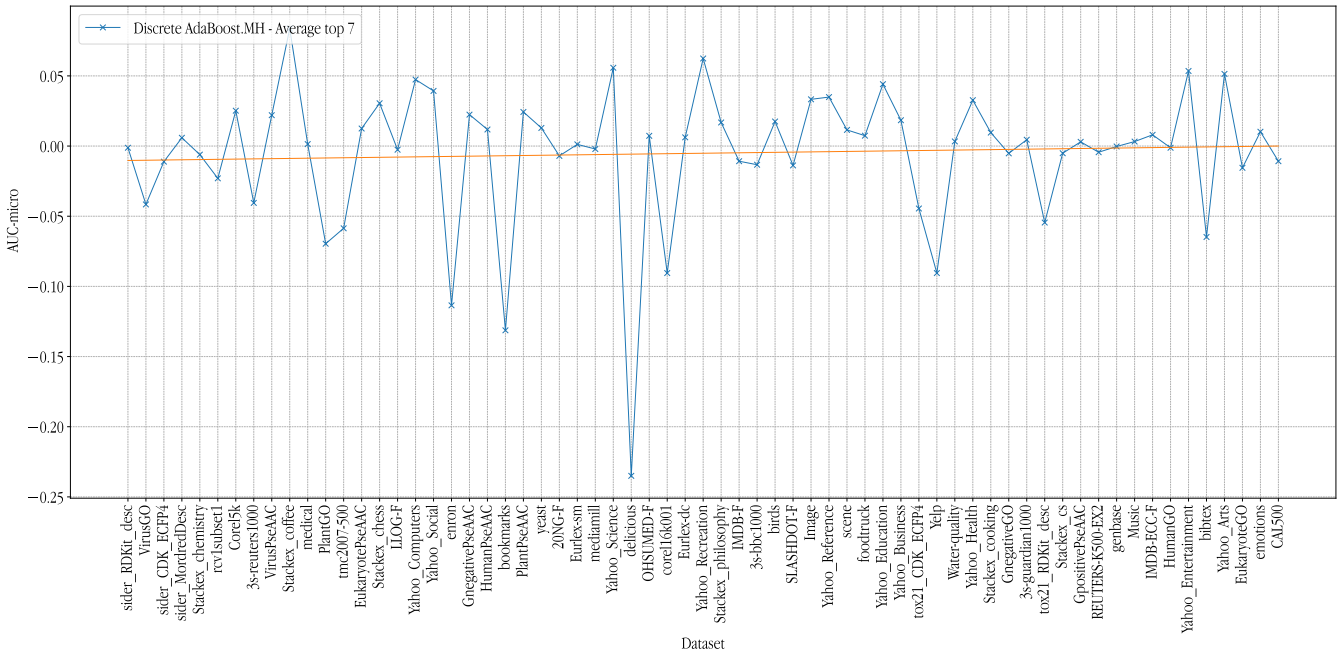


Figure 360: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

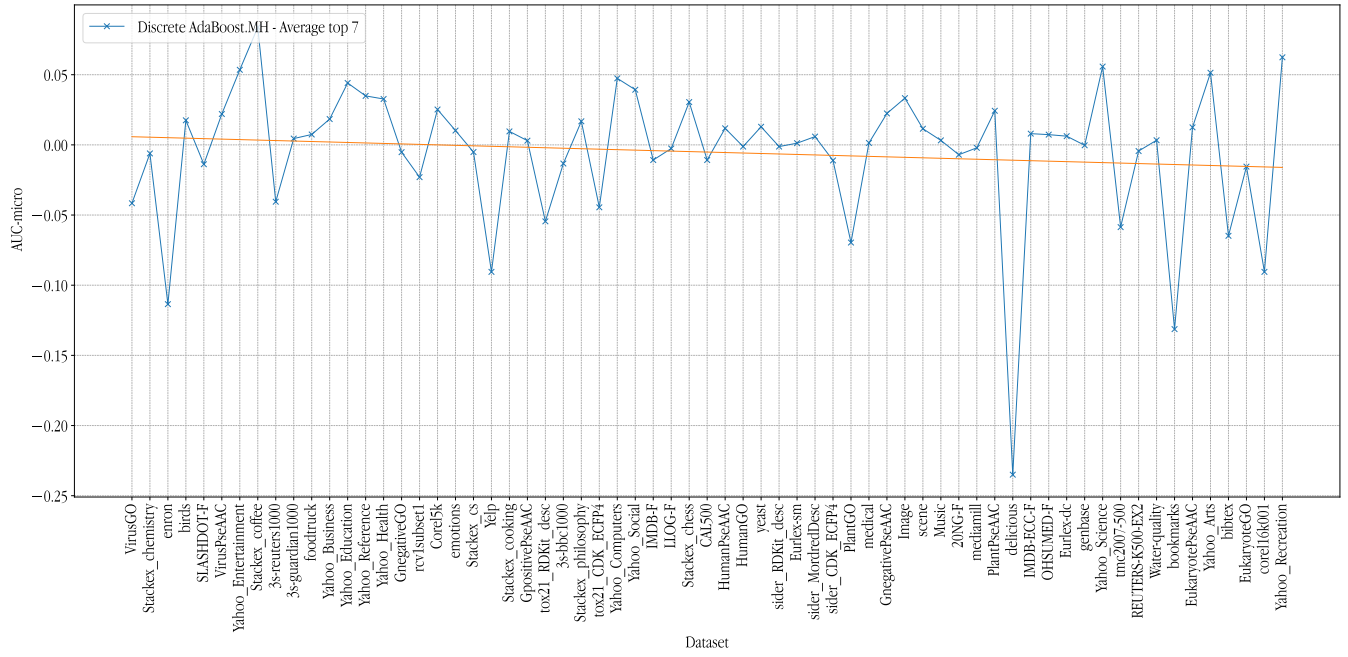


Figure 361: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

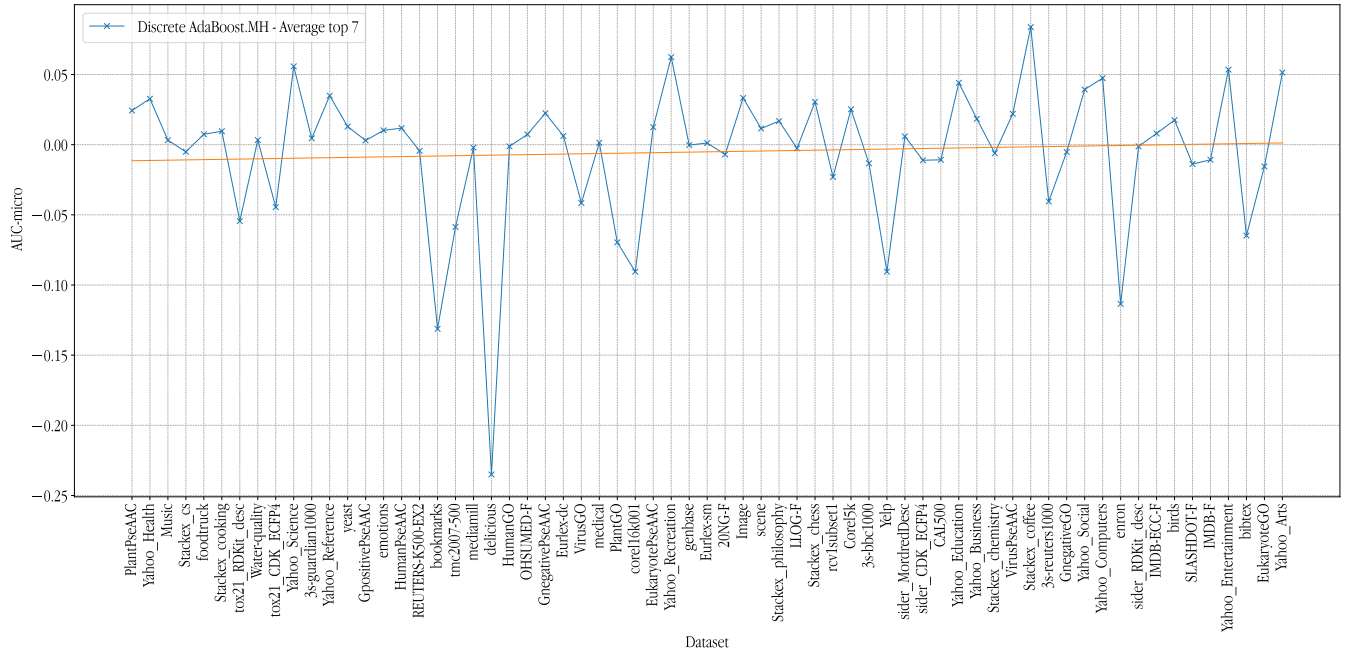


Figure 362: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

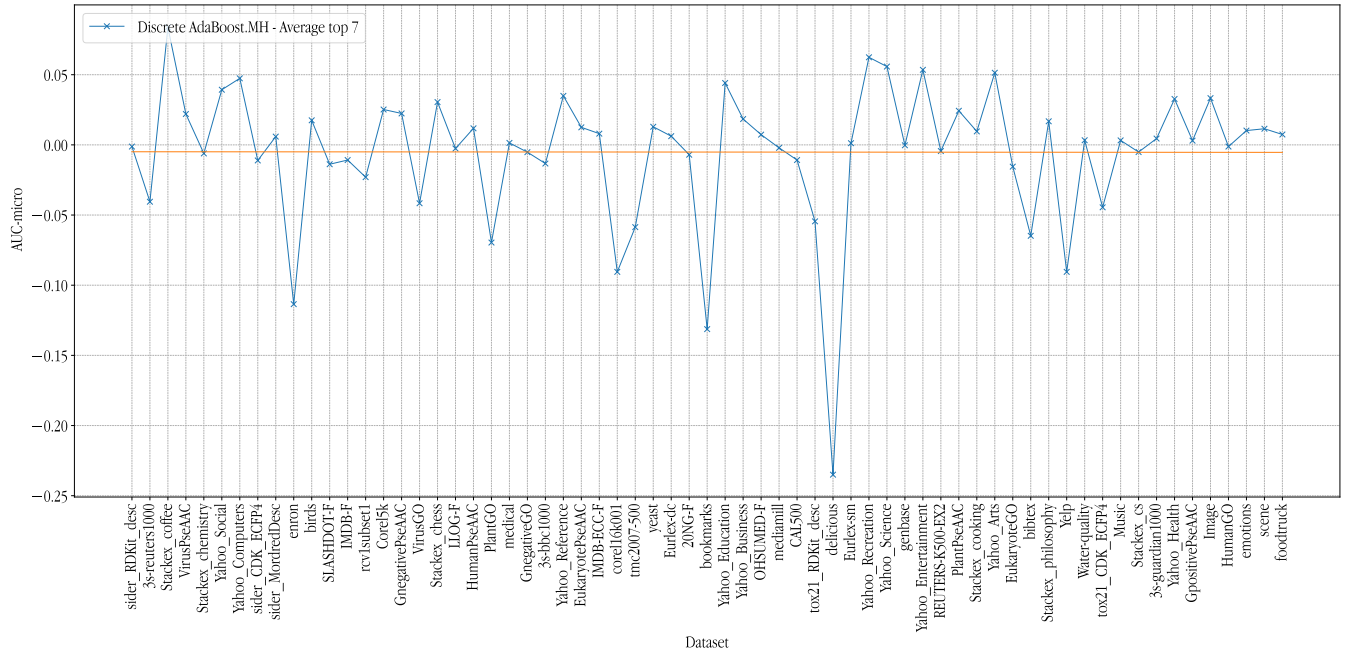


Figure 363: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

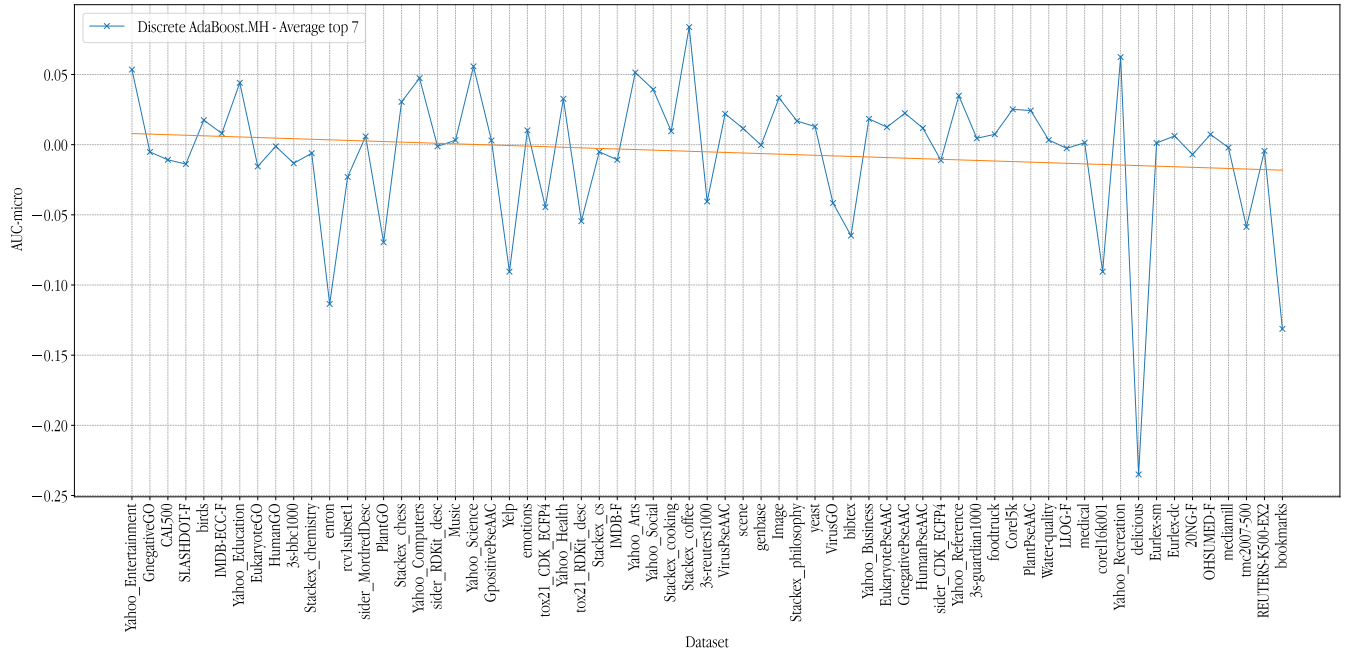


Figure 364: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

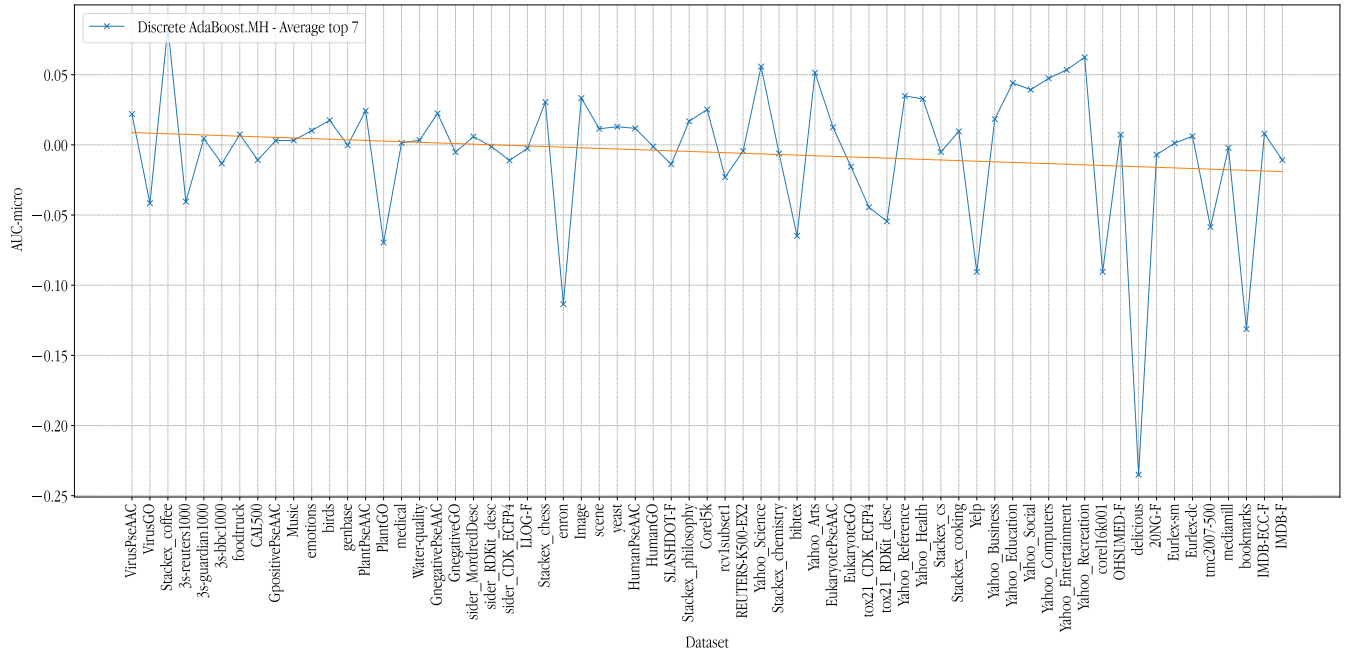


Figure 365: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

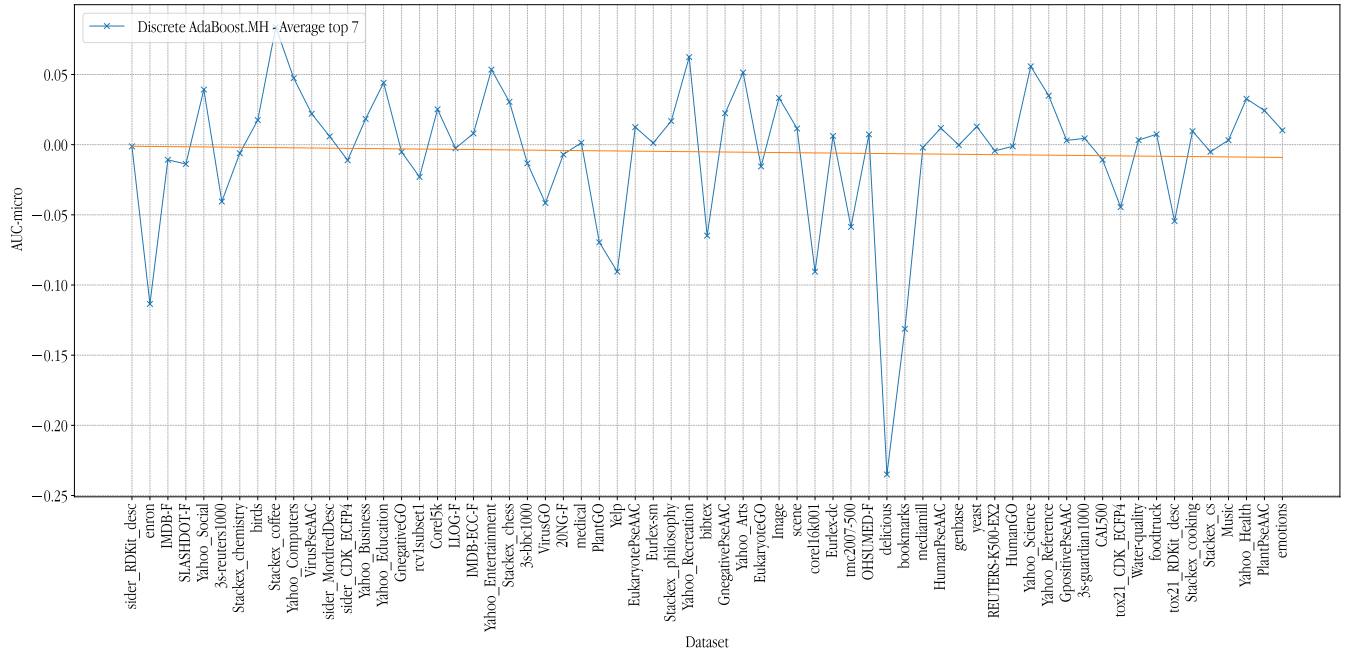


Figure 366: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

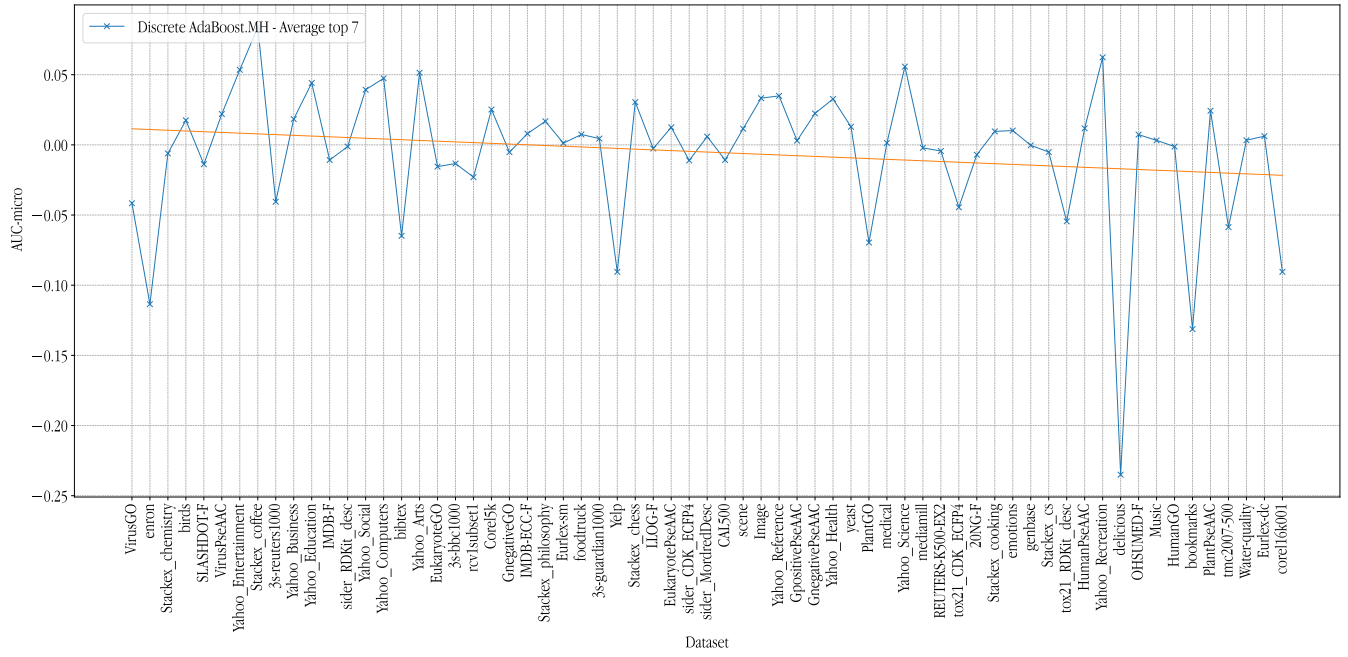


Figure 367: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

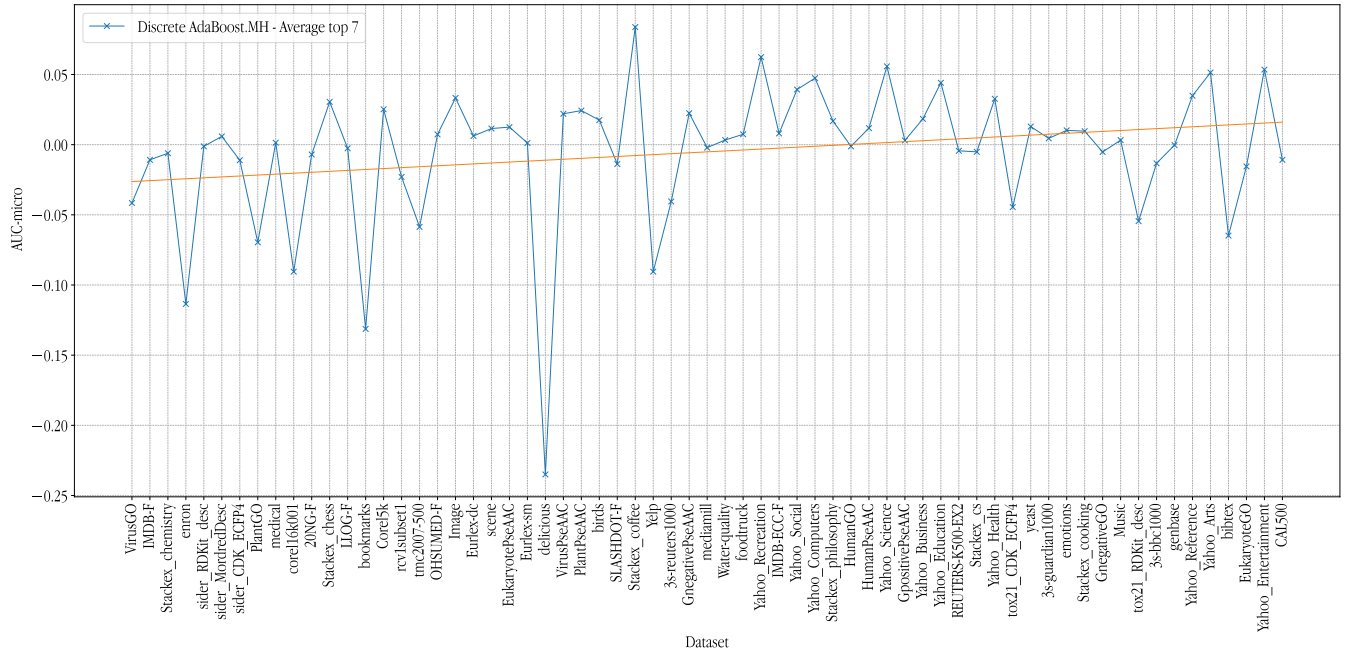


Figure 368: Difference in AUC-micro performance between Discrete AdaBoost.MH and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

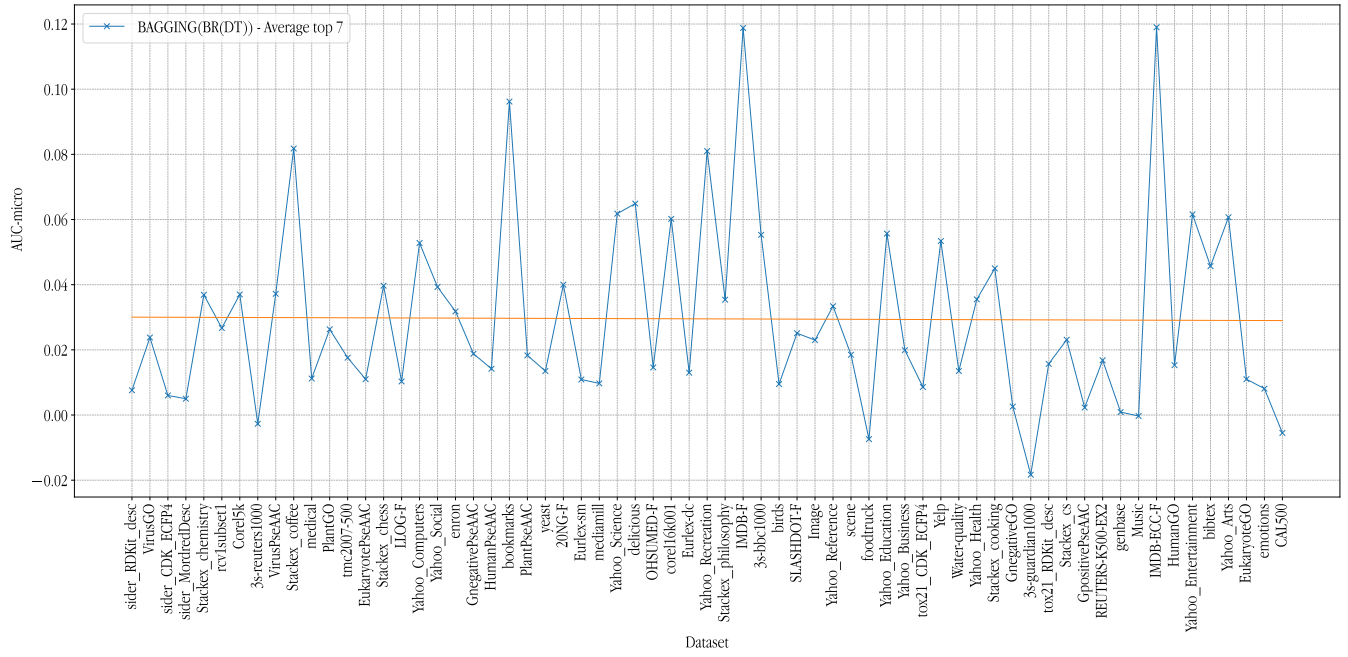


Figure 369: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

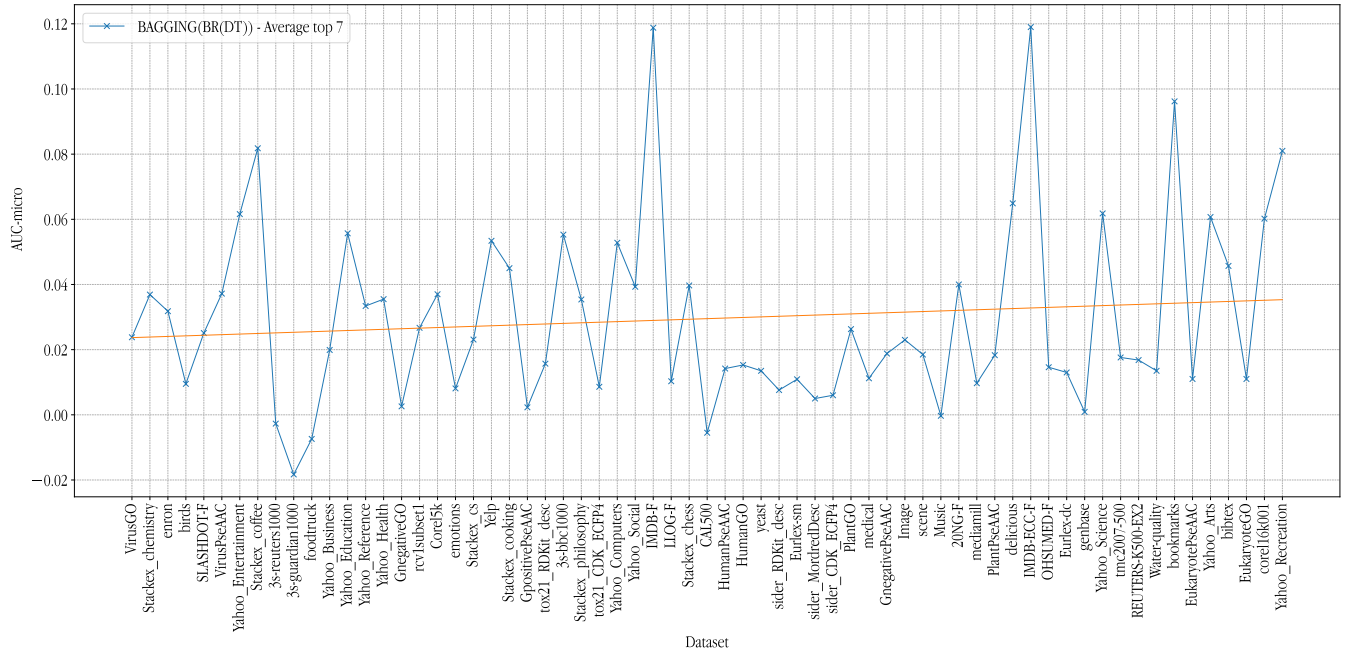


Figure 370: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

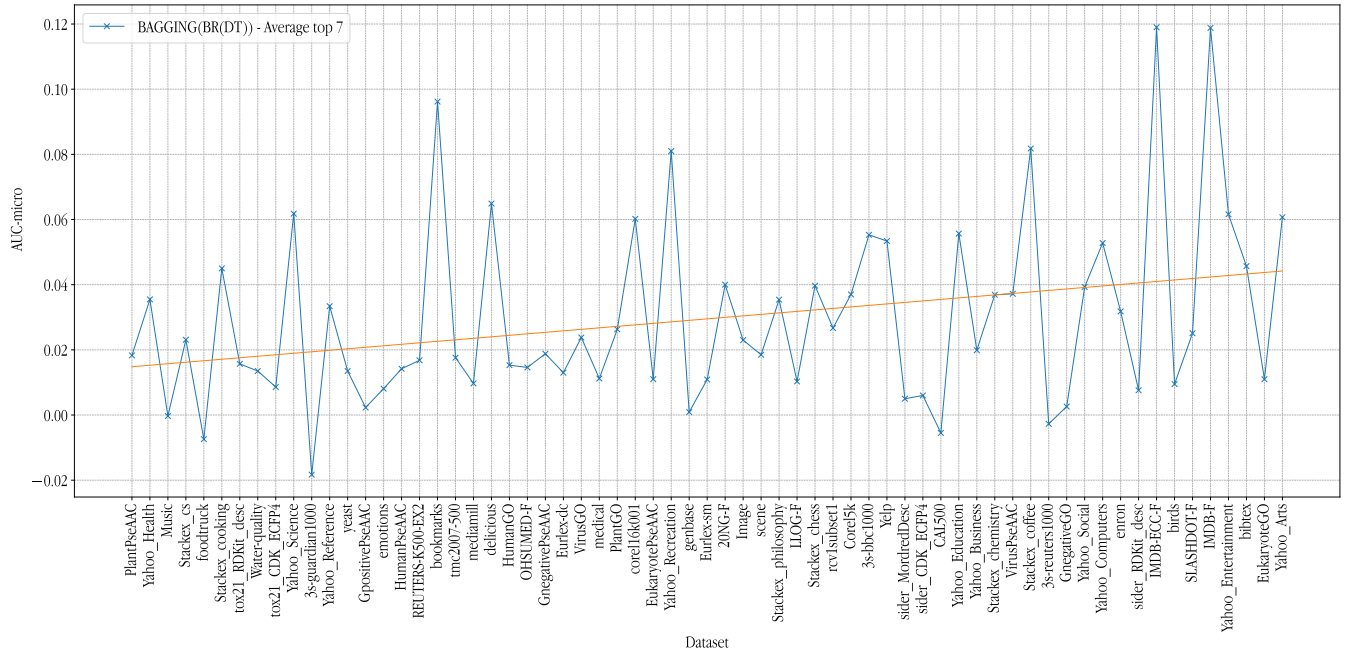


Figure 371: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

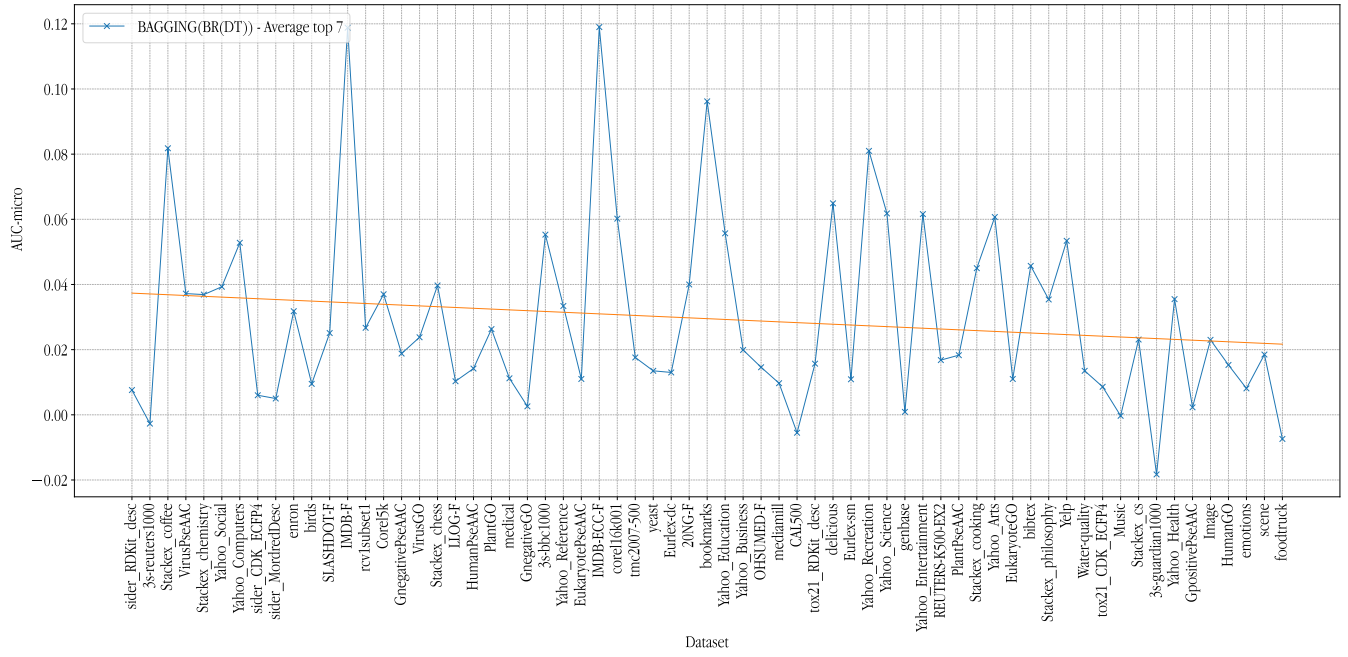


Figure 372: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

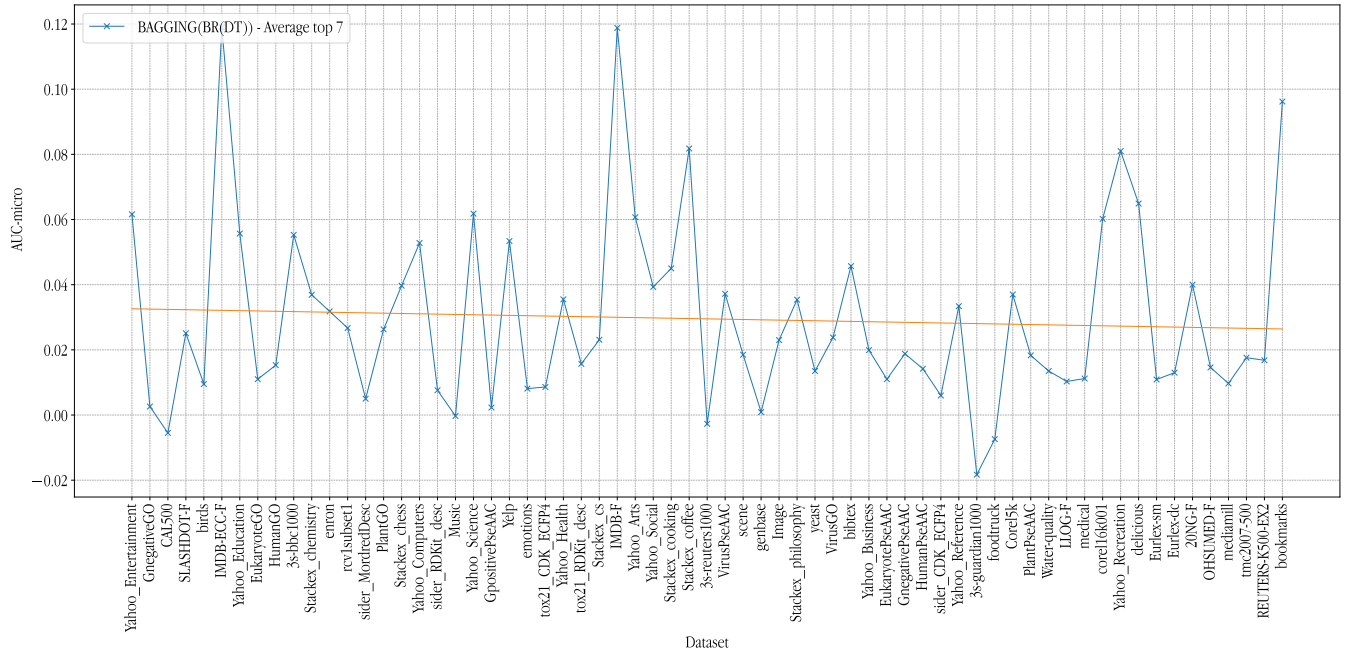


Figure 373: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

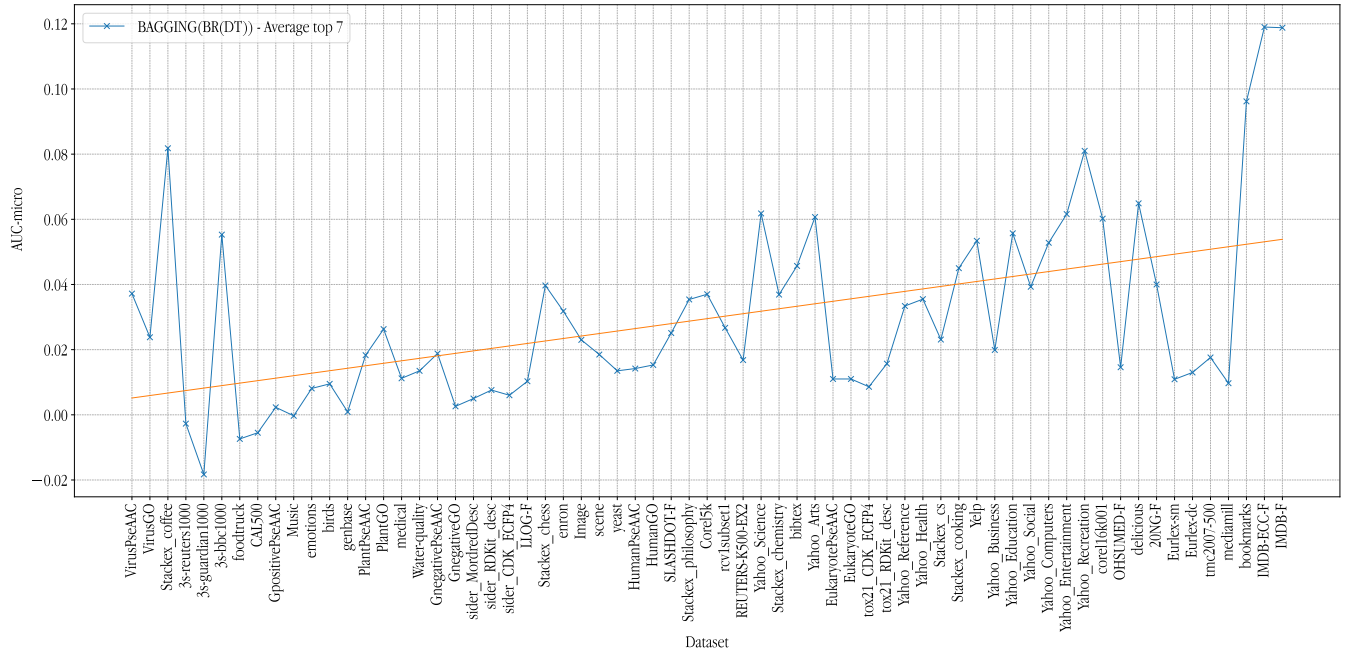


Figure 374: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

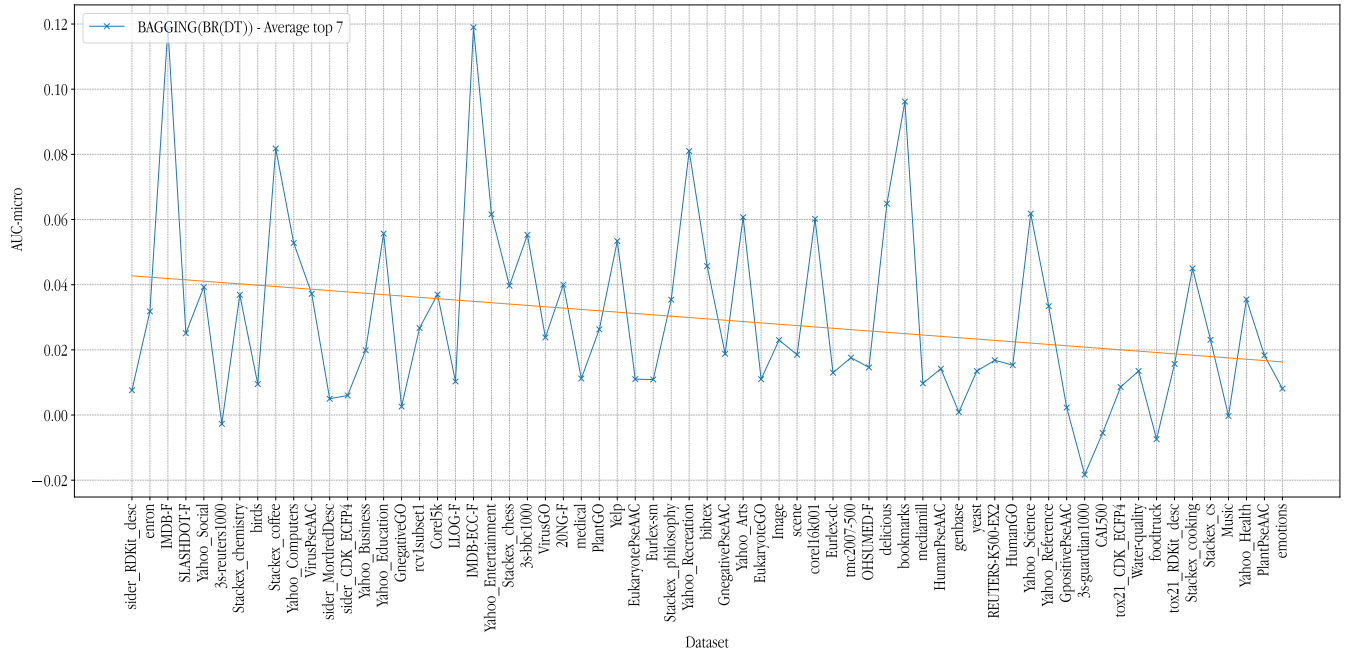


Figure 375: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

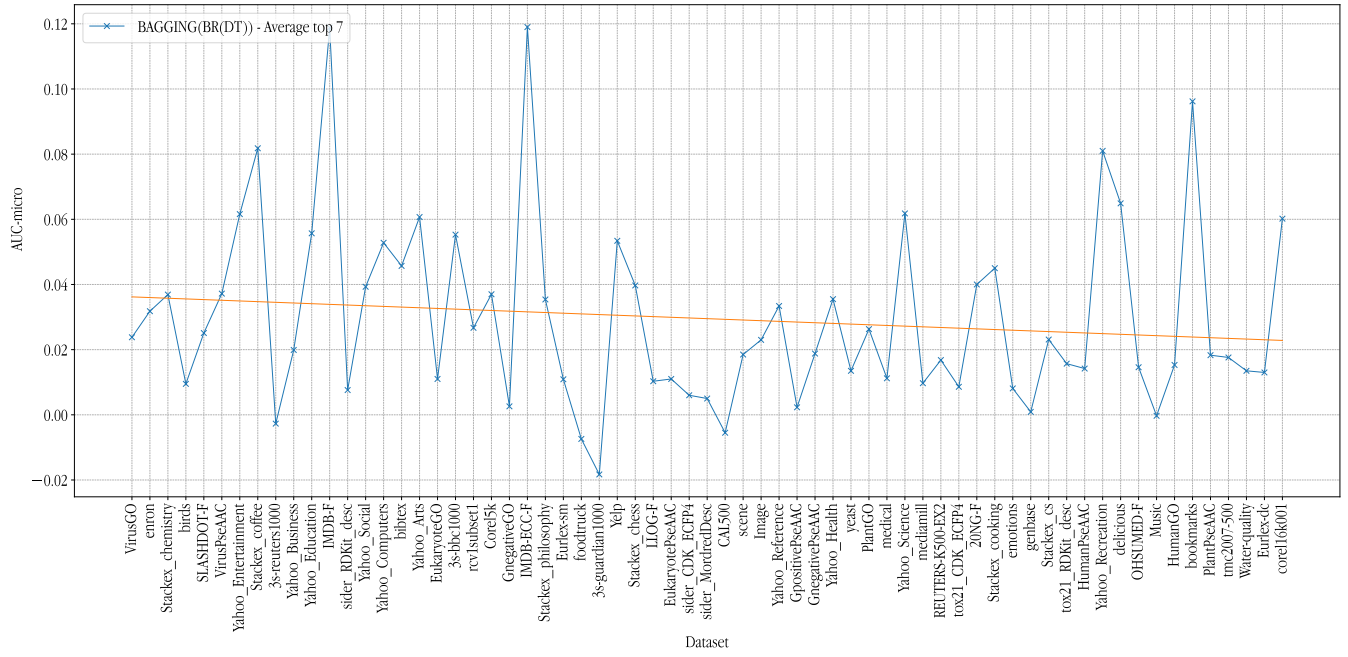


Figure 376: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

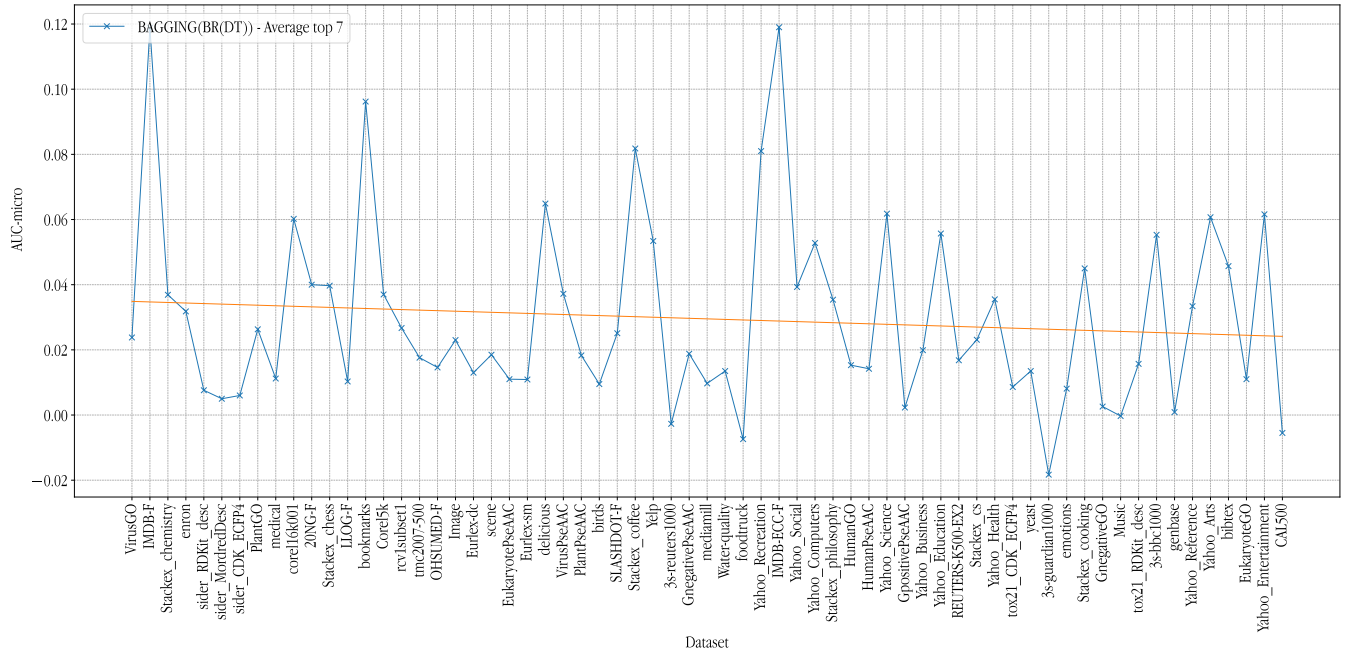


Figure 377: Difference in AUC-micro performance between BAGGING(BR(DT)) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

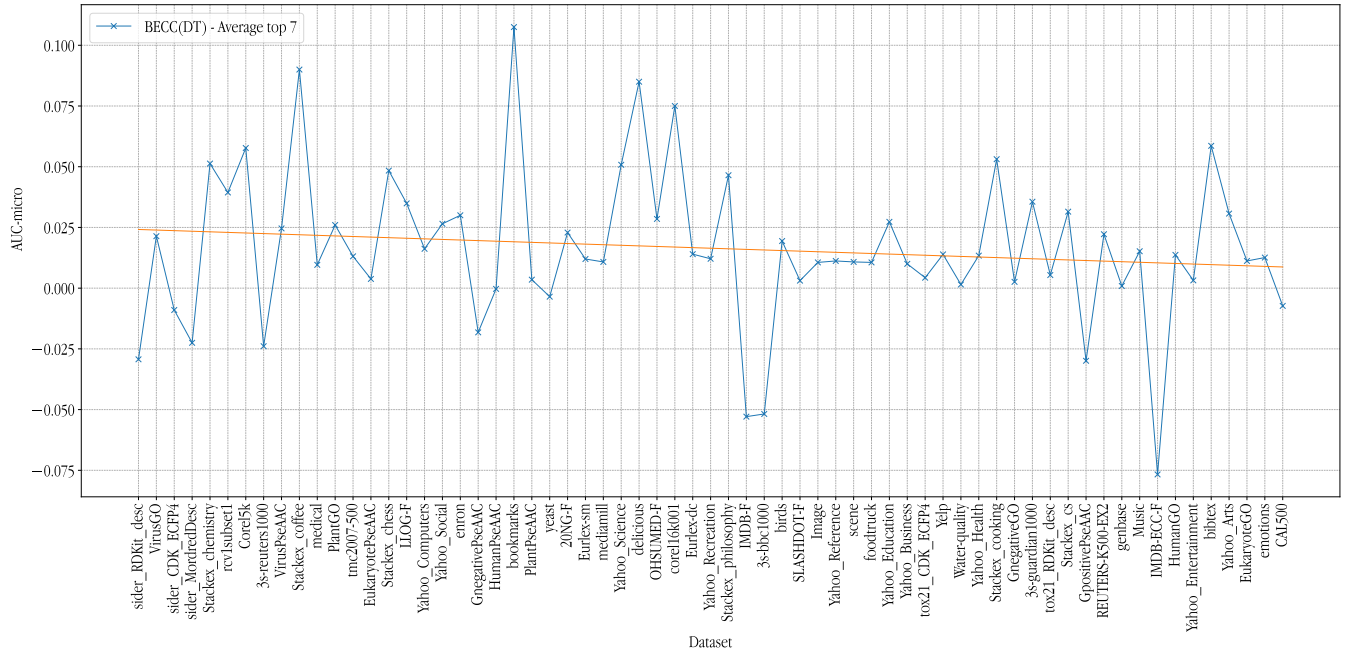


Figure 378: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

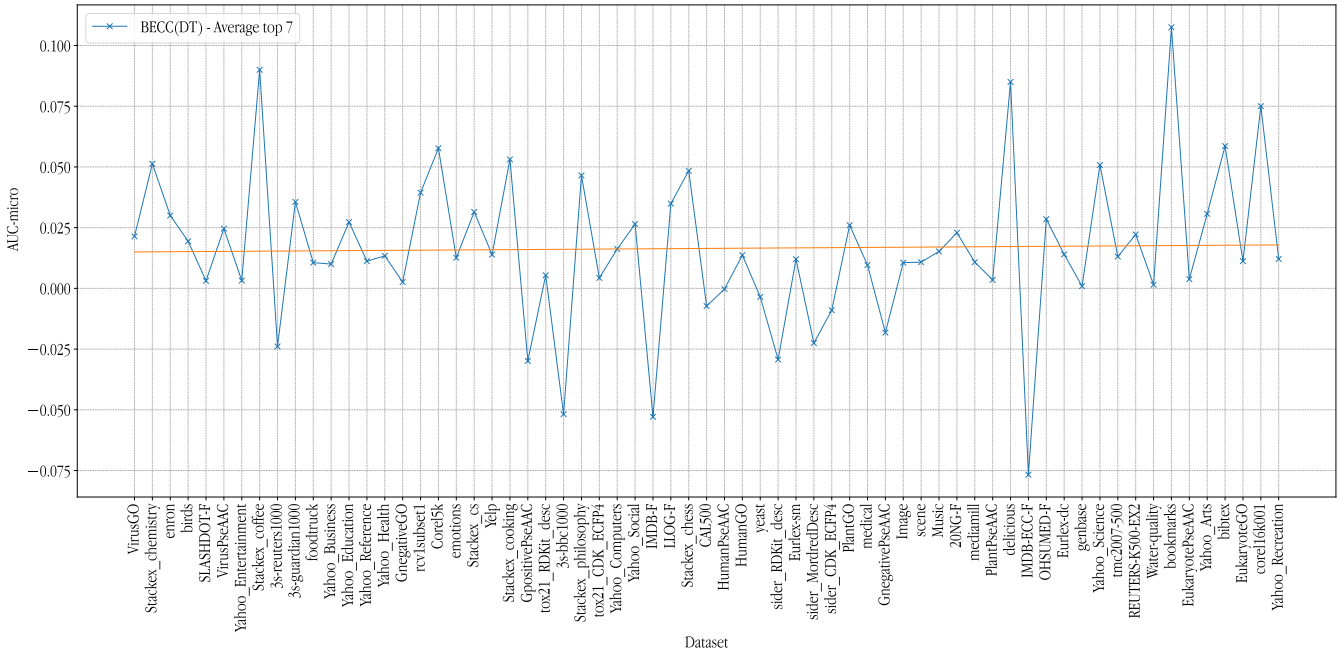


Figure 379: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

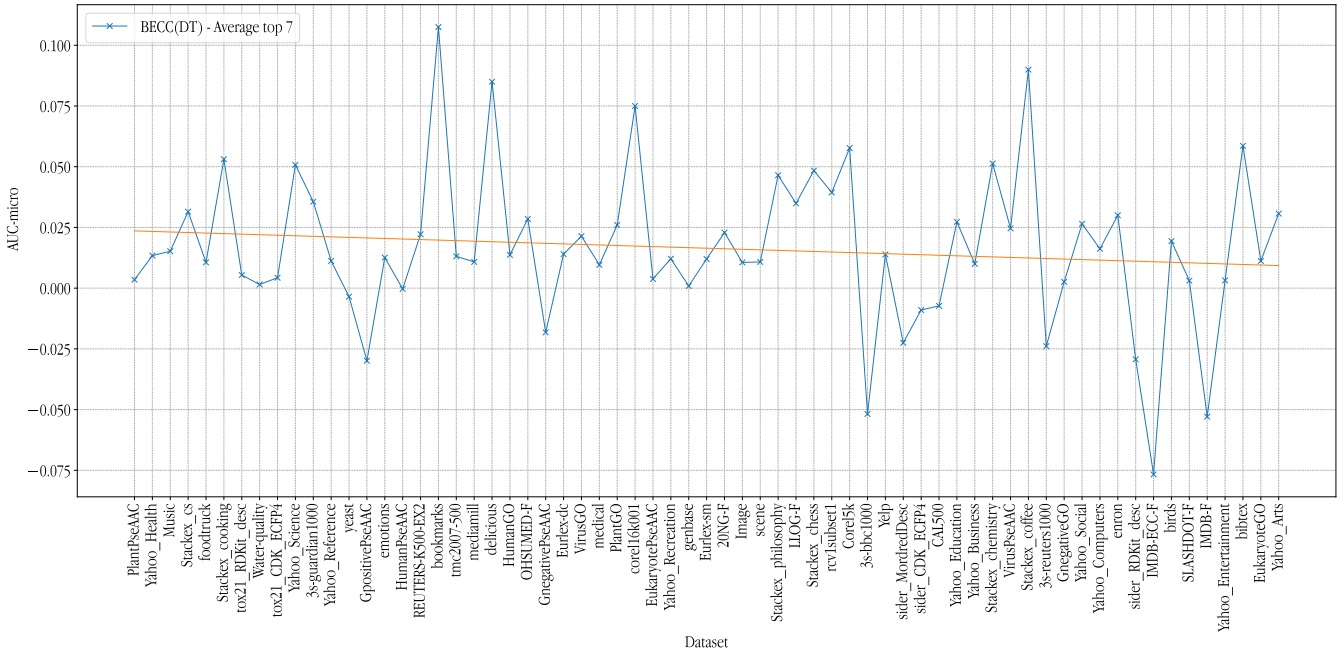


Figure 380: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

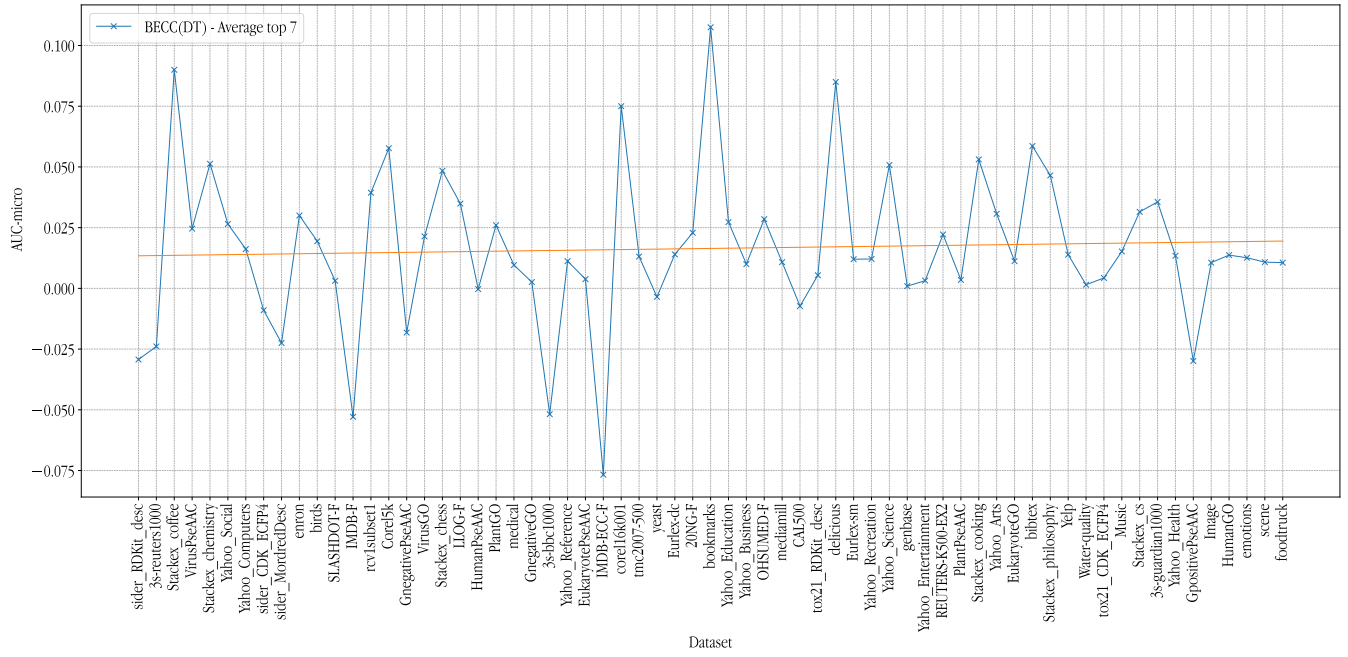


Figure 381: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

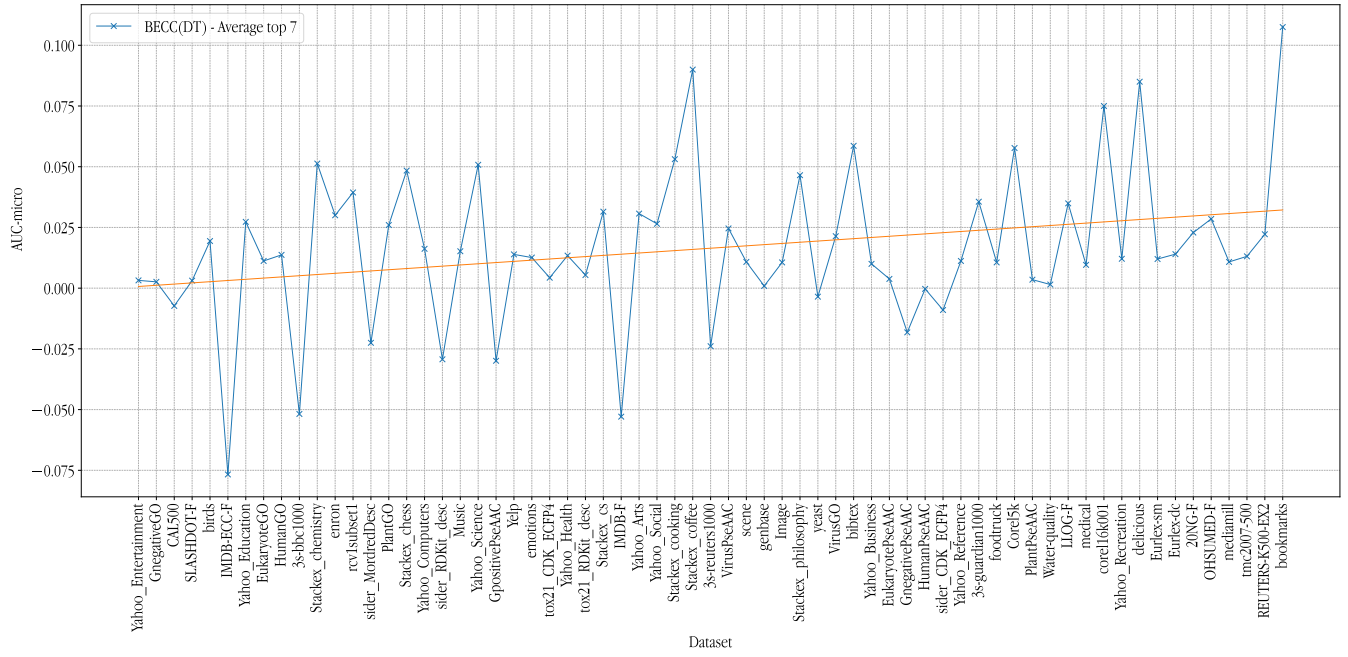


Figure 382: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

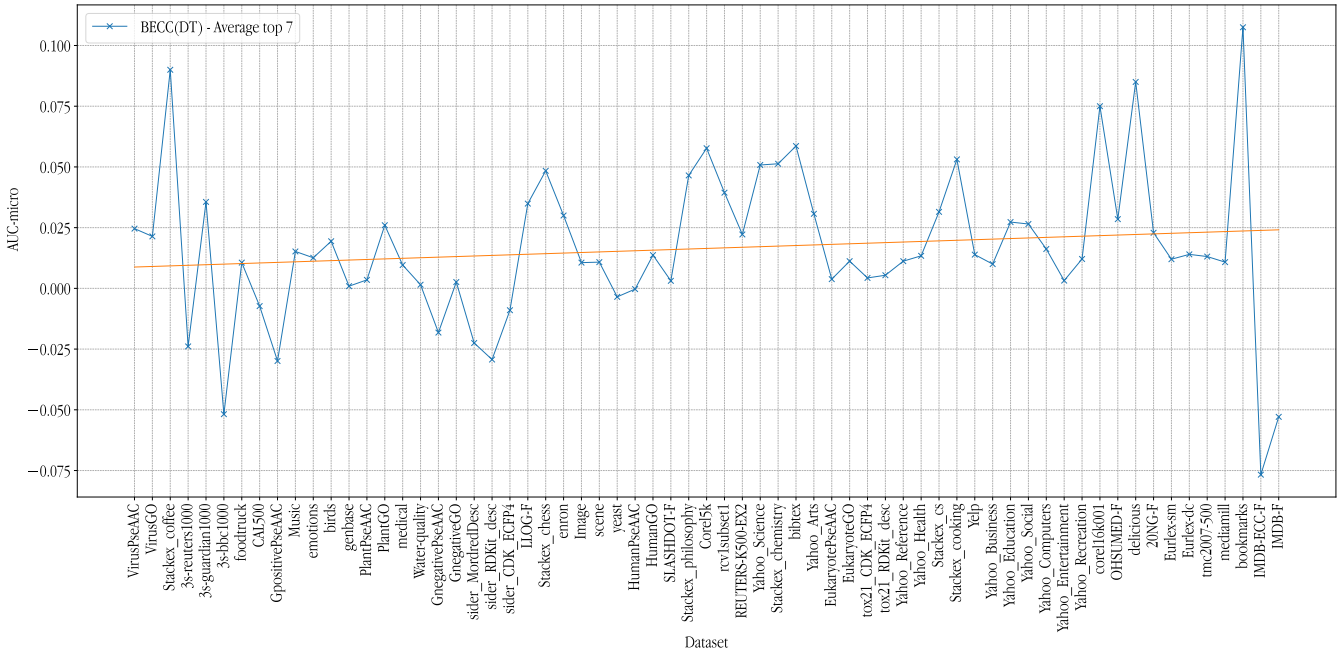


Figure 383: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

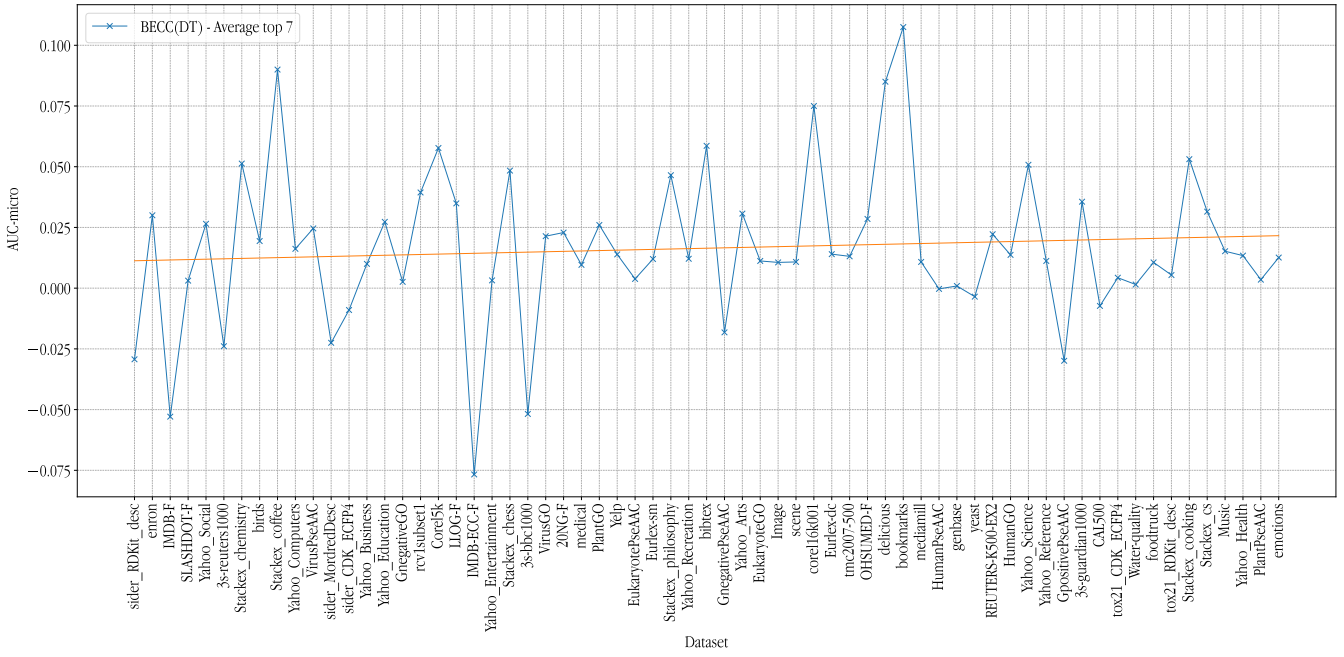


Figure 384: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

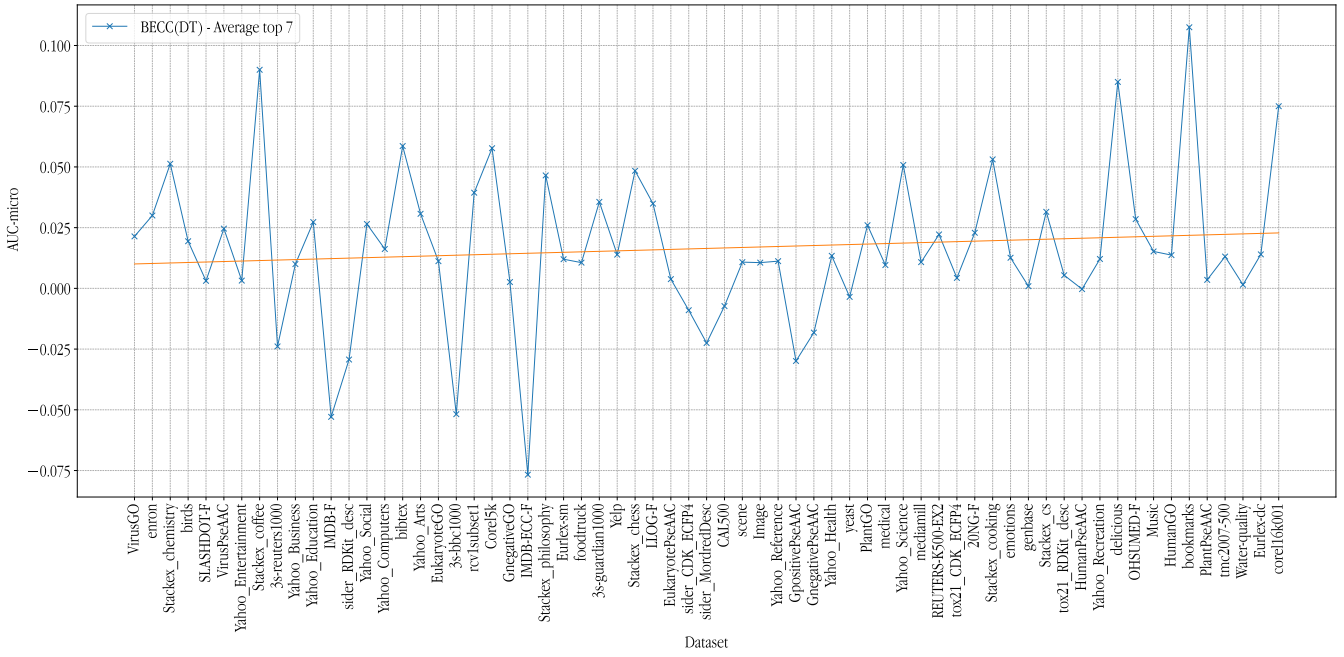


Figure 385: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

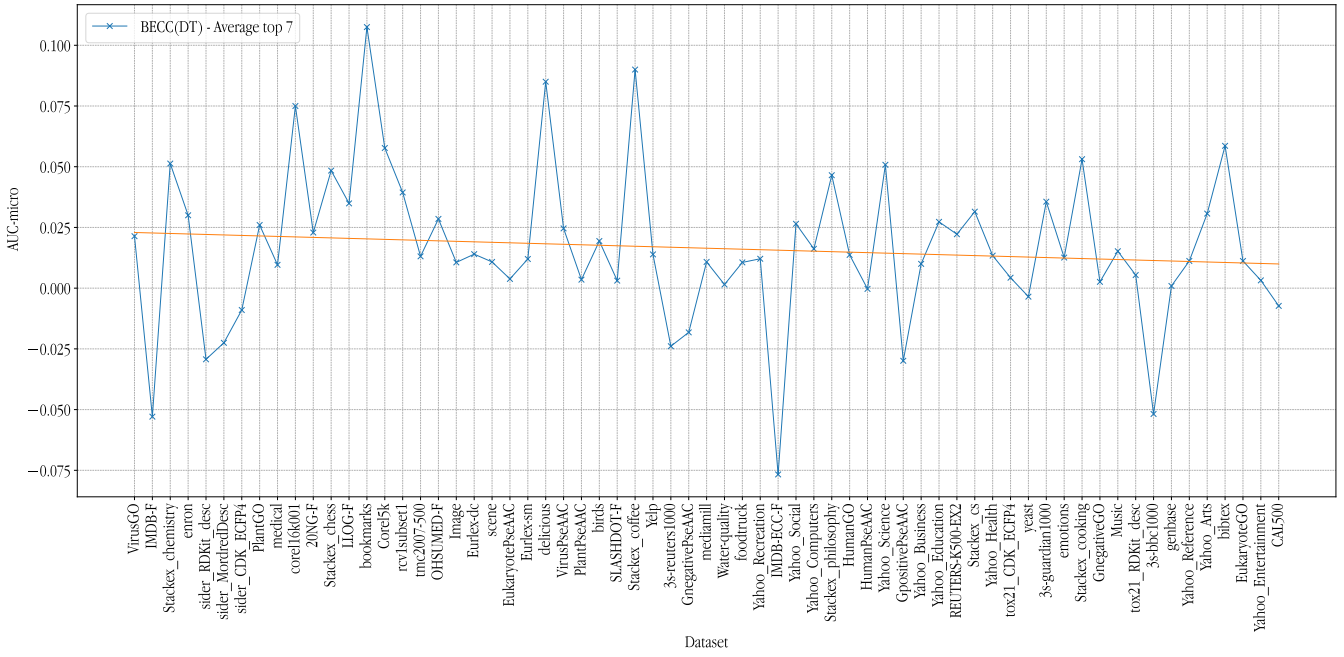


Figure 386: Difference in AUC-micro performance between BECC and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

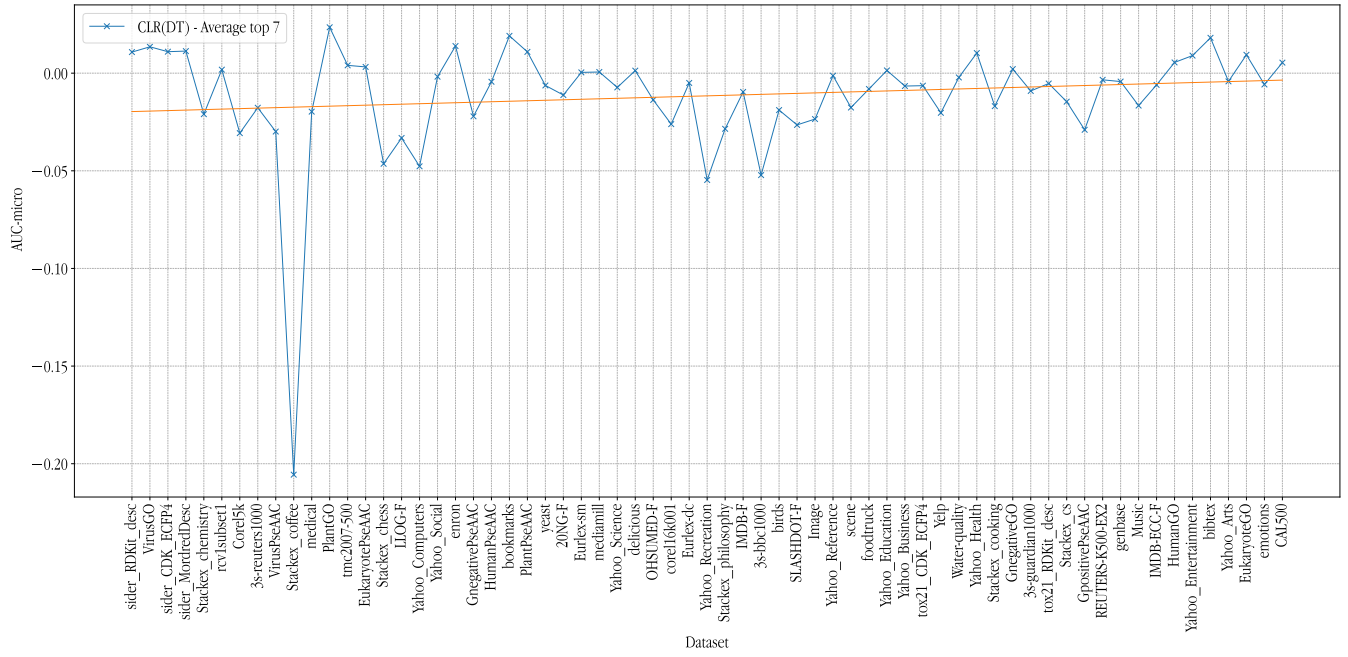


Figure 387: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

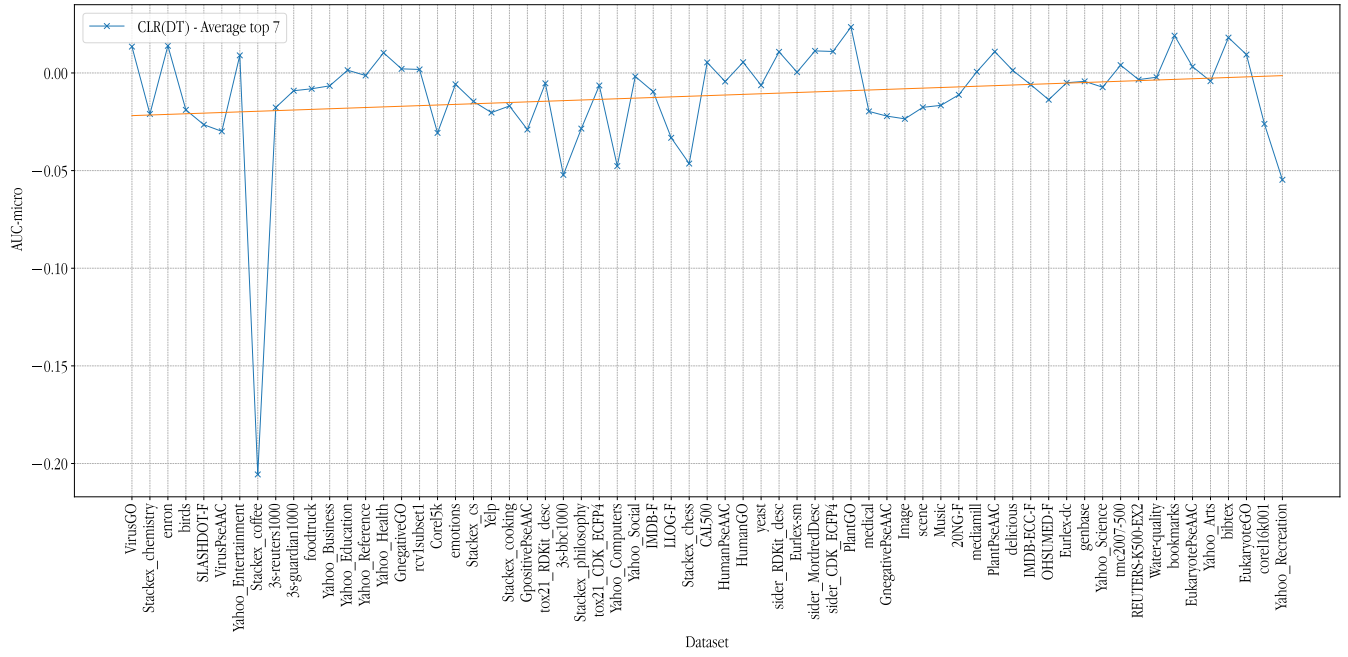


Figure 388: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

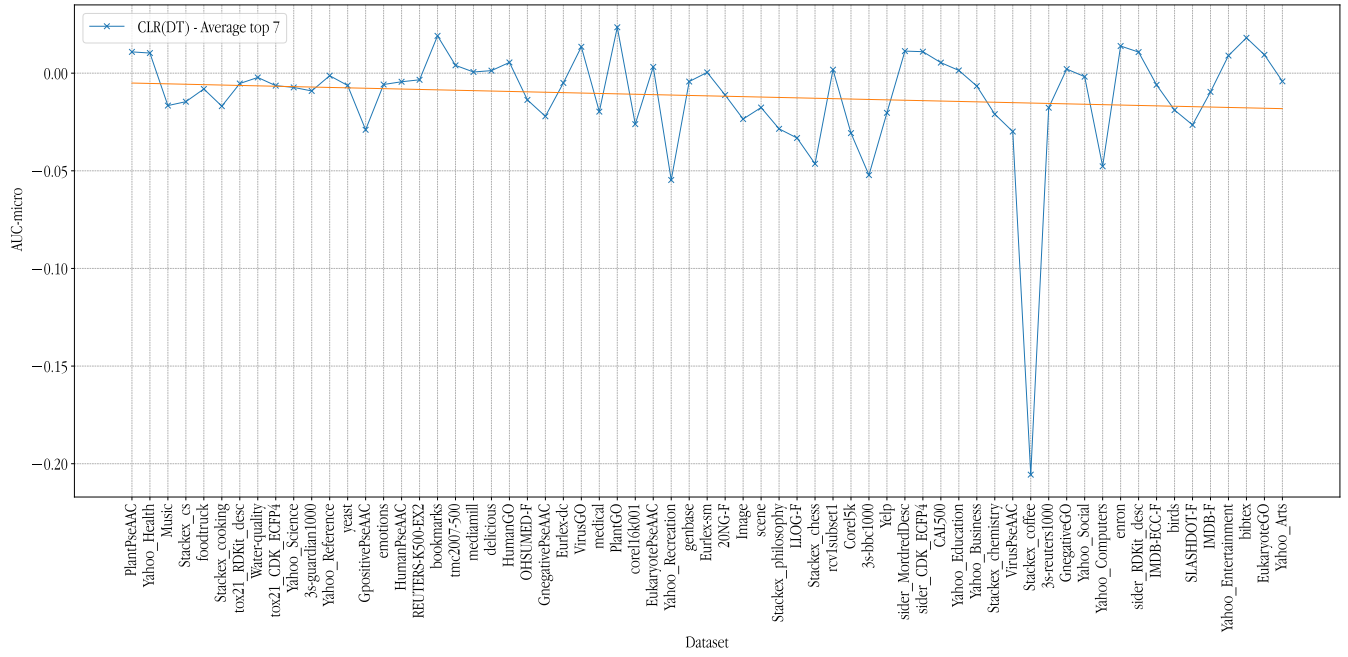


Figure 389: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

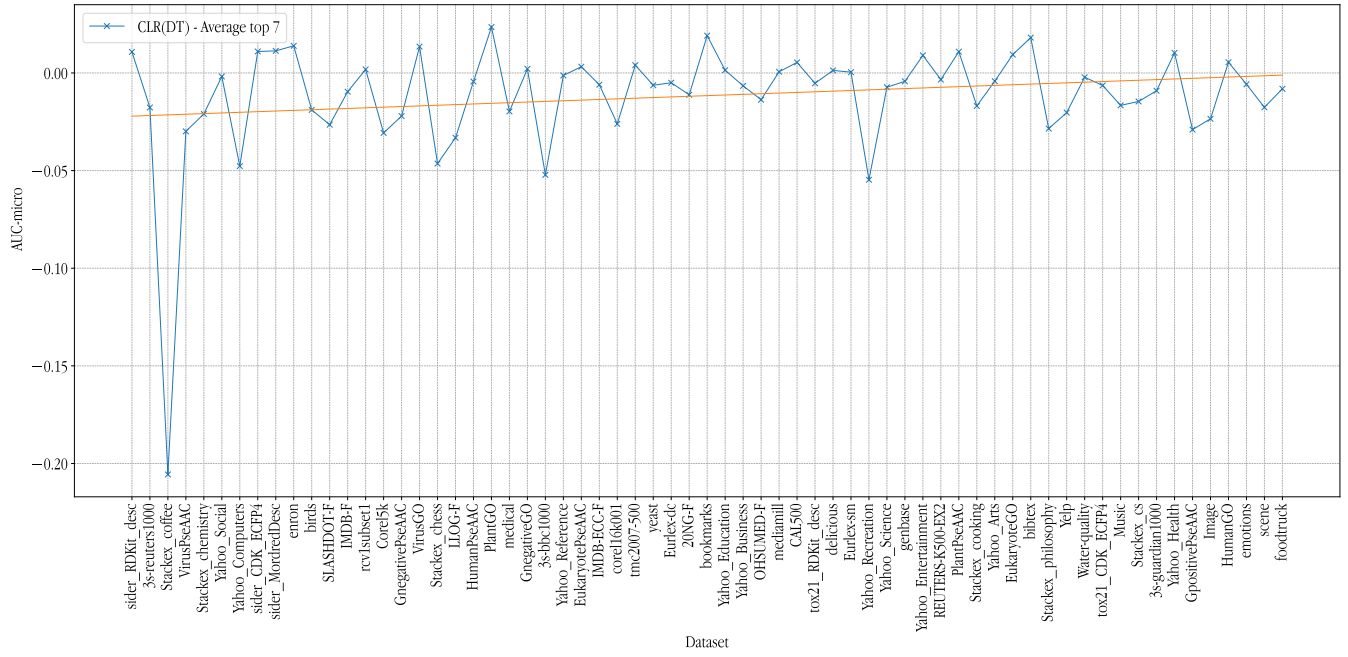


Figure 390: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

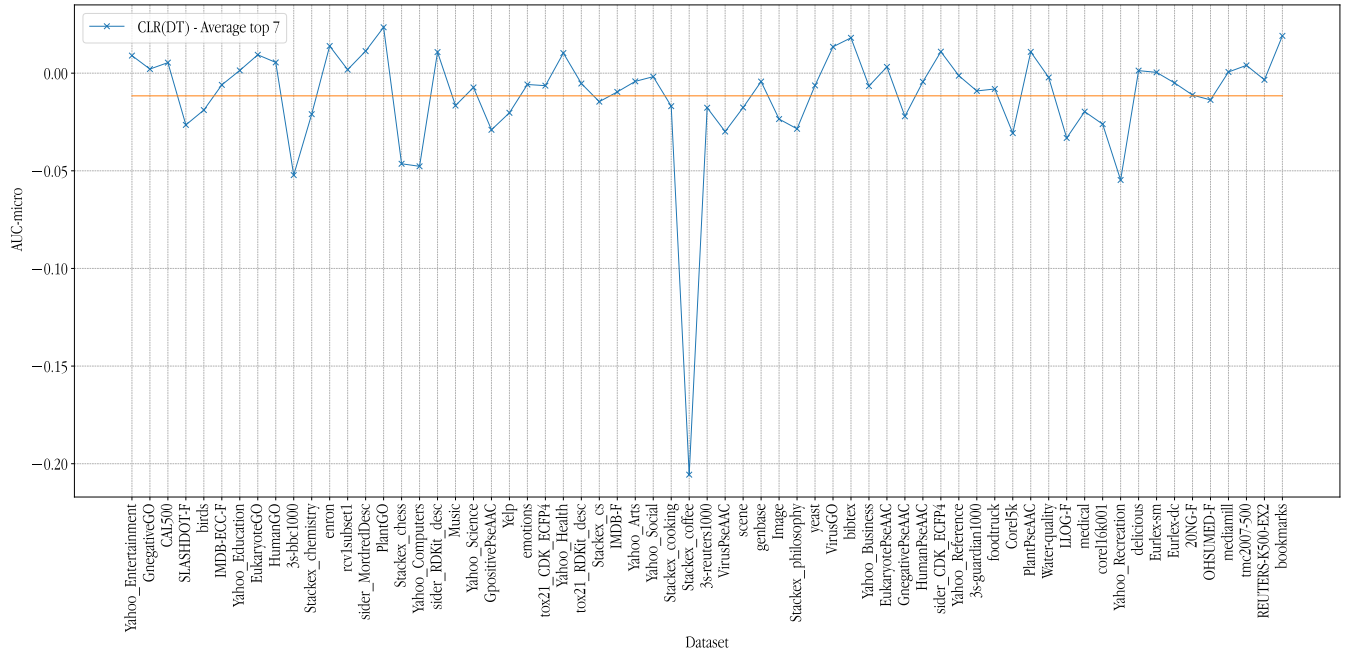


Figure 391: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

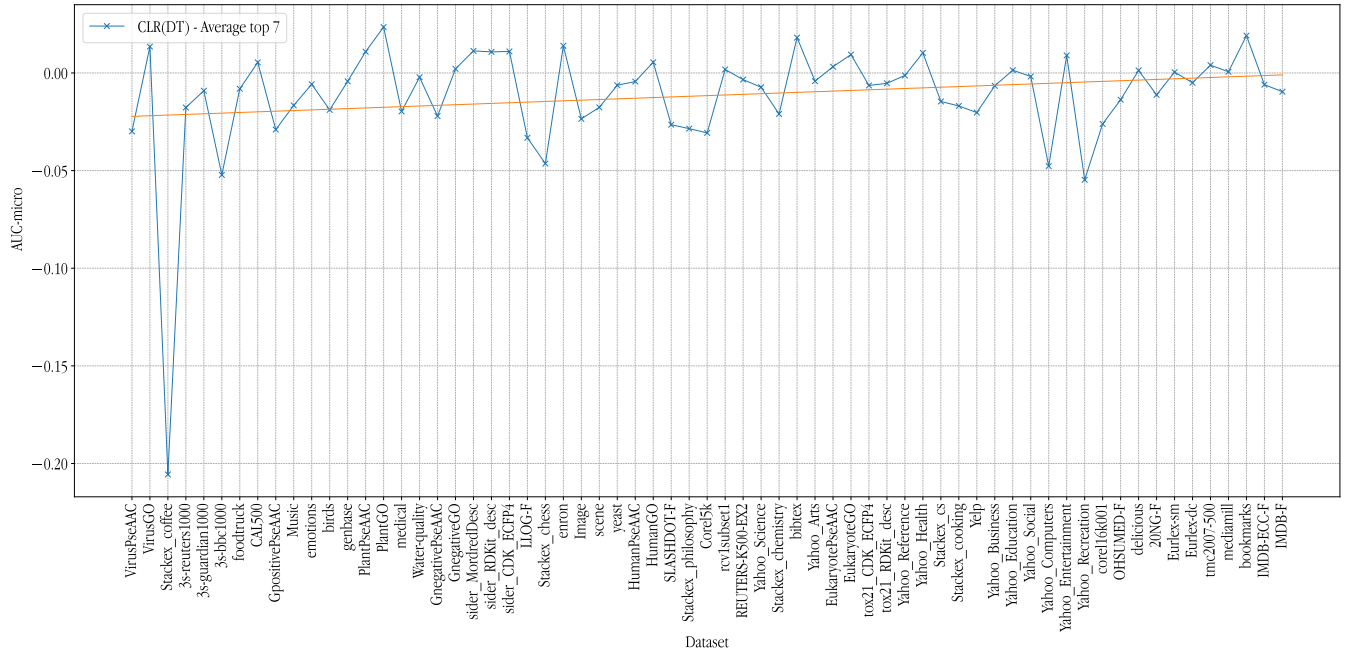


Figure 392: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

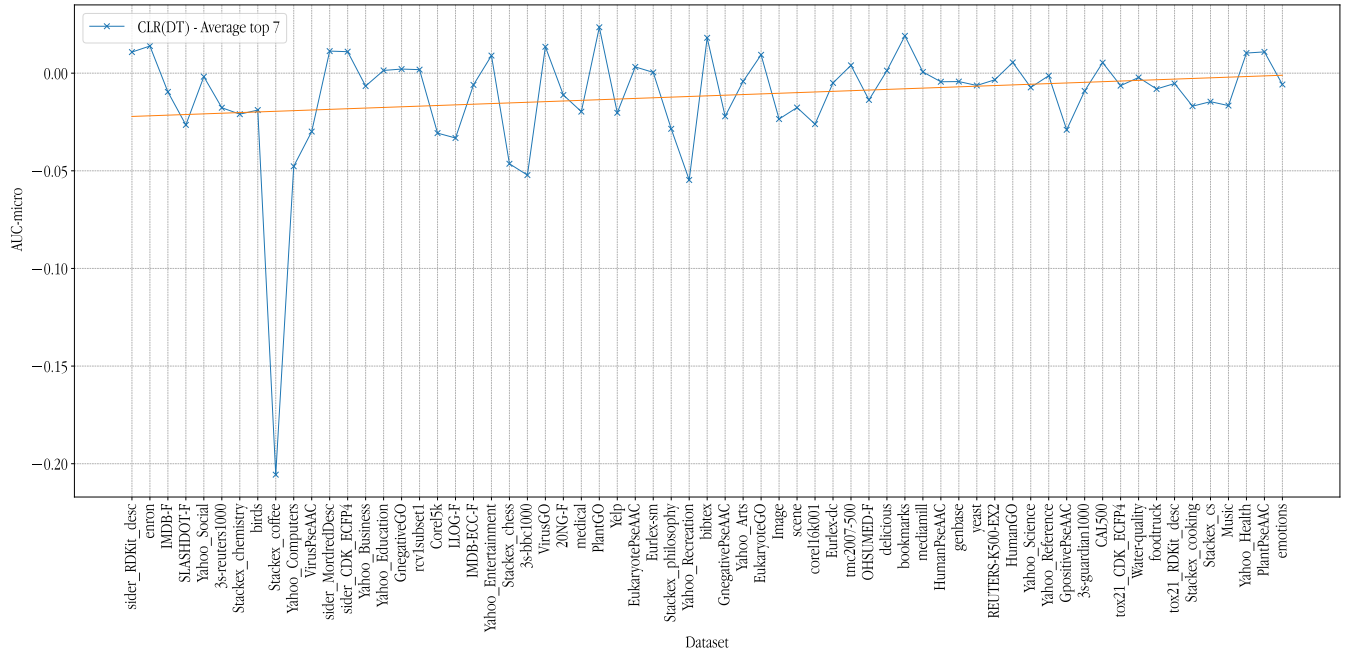


Figure 393: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

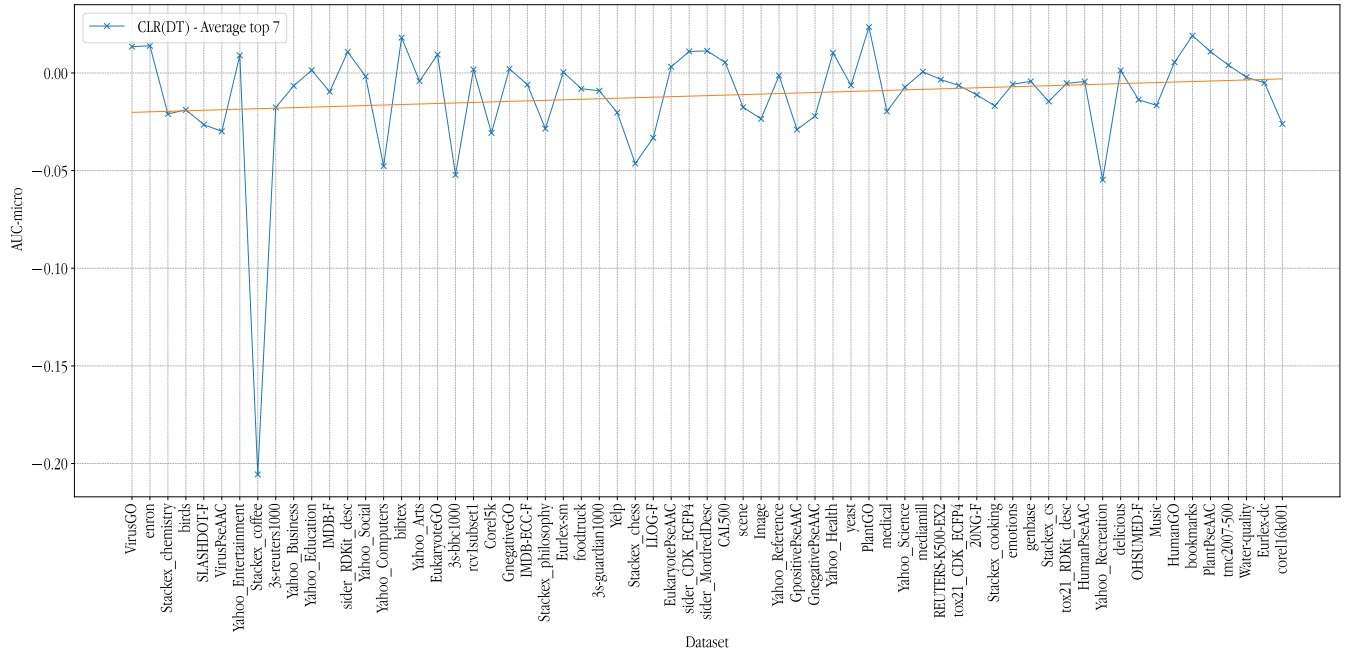


Figure 394: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

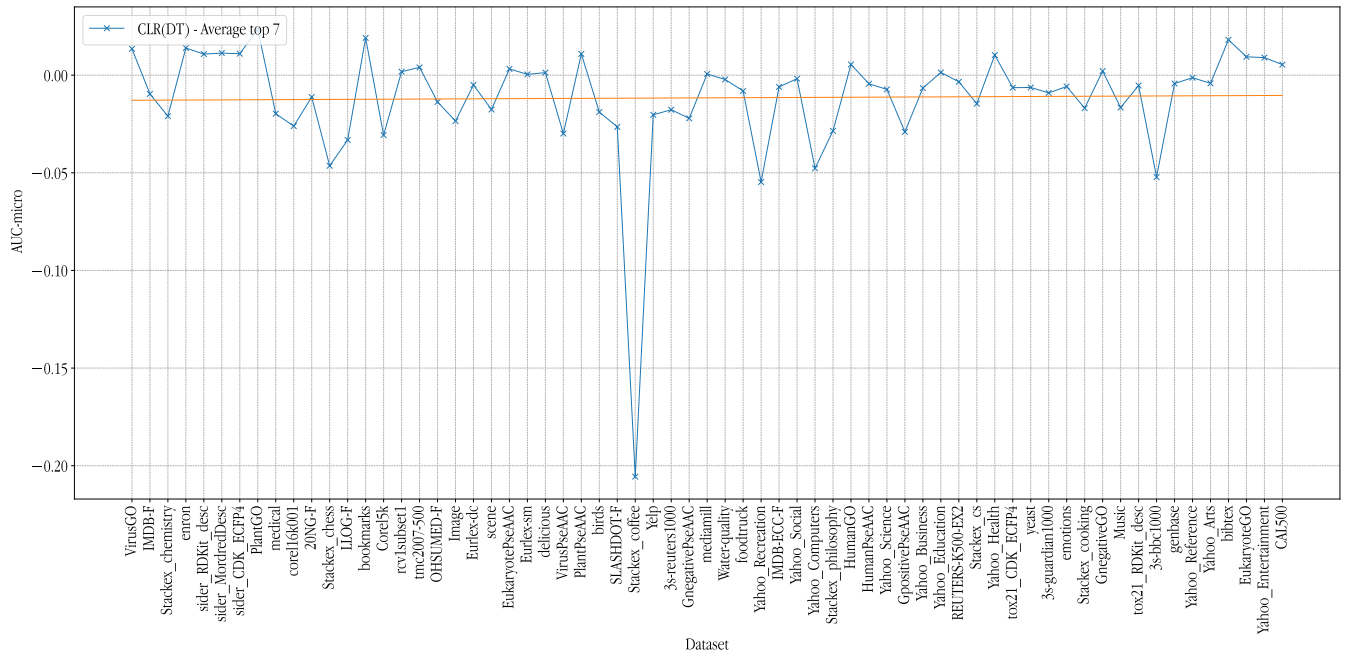


Figure 395: Difference in AUC-micro performance between CLR(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

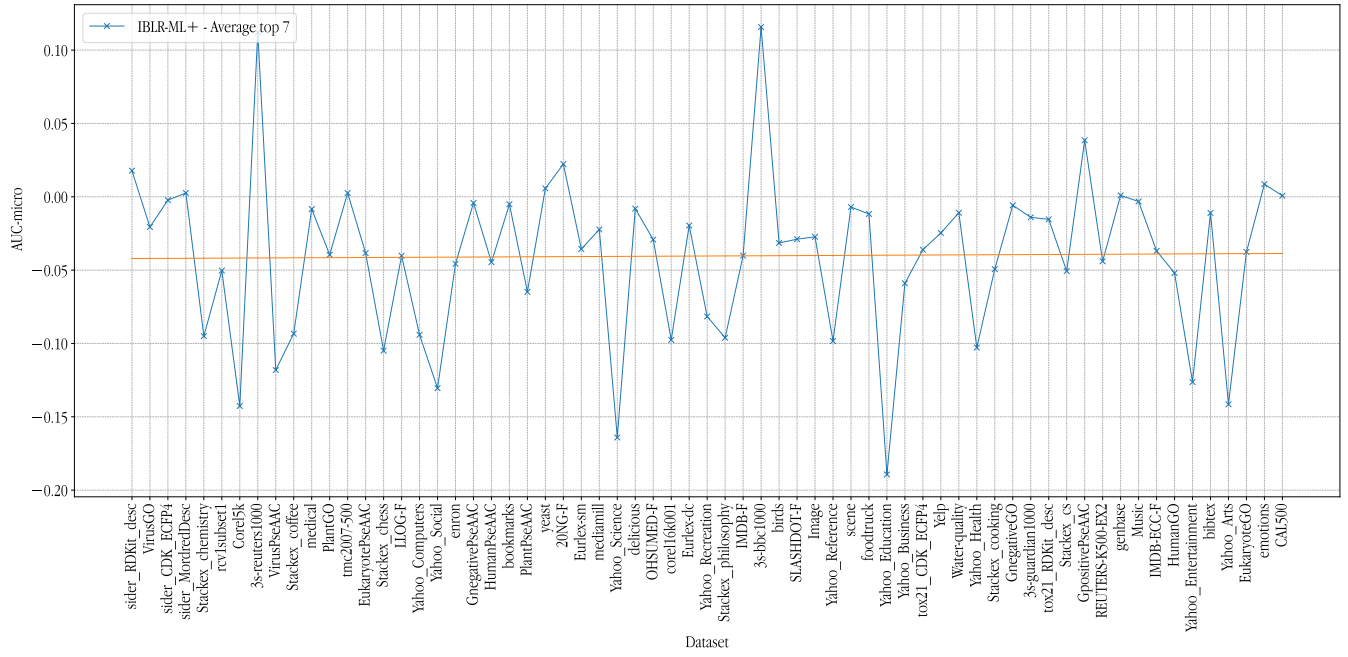


Figure 396: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

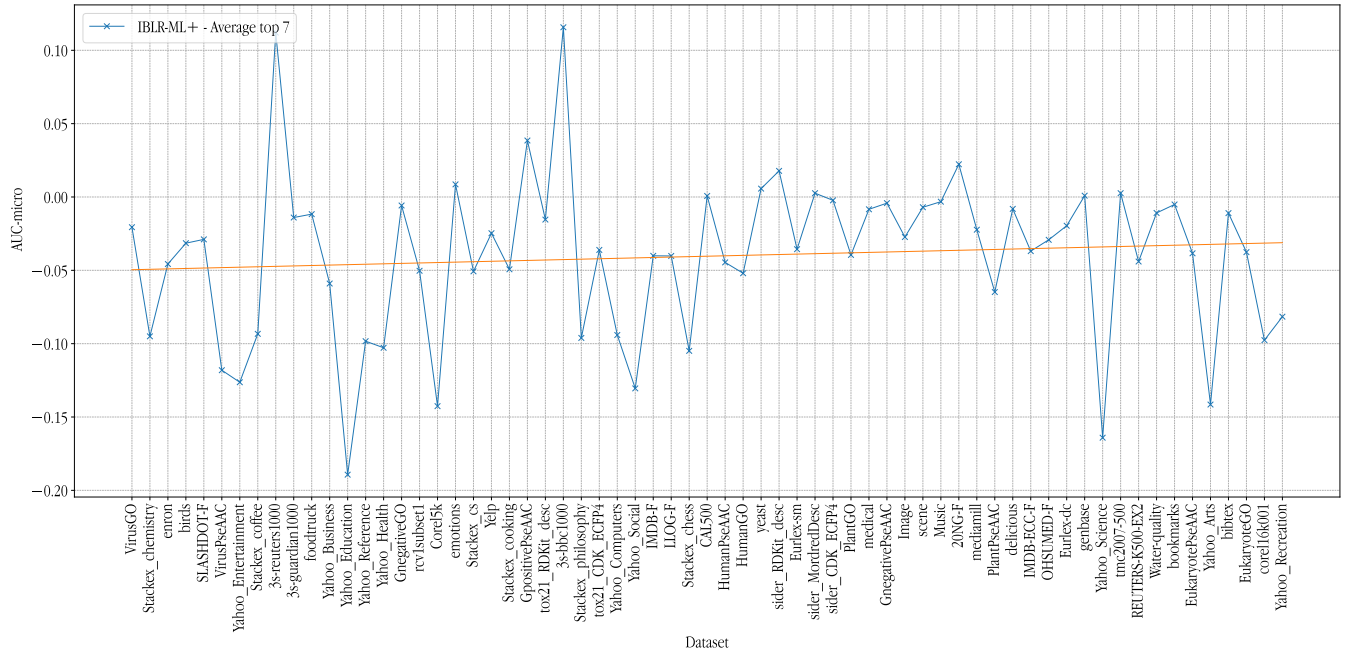


Figure 397: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

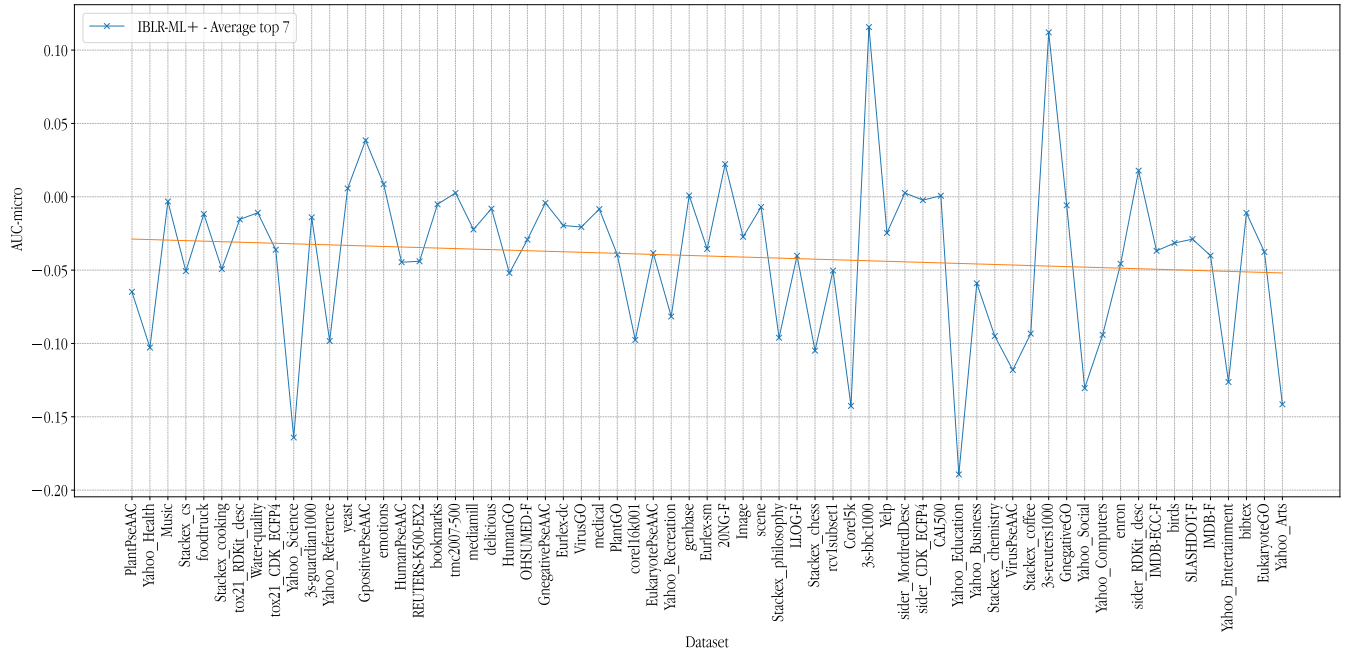


Figure 398: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

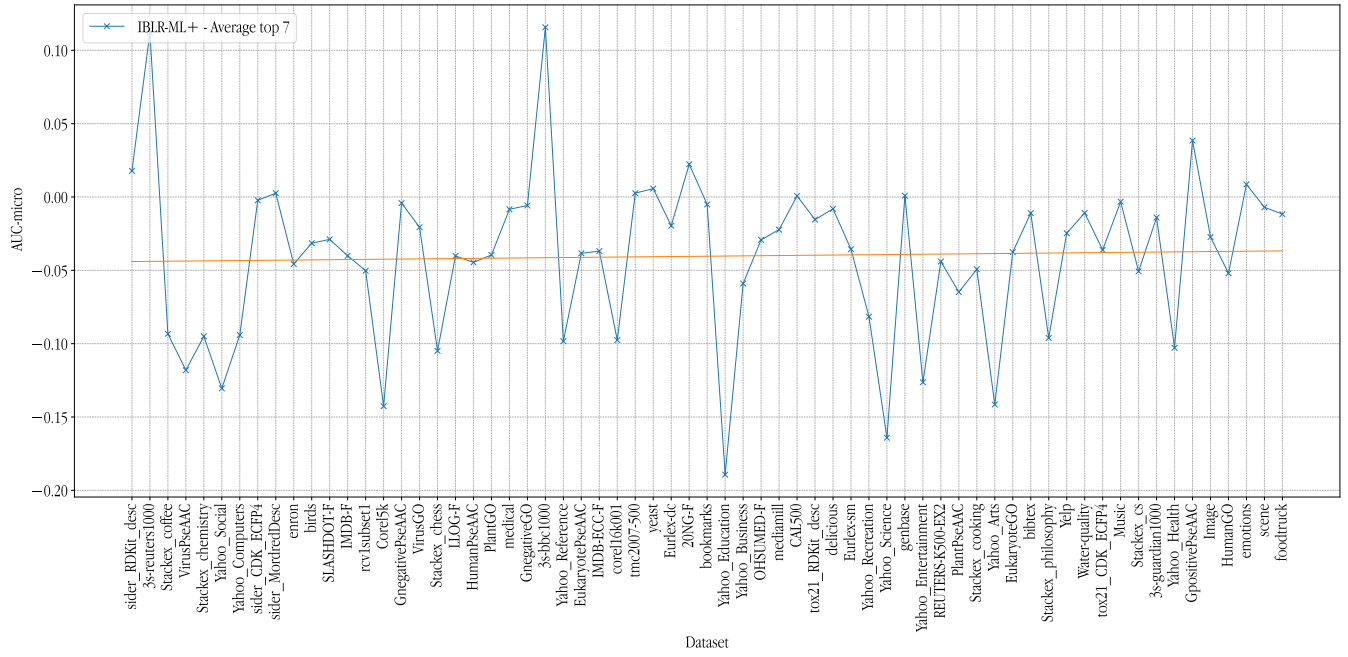


Figure 399: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

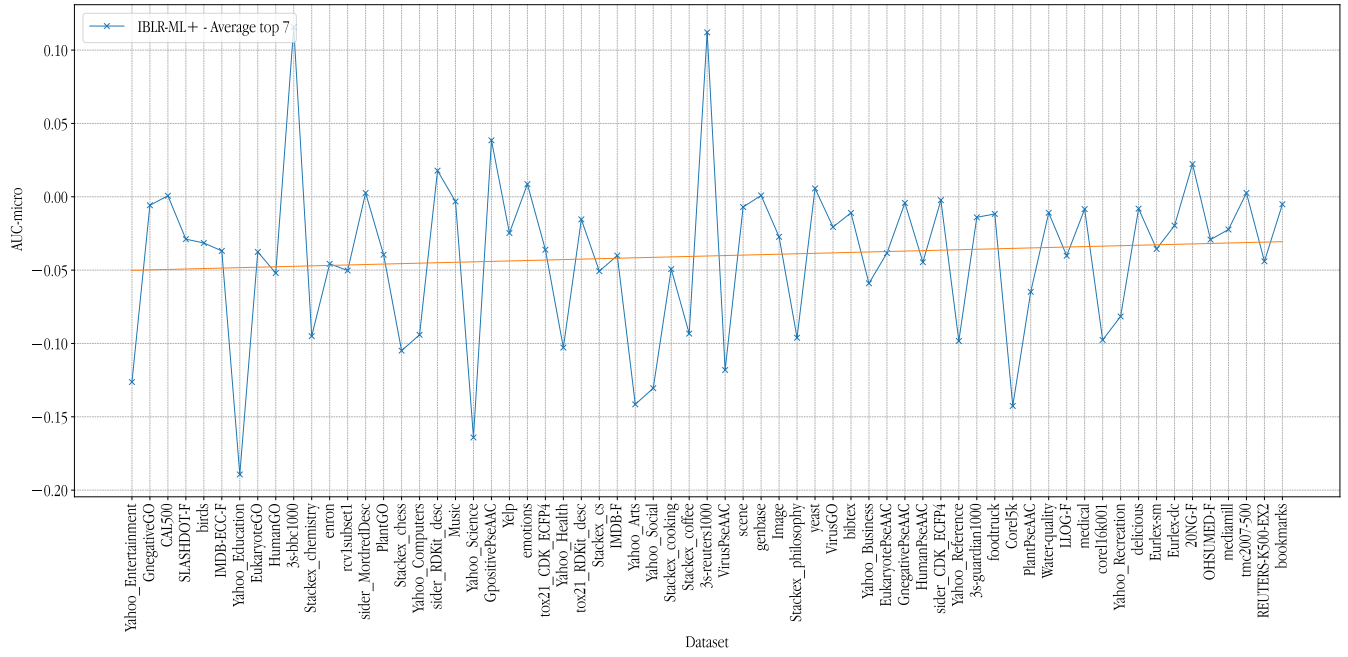


Figure 400: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

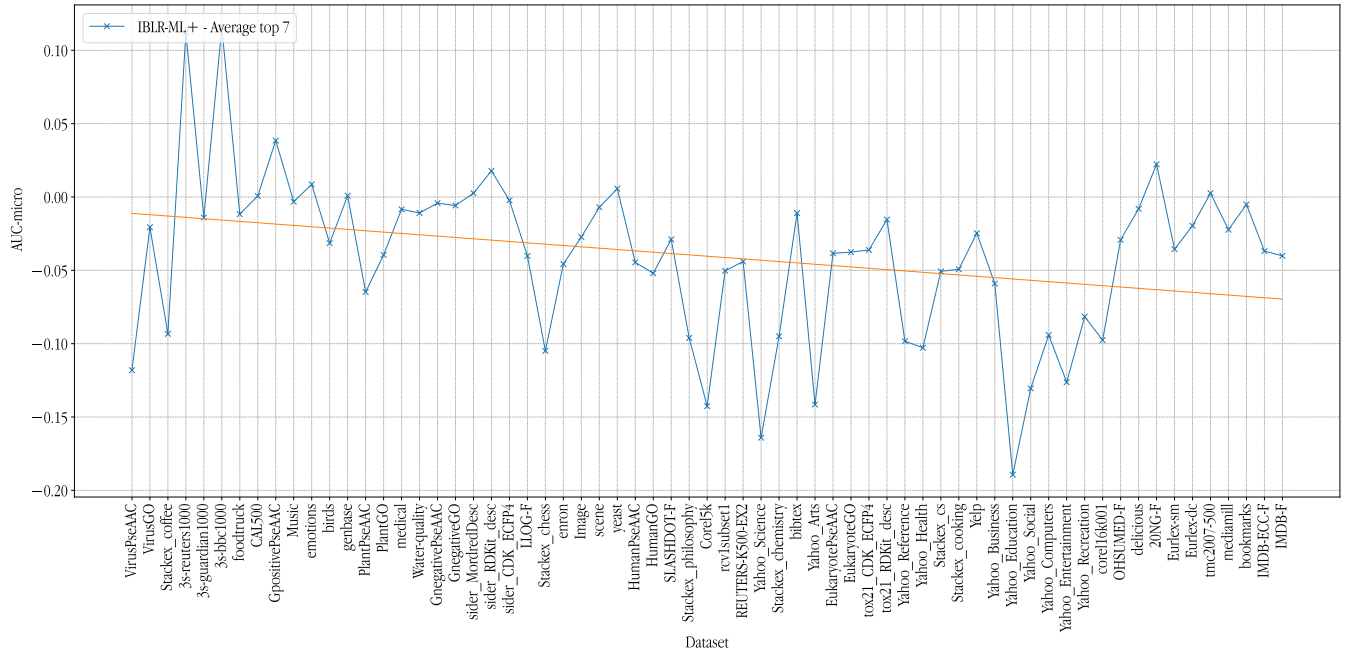


Figure 401: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

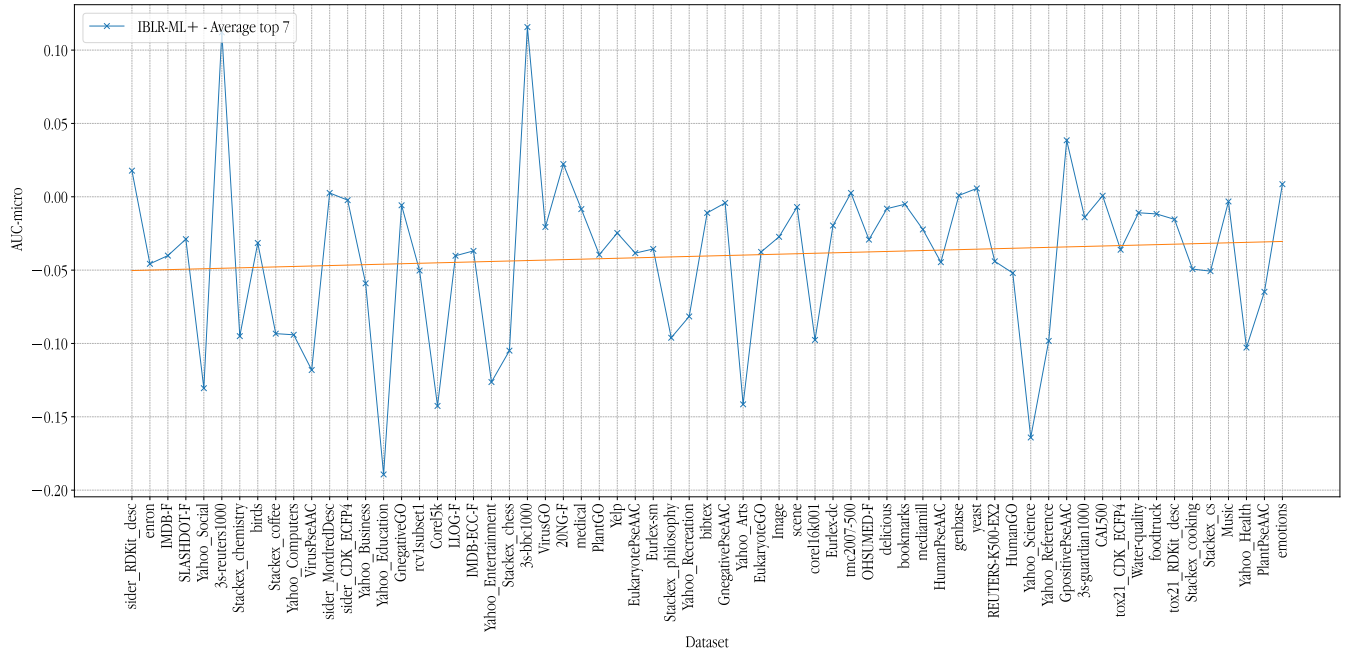


Figure 402: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

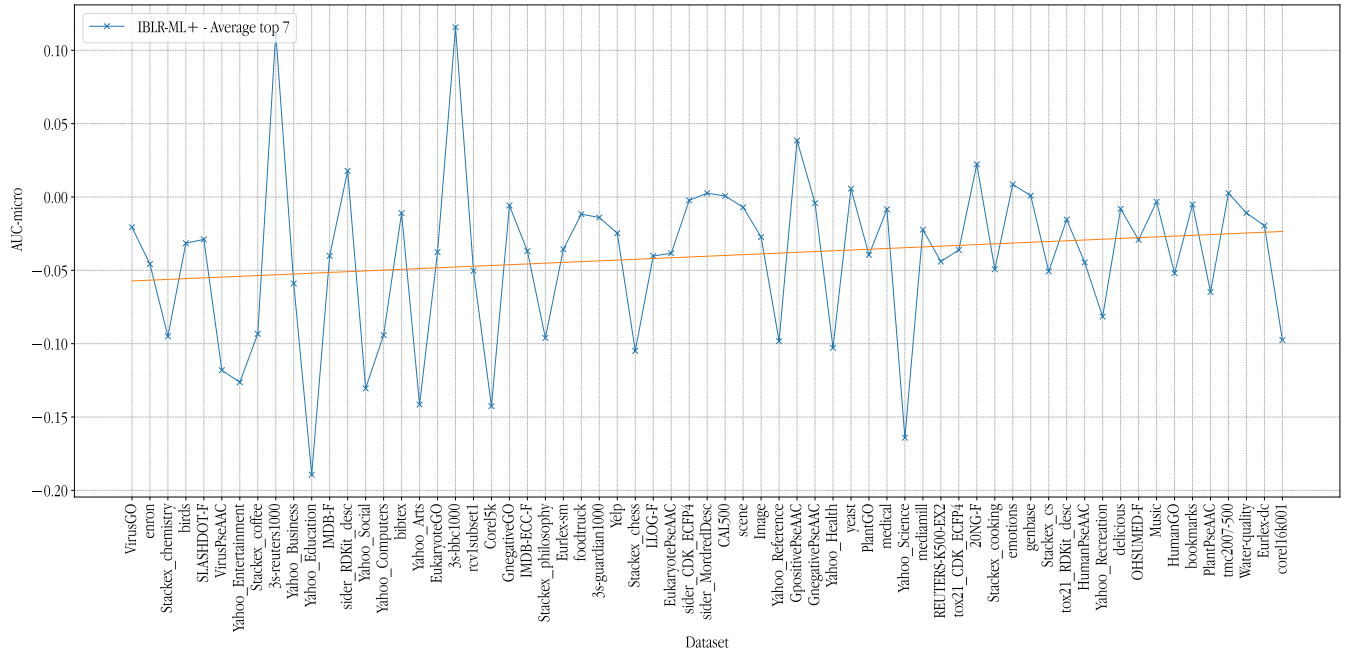


Figure 403: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

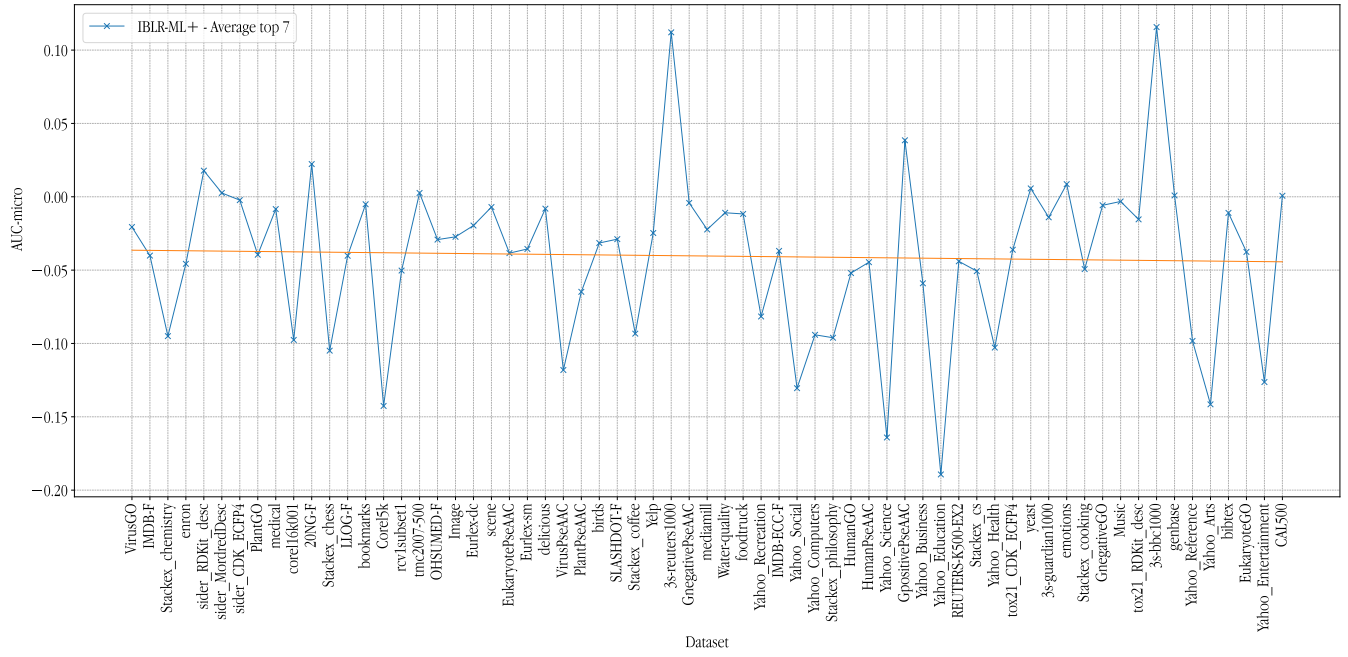


Figure 404: Difference in AUC-micro performance between IBLR-ML+ and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

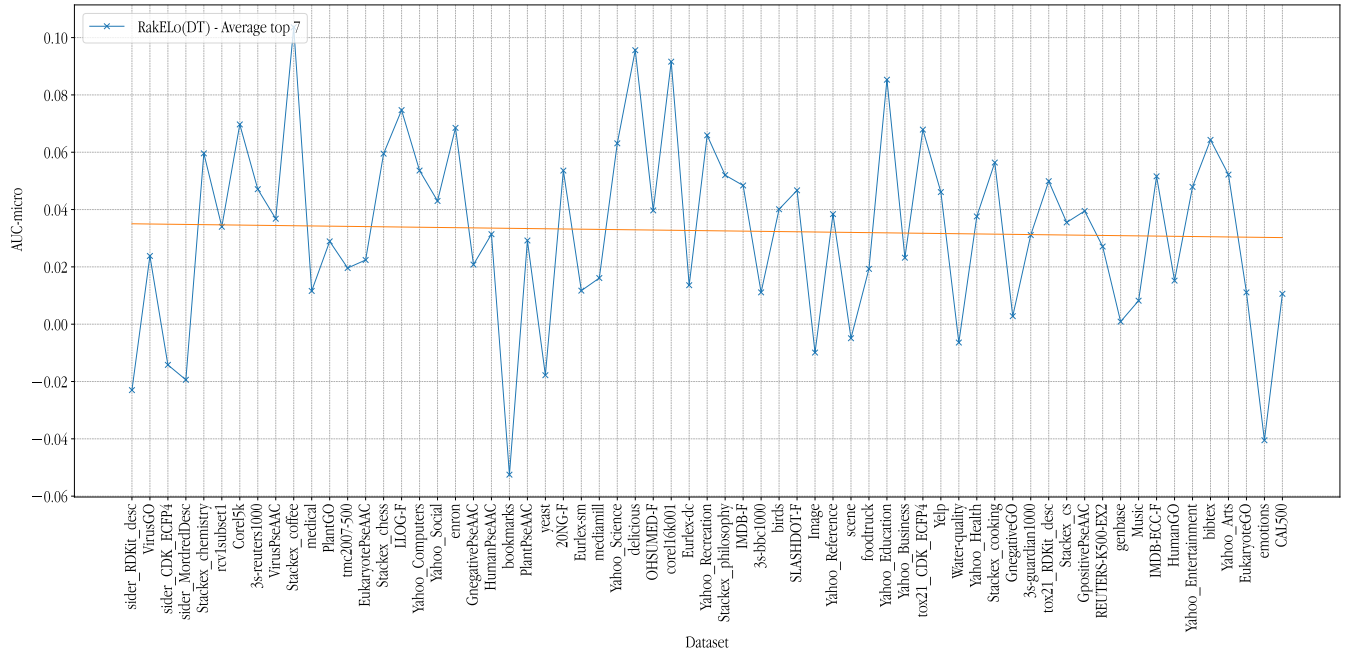


Figure 405: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

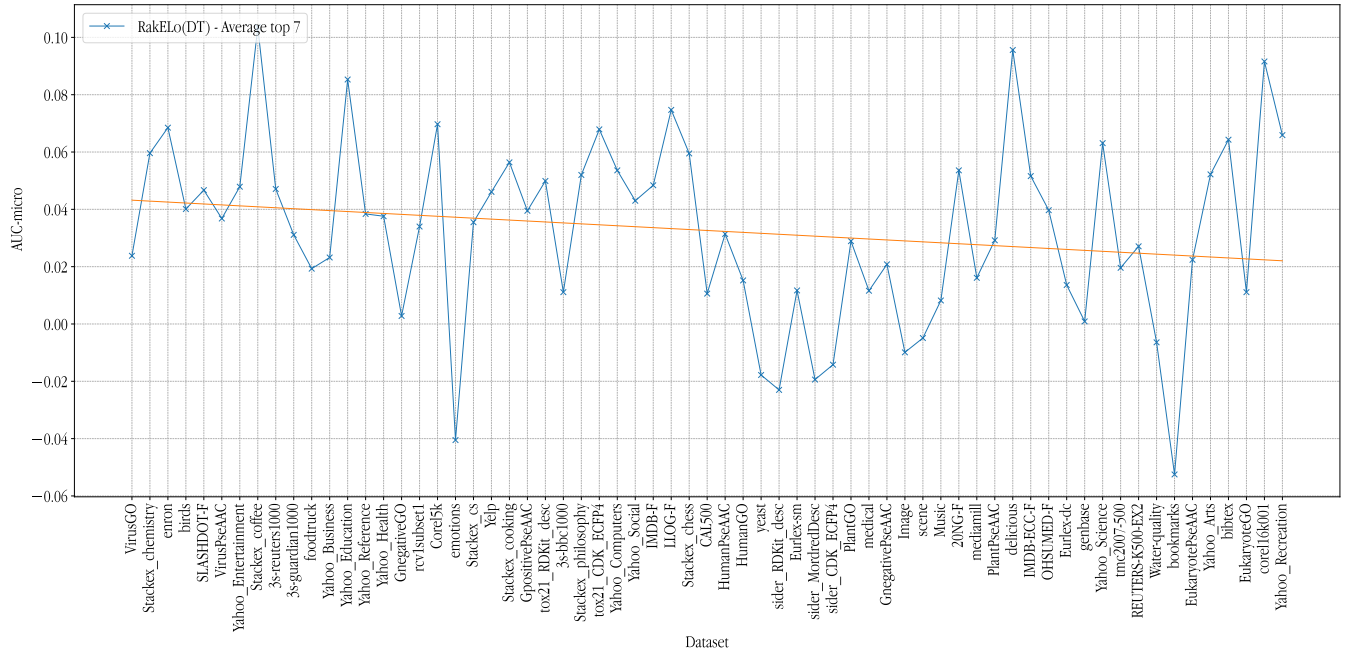


Figure 406: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

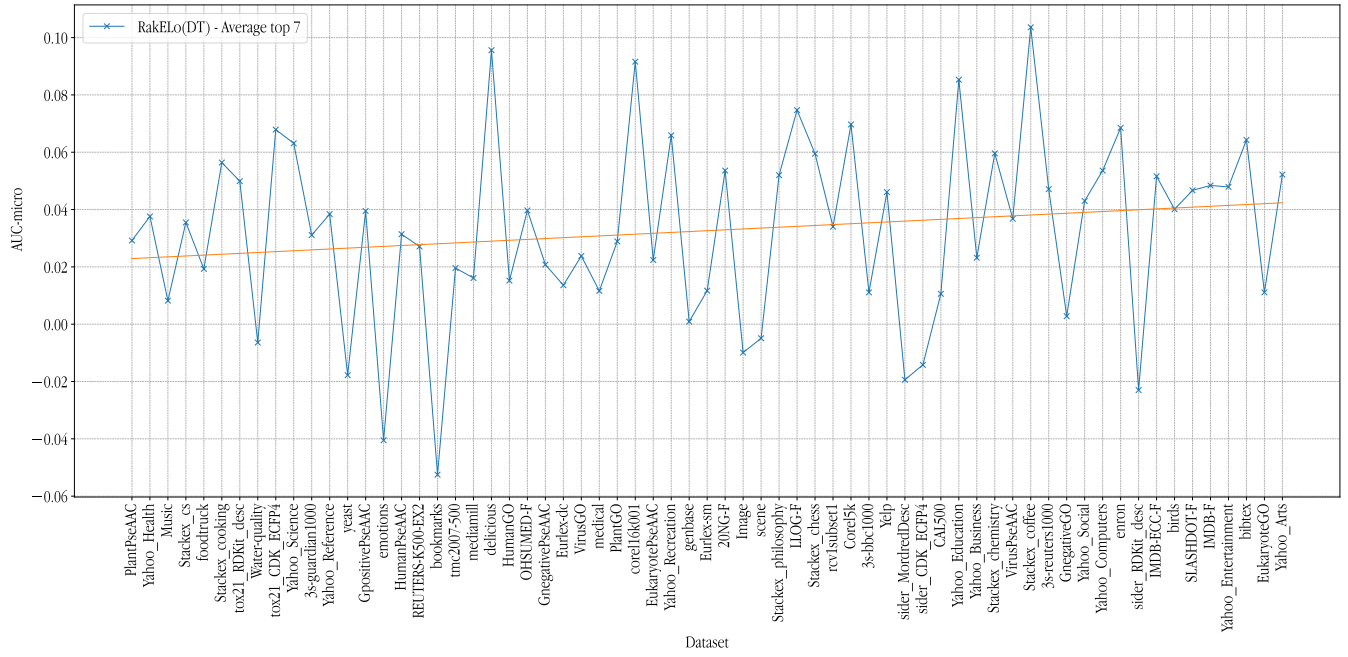


Figure 407: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

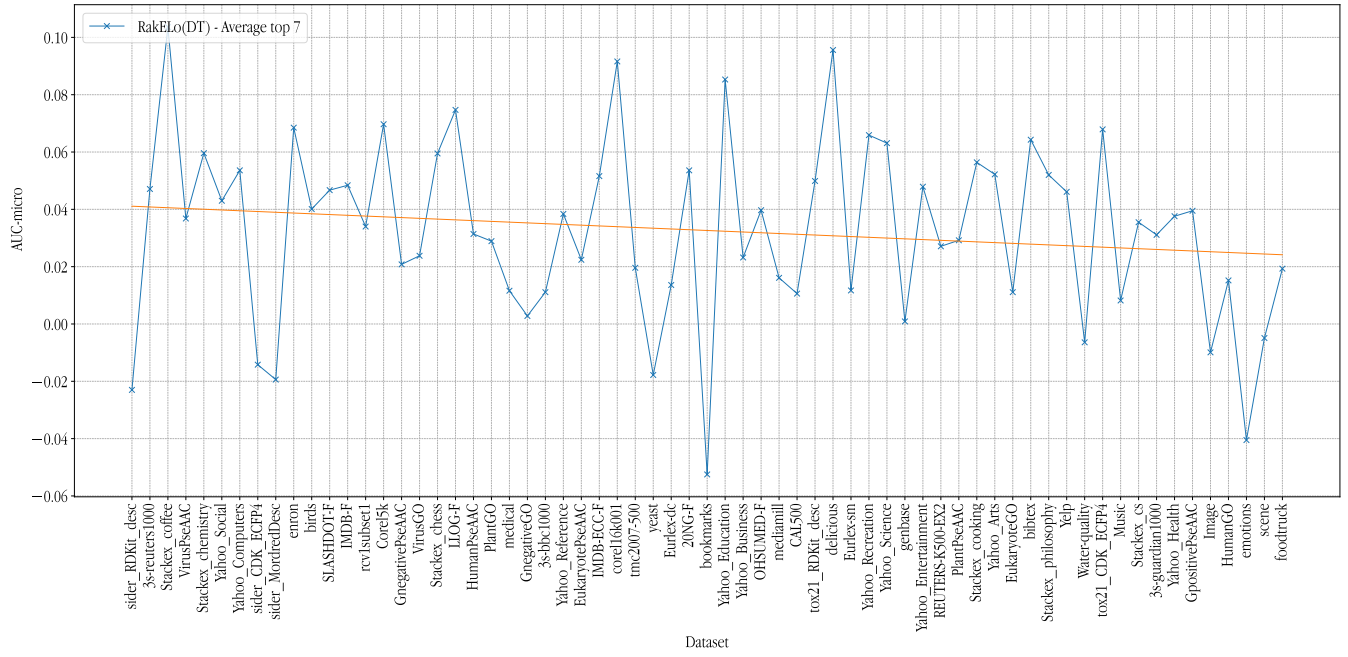


Figure 408: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

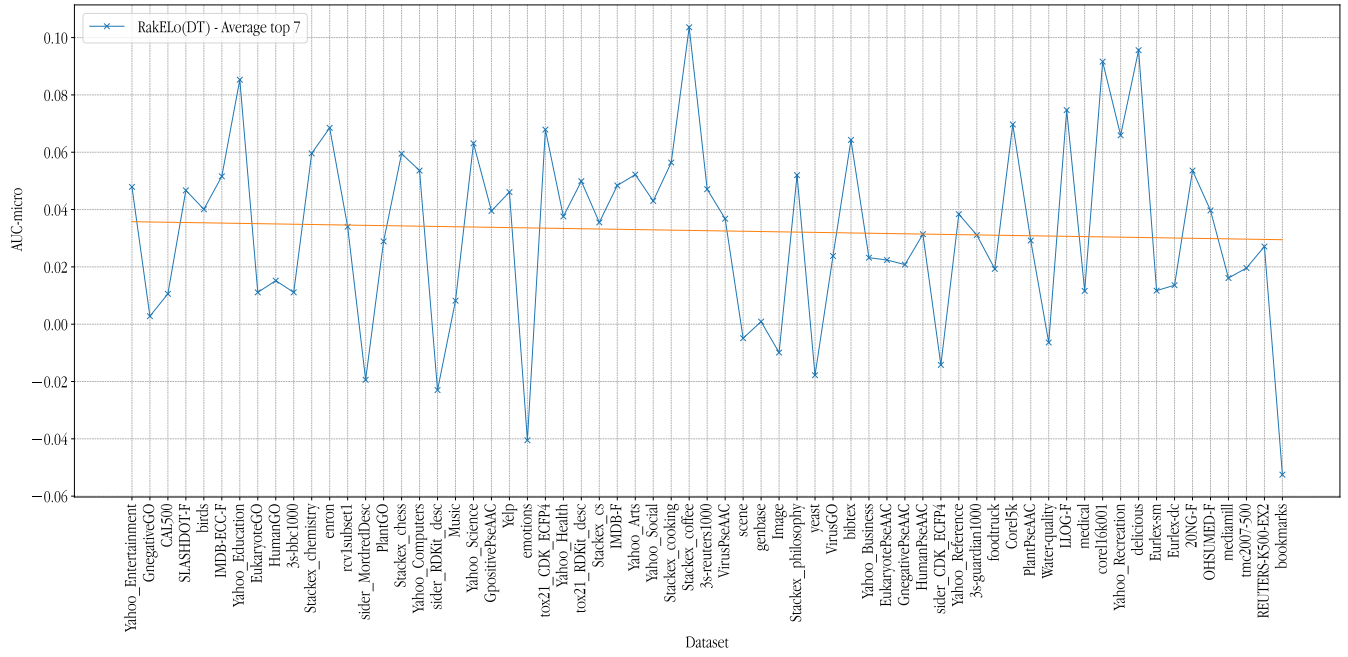


Figure 409: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

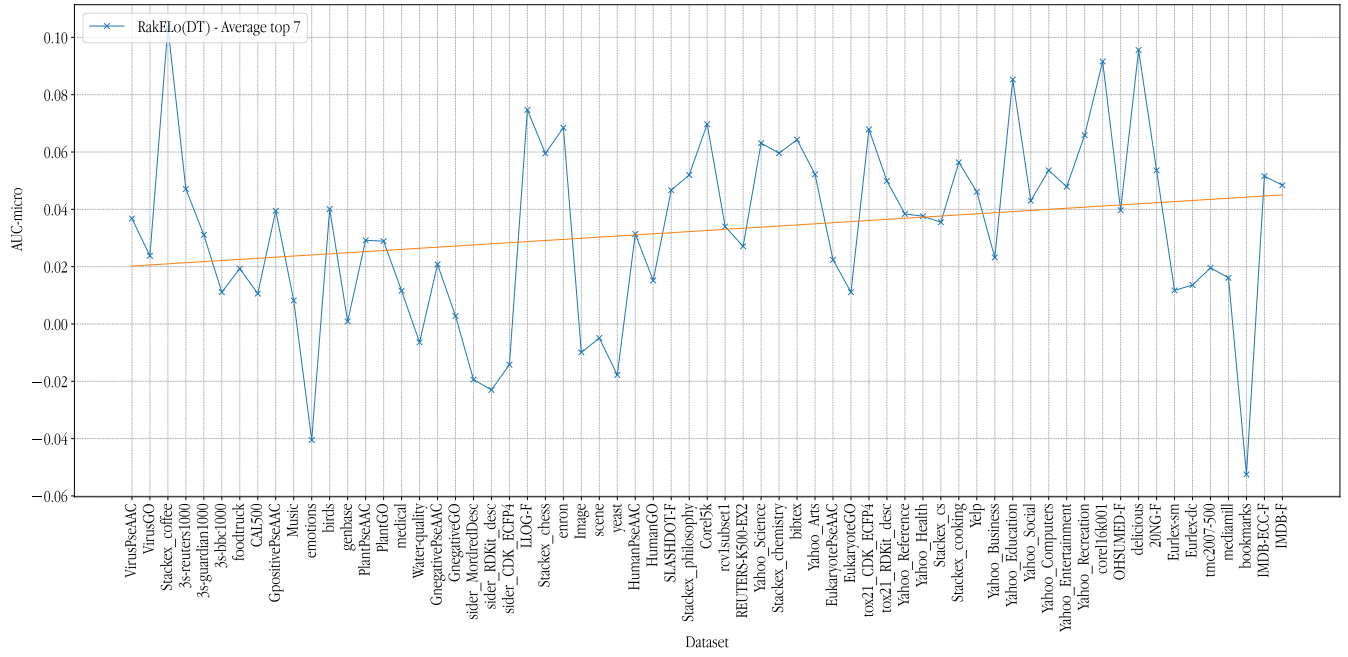


Figure 410: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

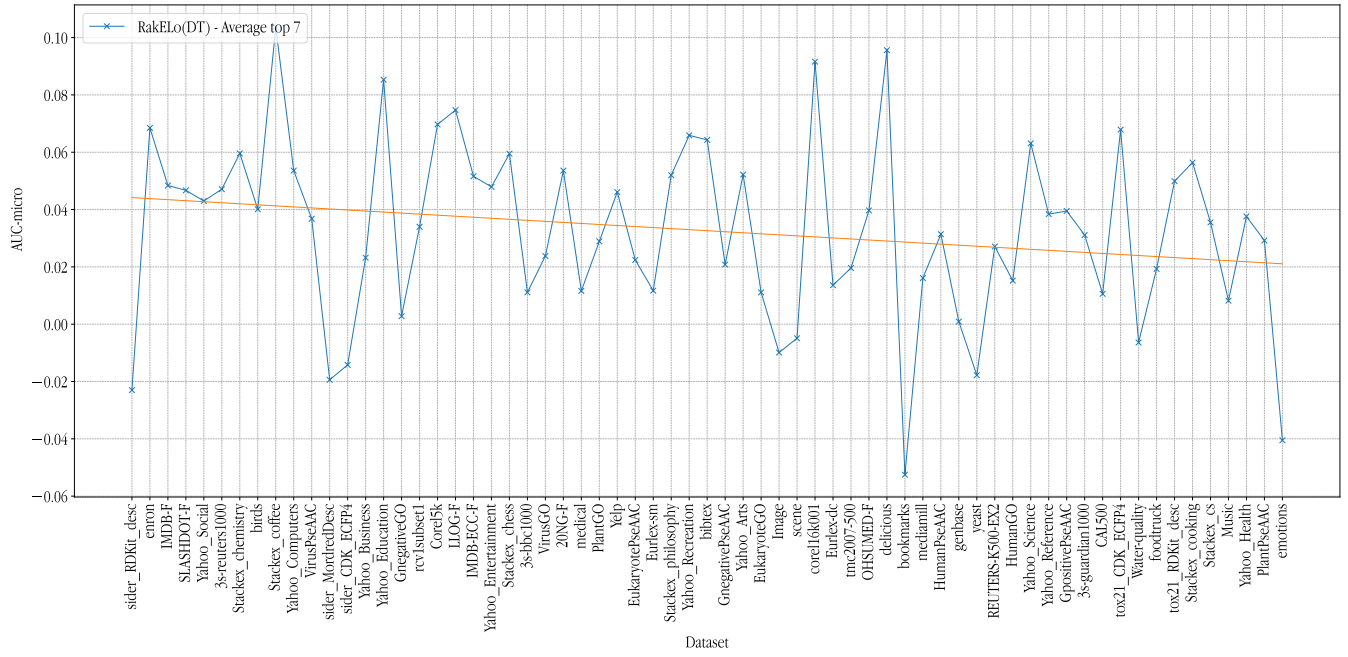


Figure 411: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

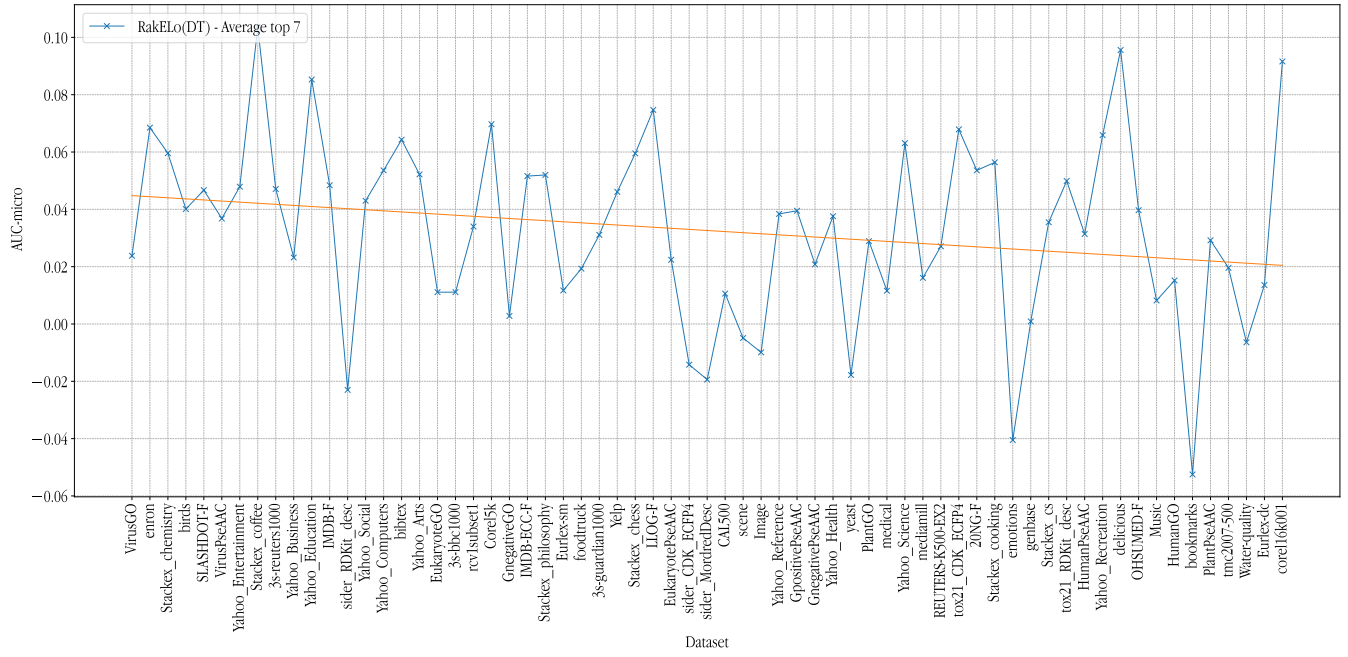


Figure 412: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

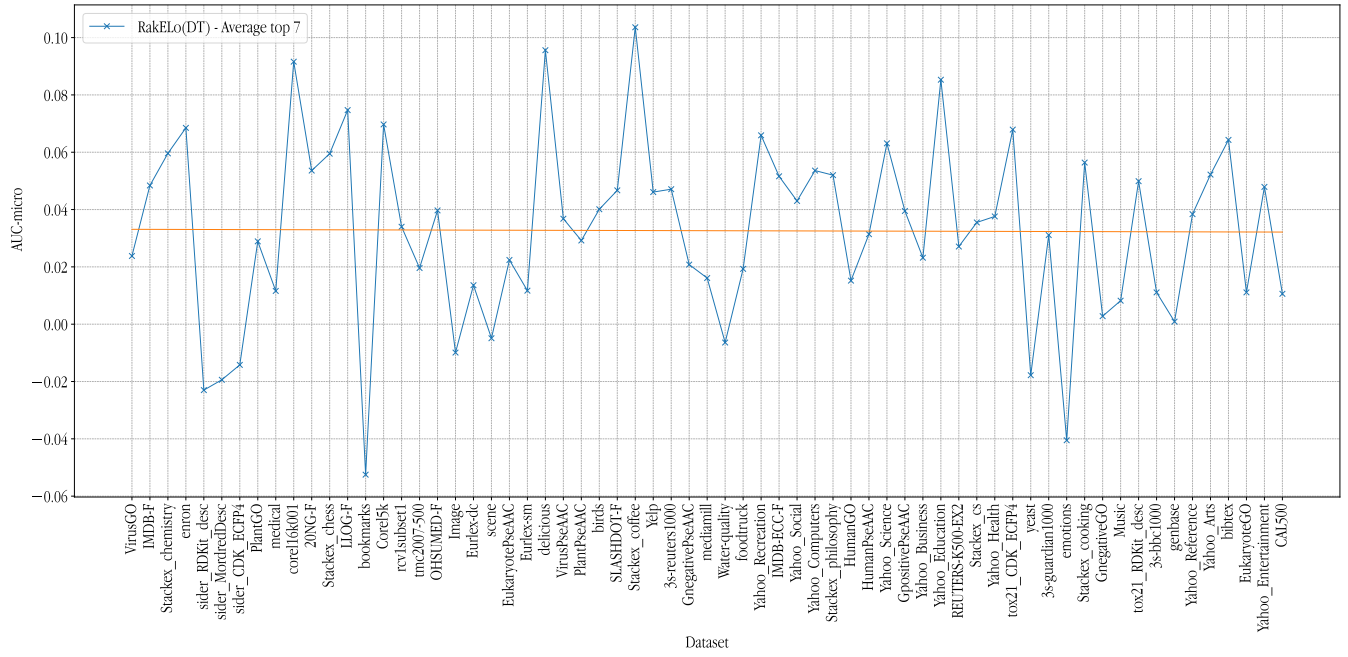


Figure 413: Difference in AUC-micro performance between RAkELo(DT) and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

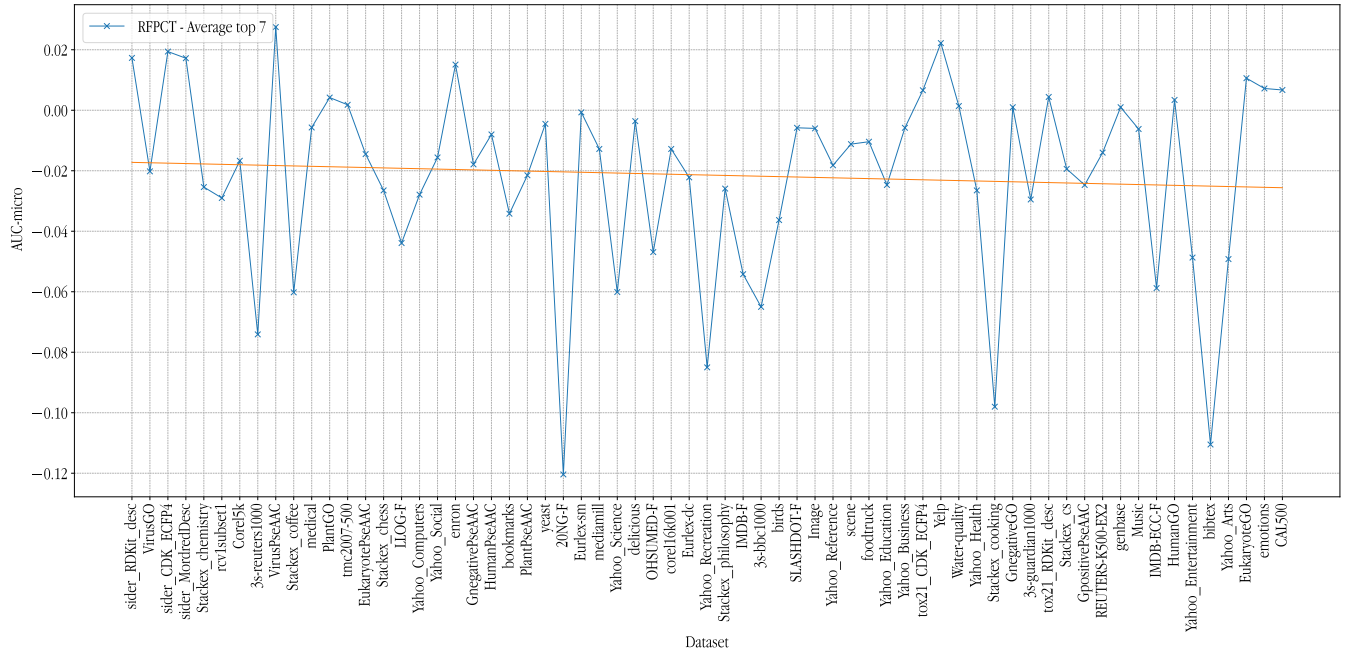


Figure 414: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of labels cardinality. A linear regression is shown as a red line.

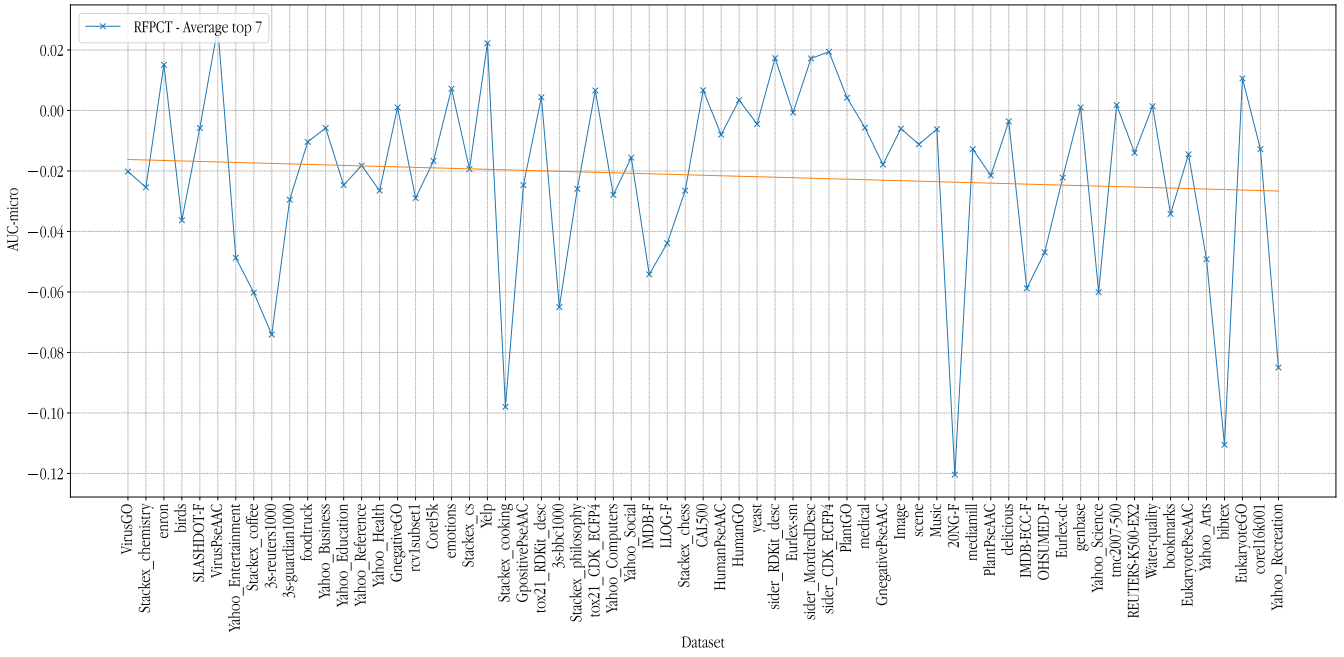


Figure 415: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of CVIR. A linear regression is shown as a red line.

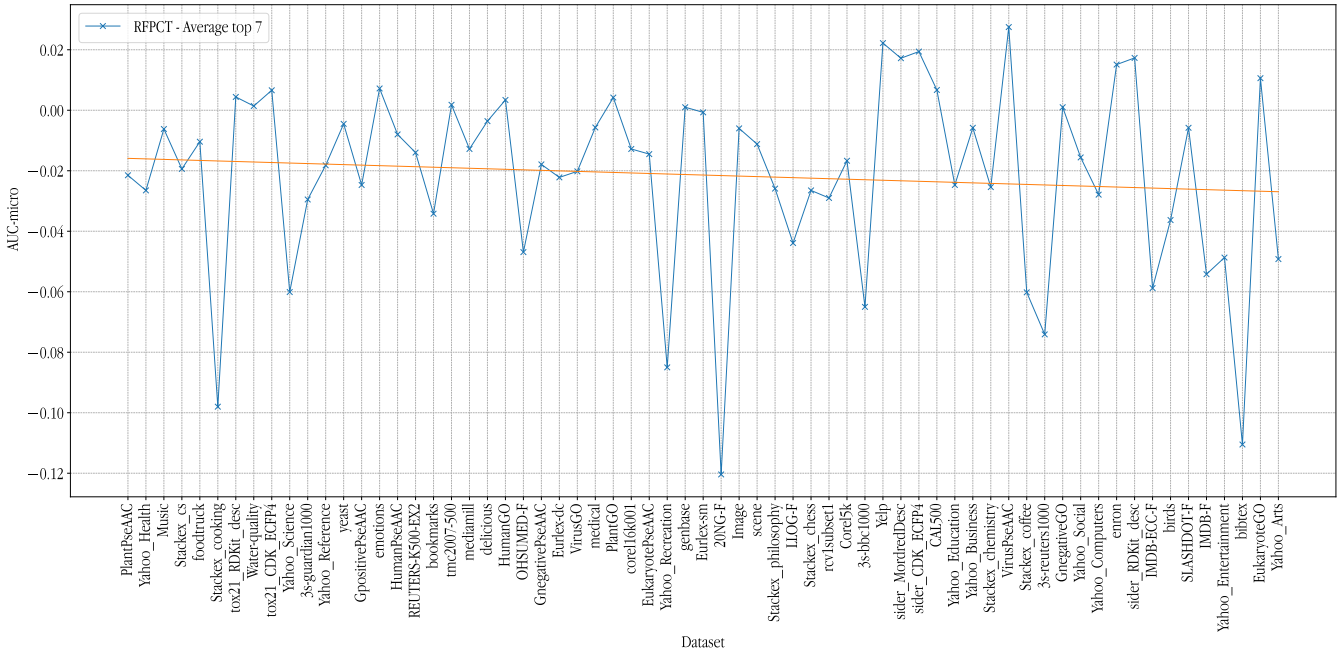


Figure 416: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of labels density. A linear regression is shown as a red line.

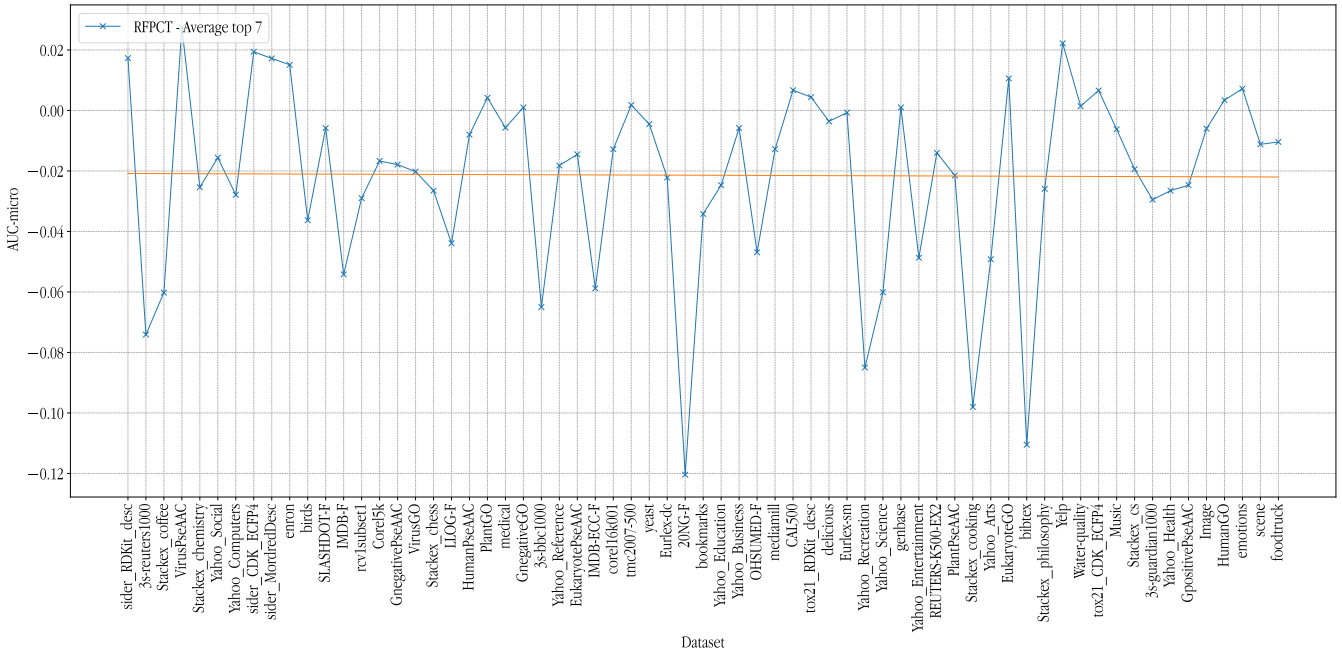


Figure 417: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of labels diversity. A linear regression is shown as a red line.

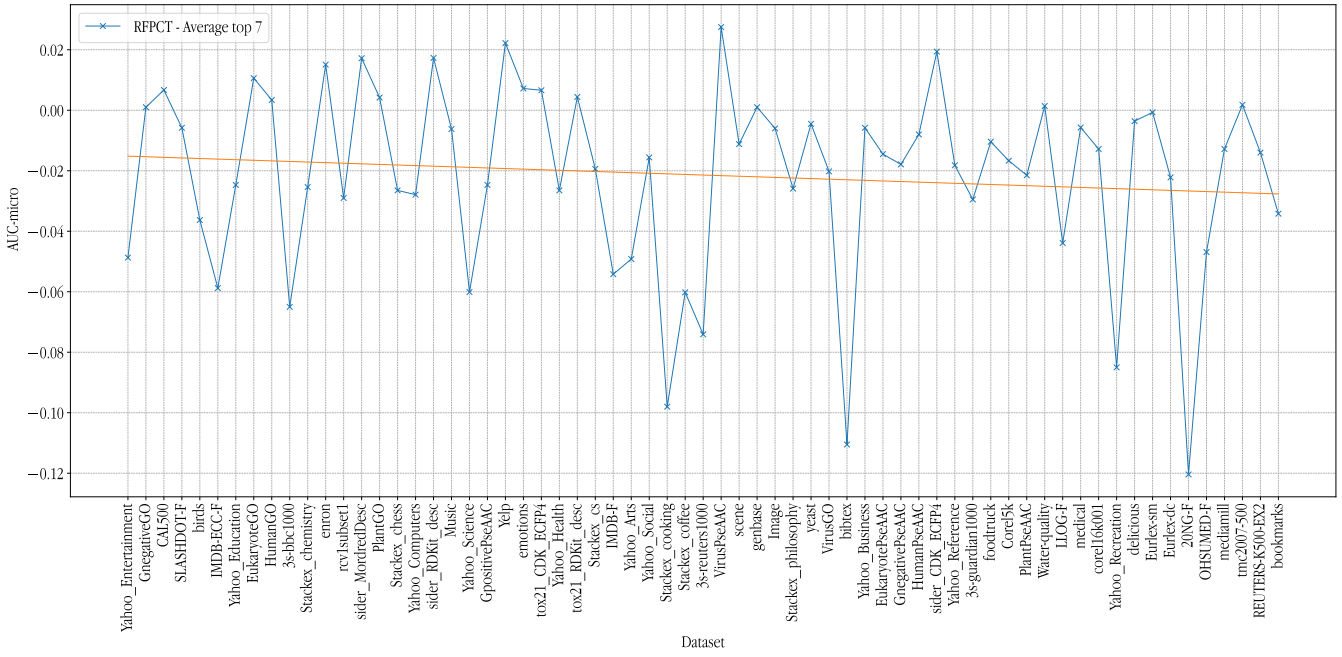


Figure 418: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of number of inputs. A linear regression is shown as a red line.

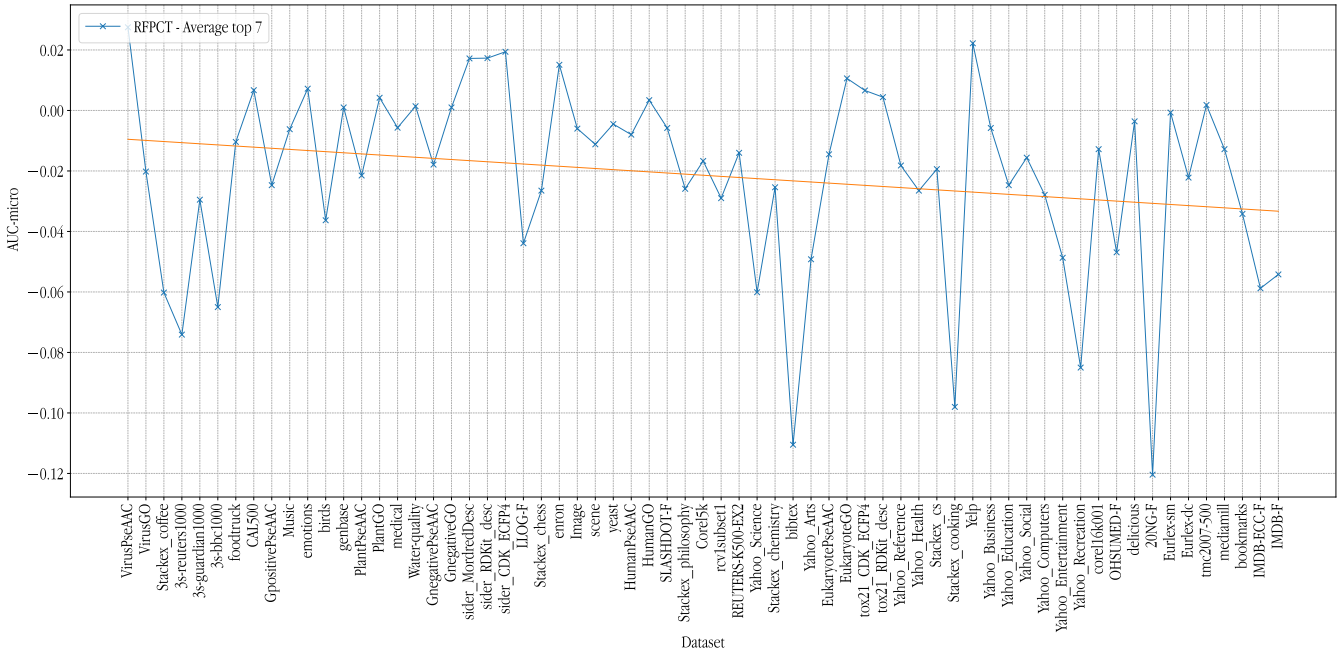


Figure 419: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of number of instances. A linear regression is shown as a red line.

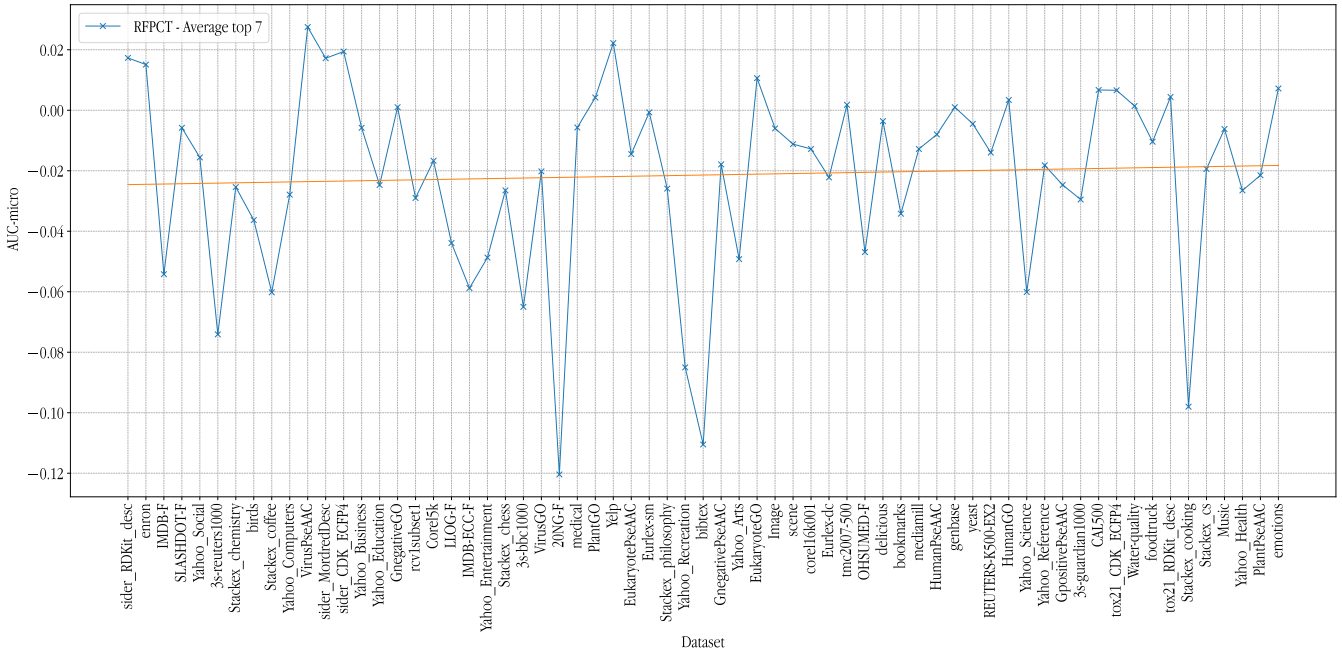


Figure 420: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of number of labels. A linear regression is shown as a red line.

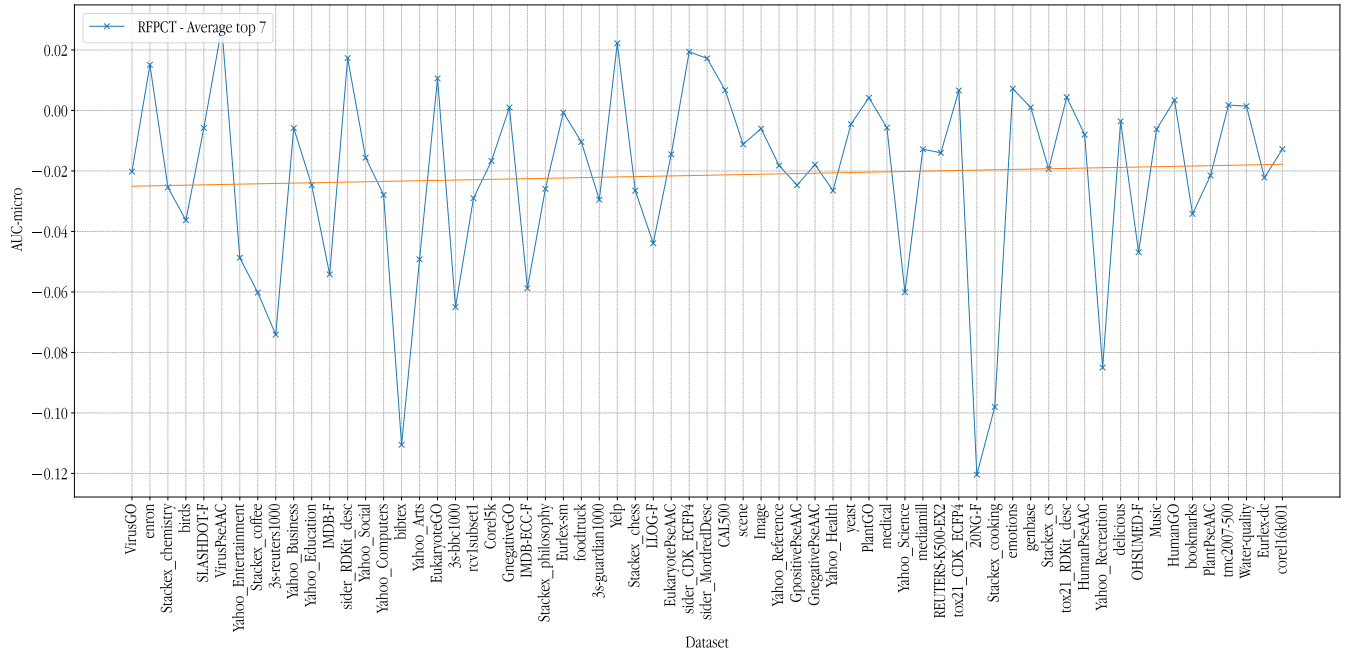


Figure 421: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of MeanIR. A linear regression is shown as a red line.

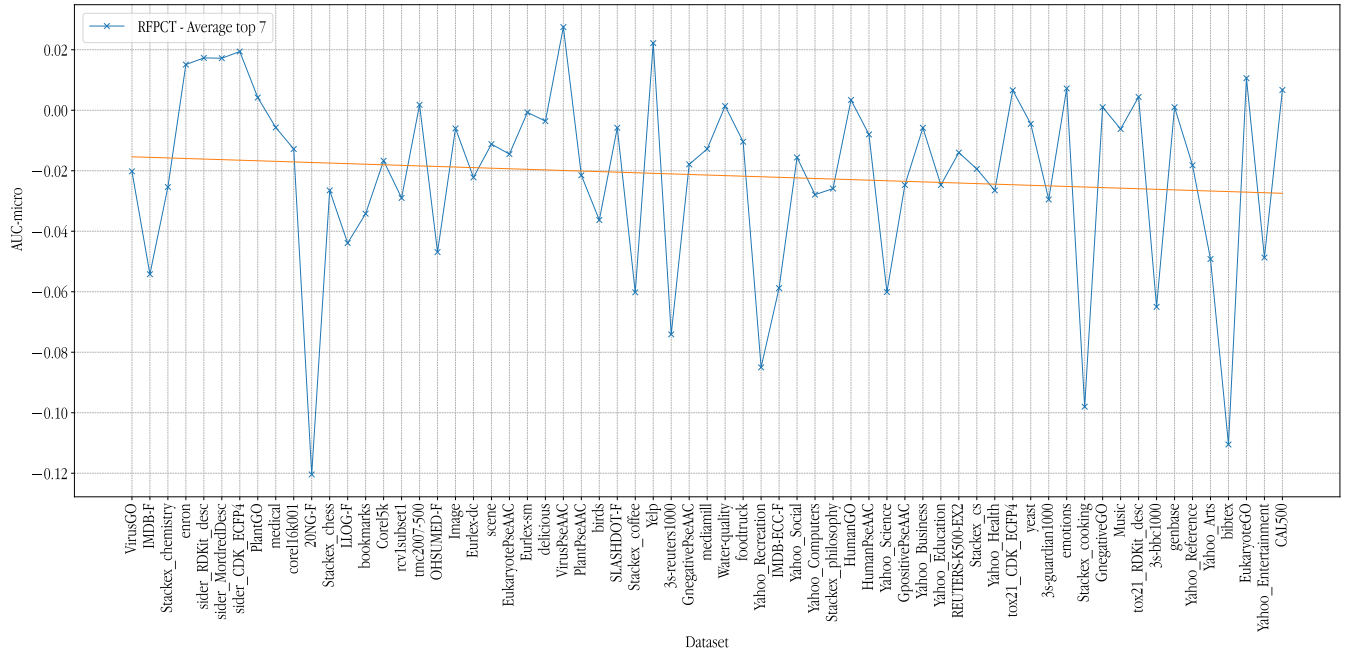


Figure 422: Difference in AUC-micro performance between RFPCT and the average top seven methods in increasing values of proportion of distinct labels. A linear regression is shown as a red line.

6. Detailed results

Table 4: Detailed results for BR(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4383	3.67	0.3358	0.6519	0.9816	0.9828
3s-bbc1000	0.6667	2.47	0.6019	0.5250	0.8686	0.8778
3s-guardian1000	0.6774	2.81	0.6290	0.4731	0.7952	0.8000
3s-reuters1000	0.8000	2.50	0.7000	0.4347	0.8520	0.8406
bibtex	0.5419	71.52	0.5454	0.4015	0.9890	0.9907
birds	0.4872	6.92	0.5017	0.5404	0.8608	0.9578
bookmarks	0.6572	87.38	0.5777	0.3458	0.9634	0.9666
CAL500	0.5882	150.06	0.6778	0.3256	0.7587	0.8907
corel16k001	0.8497	108.15	0.8117	0.1419	0.9743	0.9761
Corel5k	0.7920	163.30	0.8443	0.1726	0.6698	0.9906
delicious	0.5867	831.78	0.5028	0.2552	0.9335	0.9506
emotions	0.3833	2.25	0.3028	0.7228	0.8692	0.8821
enron	0.3041	22.68	0.3931	0.5570	0.8052	0.9668
EukaryoteGO	0.2188	1.97	0.1423	0.8286	0.9945	0.9960
EukaryotePseAAC	0.7465	7.88	0.6566	0.3651	0.9573	0.9635
Eurlex-dc	0.3114	49.88	0.2665	0.6955	0.7589	0.9994
Eurlex-sm	0.2191	28.11	0.2466	0.7317	0.8287	0.9984
foodtruck	0.3415	3.71	0.3396	0.6810	0.7475	0.8664
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.15	0.0214	0.9818	0.8745	0.9993
GnegativePseAAC	0.4429	1.46	0.3786	0.6951	0.8376	0.9684
GpositivePseAAC	0.4423	1.02	0.3654	0.7003	0.8893	0.8983
HumanGO	0.2894	1.69	0.1897	0.7897	0.9849	0.9892
HumanPseAAC	0.7331	5.20	0.6385	0.4090	0.9311	0.9384
Image	0.4550	1.28	0.3113	0.7031	0.9059	0.9090
IMDB-ECC-F	0.7761	13.62	0.7269	0.2957	0.9197	0.9290
IMDB-F	0.7783	14.00	0.7313	0.2936	0.9172	0.9271
LLOG-F	0.7705	27.98	0.6612	0.2810	0.5818	0.9801
mediamill	0.3962	53.32	0.3716	0.5227	0.9788	0.9861
medical	0.2143	5.51	0.1429	0.8148	0.5529	0.9976
Music	0.5000	2.35	0.3963	0.6856	0.8709	0.8839
OHSUMED-F	0.4910	8.91	0.4769	0.5272	0.9597	0.9649
PlantGO	0.2551	1.12	0.1616	0.8197	0.9850	0.9886
PlantPseAAC	0.7449	4.27	0.6888	0.3999	0.9182	0.9240
rcv1subset1	0.5783	50.27	0.5904	0.3677	0.9249	0.9856
REUTERS-K500-EX2	0.5750	27.96	0.4536	0.4794	0.7717	0.9872
scene	0.3693	1.35	0.2894	0.7332	0.9558	0.9595
sider_CDK_ECFP4	0.3451	22.92	0.4157	0.7234	0.5903	0.7142
sider_MordredDesc	0.4085	22.89	0.4122	0.7080	0.5773	0.7061
sider_RDKit_desc	0.3873	22.70	0.3959	0.7233	0.5727	0.7023
SLASHDOT-F	0.4829	6.49	0.4123	0.5752	0.7412	0.9720
Stackex_chemistry	0.7399	94.46	0.7371	0.2205	0.9051	0.9858
Stackex_chess	0.7083	128.18	0.7072	0.2372	0.5428	0.9906
Stackex_coffee	0.7826	67.78	0.6938	0.2096	0.2555	0.9847
Stackex_cooking	0.6473	201.53	0.6485	0.2828	0.9183	0.9938
Stackex_cs	0.6104	144.89	0.6597	0.2944	0.8892	0.9919
Stackex_philosophy	0.7035	124.81	0.6793	0.2614	0.7408	0.9896
tmc2007-500	0.3969	6.11	0.3478	0.6411	0.9564	0.9661
tox21_CDK_ECFP4	0.5548	5.80	0.5381	0.5064	0.8916	0.8984
tox21_RDKit_desc	0.5685	5.86	0.5146	0.5043	0.8676	0.8765
VirusGO	0.0476	0.43	0.0794	0.9526	0.8251	0.9925
VirusPseAAC	0.7143	2.14	0.4524	0.5143	0.6999	0.8662
Water-quality	0.4717	9.92	0.5031	0.6105	0.7344	0.7575
Yahoo_Arts	0.5327	9.70	0.4746	0.5082	0.9230	0.9649
Yahoo_Business	0.1194	2.94	0.1590	0.8754	0.8515	0.9926
Yahoo_Computers	0.4129	6.00	0.4178	0.6248	0.8859	0.9818
Yahoo_Education	0.5461	7.97	0.4929	0.5415	0.8848	0.9788
Yahoo_Entertainment	0.4407	3.78	0.4091	0.6387	0.9746	0.9780
Yahoo_Health	0.3290	5.61	0.3342	0.7066	0.8275	0.9874
Yahoo_Recreation	0.4458	5.37	0.3862	0.6270	0.9732	0.9755
Yahoo_Reference	0.4471	4.26	0.3892	0.6432	0.8033	0.9885
Yahoo_Science	0.5645	12.17	0.5147	0.4869	0.9549	0.9821
Yahoo_Social	0.3672	5.93	0.3270	0.6756	0.9127	0.9923
yeast	0.3926	7.74	0.4730	0.6513	0.8561	0.8908
Yelp	0.0947	1.22	0.1498	0.9158	0.9080	0.9228

Table 5: Detailed results for BR(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3041	1.23	0.0702	0.7932	0.8447	0.8406
3s-bbc1000	0.6111	2.11	0.3403	0.5754	0.5092	0.5127
3s-guardian1000	0.7419	2.58	0.1532	0.4602	0.5078	0.5286
3s-reuters1000	0.7333	1.90	0.3333	0.5272	0.5582	0.5298
bibtex	0.4784	21.45	0.0767	0.5069	0.7186	0.7746
birds	0.6154	8.18	0.3858	0.4672	0.6148	0.6951
bookmarks	0.7497	72.28	0.3046	0.2826	0.6948	0.6794
CAL500	0.5490	163.16	0.4355	0.2949	0.4897	0.6162
corel16k001	0.6892	58.43	0.3979	0.3039	0.5660	0.6328
Corel5k	0.6520	128.43	0.5613	0.2898	0.3610	0.6375
delicious	0.5873	658.03	0.2194	0.2509	0.5890	0.7593
emotions	0.3167	2.27	0.1708	0.7381	0.7937	0.7629
enron	0.4561	28.68	0.2613	0.4708	0.5816	0.7584
EukaryoteGO	0.2252	1.00	0.0265	0.8592	0.6035	0.7053
EukaryotePseAAC	0.8867	5.31	0.1361	0.3117	0.6741	0.7303
Eurlex-dc	0.5639	79.92	0.2715	0.4689	0.5386	0.8425
Eurlex-sm	0.4806	44.82	0.3303	0.4634	0.6019	0.8453
foodtruck	0.4390	4.41	0.2934	0.6375	0.5437	0.7313
genbase	0.0000	0.22	0.0000	0.9975	0.5457	0.8675
GnegativeGO	0.0571	0.11	0.0214	0.9702	0.5902	0.8481
GnegativePseAAC	0.2571	0.66	0.1143	0.8353	0.6392	0.8683
GpositivePseAAC	0.2885	0.56	0.0769	0.8205	0.8148	0.8428
HumanGO	0.2058	0.98	0.0545	0.8613	0.6480	0.6542
HumanPseAAC	0.7331	3.78	0.2922	0.4598	0.5866	0.7128
Image	0.2900	0.98	0.1412	0.8008	0.7885	0.7914
IMDB-ECC-F	0.6635	8.55	0.2090	0.4545	0.5292	0.5601
IMDB-F	0.6557	8.73	0.2190	0.4537	0.5213	0.5576
LLOG-F	0.7869	18.21	0.2164	0.3304	0.3203	0.6058
mediamill	0.9917	37.19	0.2452	0.1121	0.6756	0.7400
medical	0.2143	1.20	0.0765	0.8493	0.3687	0.7363
Music	0.3833	2.58	0.1954	0.7194	0.7795	0.7250
OHSUMED-F	0.4716	4.92	0.1189	0.6176	0.7314	0.7587
PlantGO	0.4796	1.08	0.0332	0.7250	0.6076	0.6762
PlantPseAAC	0.6429	2.84	0.2993	0.5381	0.7321	0.7686
rcv1subset1	0.5150	20.67	0.1510	0.4936	0.5409	0.5603
REUTERS-K500-EX2	0.5017	10.77	0.1210	0.5753	0.5177	0.7033
scene	0.3361	0.81	0.0674	0.7891	0.8816	0.8414
sider_CDK_ECFP4	0.3310	23.31	0.3190	0.6975	0.6425	0.7020
sider_MordredDesc	0.5000	23.35	0.3199	0.6408	0.6180	0.6599
sider_RDKit_desc	0.3592	23.15	0.3240	0.6779	0.6104	0.6646
SLASHDOT-F	0.3430	2.26	0.0486	0.7417	0.5345	0.7543
Stackex_chemistry	0.6221	48.63	0.2824	0.3886	0.4966	0.6151
Stackex_chess	0.5536	49.61	0.2391	0.3971	0.3042	0.6003
Stackex_coffee	0.6957	40.52	0.1733	0.3518	0.1484	0.5829
Stackex_cooking	0.5797	76.16	0.3329	0.4008	0.5058	0.6258
Stackex_cs	0.5087	52.23	0.2602	0.4674	0.5608	0.7232
Stackex_philosophy	0.5729	76.27	0.4836	0.3719	0.4069	0.6097
tmc2007-500	0.3332	4.29	0.1240	0.7100	0.8295	0.8461
tox21_CDK_ECFP4	0.5479	4.72	0.1539	0.5584	0.6105	0.6706
tox21_RDKit_desc	0.6610	5.71	0.3539	0.4573	0.6104	0.6490
VirusGO	0.0952	0.52	0.0635	0.9153	0.6839	0.8903
VirusPseAAC	0.2857	1.00	0.2976	0.7897	0.6744	0.8269
Water-quality	0.4057	9.99	0.3220	0.6176	0.6376	0.6661
Yahoo_Arts	0.5407	8.55	0.3170	0.5271	0.5543	0.6065
Yahoo_Business	0.1426	4.51	0.1479	0.8378	0.5732	0.8215
Yahoo_Computers	0.4602	9.78	0.4950	0.5581	0.5535	0.7282
Yahoo_Education	0.6309	9.04	0.5520	0.4732	0.4979	0.6281
Yahoo_Entertainment	0.6544	6.58	0.4575	0.4811	0.5867	0.6743
Yahoo_Health	0.3931	6.52	0.3019	0.6738	0.5357	0.7667
Yahoo_Recreation	0.5503	5.89	0.3906	0.5636	0.6351	0.7037
Yahoo_Reference	0.5654	5.57	0.3094	0.5716	0.4909	0.7544
Yahoo_Science	0.6656	12.95	0.5175	0.4202	0.5528	0.5773
Yahoo_Social	0.5355	8.88	0.4029	0.5505	0.5151	0.7671
yeast	0.4463	7.90	0.3057	0.6407	0.6278	0.7092
Yelp	0.2373	1.57	0.1519	0.8273	0.7090	0.7536

Table 6: Detailed results for BR(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3119	1.23	0.0598	0.7931	0.9575	0.9500
3s-bbc1000	0.7222	2.50	0.6736	0.4884	0.6376	0.6052
3s-guardian1000	0.6452	2.39	0.3226	0.5325	0.5224	0.5749
3s-reuters1000	0.8000	1.87	0.6833	0.4897	0.6758	0.6400
bibtex	0.4311	33.55	0.1505	0.5146	0.8731	0.8862
birds	0.3333	4.77	0.1265	0.6799	0.7826	0.8654
bookmarks	0.6021	47.00	0.1764	0.4233	0.8071	0.8216
CAL500	0.2745	165.12	0.3770	0.4231	0.4910	0.6860
corel16k001	0.7611	91.15	0.3594	0.1855	0.6019	0.6375
Corel5k	0.9880	293.14	0.1701	0.0889	0.4092	0.5180
delicious	0.4711	864.56	0.3989	0.1686	0.6885	0.6276
emotions	0.2500	1.80	0.1167	0.8090	0.8459	0.8603
enron	0.2807	26.11	0.2050	0.5915	0.5694	0.7927
EukaryoteGO	0.2883	0.90	0.0167	0.8277	0.9830	0.9707
EukaryotePseAAC	0.5843	5.03	0.1952	0.5439	0.7168	0.7939
Eurlex-dc	0.8334	38.55	0.0416	0.2551	0.7065	0.9184
Eurlex-sm	0.7292	30.64	0.1219	0.3861	0.7873	0.9198
foodtruck	0.2439	3.85	0.2946	0.7550	0.5085	0.7507
genbase	0.0000	0.22	0.0000	0.9975	0.6667	0.9997
GnegativeGO	0.1071	0.25	0.0214	0.9345	0.8617	0.9829
GnegativePseAAC	0.3857	0.87	0.2554	0.7662	0.7380	0.9142
GpositivePseAAC	0.2115	0.31	0.0192	0.8782	0.9309	0.9361
HumanGO	0.2508	0.88	0.0350	0.8446	0.9528	0.9479
HumanPseAAC	0.5659	3.86	0.2241	0.5624	0.6424	0.7420
Image	0.4400	0.99	0.1025	0.7390	0.8283	0.8035
IMDB-ECC-F	0.8656	14.01	0.4577	0.2403	0.5769	0.5967
IMDB-F	0.8881	16.64	0.5214	0.2050	0.5690	0.5369
LLOG-F	0.9918	30.96	0.2760	0.1928	0.4348	0.6554
mediamill	0.1599	44.46	0.1420	0.6237	0.6968	0.8203
medical	0.1633	2.63	0.0204	0.8543	0.5337	0.9619
Music	0.1500	1.95	0.1810	0.8304	0.8512	0.8653
OHSUMED-F	0.3934	5.53	0.1343	0.6463	0.8272	0.8449
PlantGO	0.2041	0.56	0.0204	0.8783	0.9486	0.9559
PlantPseAAC	0.6735	3.42	0.1930	0.4787	0.7320	0.7301
rcv1subset1	0.4100	20.22	0.0956	0.5766	0.8221	0.9109
REUTERS-K500-EX2	0.9550	20.27	0.2936	0.1831	0.6782	0.8344
scene	0.2573	0.53	0.0788	0.8457	0.9277	0.9184
sider_CDK_ECFP4	0.3310	20.64	0.1625	0.7778	0.5066	0.7298
sider_MordredDesc	0.4155	20.44	0.1872	0.7448	0.5055	0.7263
sider_RDKit_desc	0.3310	19.83	0.1429	0.7699	0.4721	0.7322
SLASHDOT-F	1.0000	5.92	0.2004	0.2973	0.6558	0.7565
Stackex_chemistry	0.6494	80.49	0.2207	0.2895	0.6902	0.6876
Stackex_chess	0.9702	109.25	0.2551	0.2098	0.4205	0.7130
Stackex_coffee	0.8261	43.30	0.1860	0.1948	0.1658	0.7591
Stackex_cooking	0.4628	134.37	0.1575	0.4171	0.7083	0.8019
Stackex_cs	0.4513	102.60	0.1778	0.4196	0.7110	0.8051
Stackex_philosophy	0.5377	108.08	0.2668	0.3883	0.5548	0.7270
tmc2007-500	0.3948	4.02	0.0963	0.7173	0.8994	0.9108
tox21_CDK_ECFP4	0.5411	5.23	0.1325	0.5392	0.6540	0.6972
tox21_RDKit_desc	0.9178	5.74	0.2791	0.3883	0.6558	0.6462
VirusGO	0.0476	0.48	0.0476	0.9524	0.7655	0.9568
VirusPseAAC	0.4286	1.24	0.0952	0.7040	0.6351	0.8295
Water-quality	0.2170	9.07	0.2361	0.7133	0.7145	0.7446
Yahoo_Arts	0.4299	6.69	0.1856	0.6274	0.7575	0.7960
Yahoo_Business	0.1292	3.60	0.1333	0.8640	0.7371	0.9171
Yahoo_Computers	0.3976	7.83	0.2757	0.6555	0.7354	0.8030
Yahoo_Education	0.4381	7.82	0.1767	0.6180	0.7213	0.7971
Yahoo_Entertainment	0.4281	4.09	0.1525	0.6774	0.7976	0.8355
Yahoo_Health	0.5603	6.94	0.1647	0.6033	0.6812	0.8257
Yahoo_Recreation	0.4435	4.23	0.1791	0.6605	0.8286	0.8273
Yahoo_Reference	0.3960	6.62	0.1180	0.6711	0.6503	0.8064
Yahoo_Science	0.3997	8.73	0.1627	0.6426	0.7781	0.8004
Yahoo_Social	0.3845	7.08	0.1261	0.6923	0.7398	0.8408
yeast	0.2107	7.35	0.1960	0.7444	0.6620	0.7963
Yelp	0.1615	1.40	0.1211	0.8765	0.8115	0.8462

Table 7: Detailed results for BR(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3580	3.02	0.2870	0.7149	0.9784	0.9789
3s-bbc1000	0.5278	1.47	0.4514	0.6662	0.7830	0.7845
3s-guardian1000	0.6774	2.06	0.3306	0.5384	0.6479	0.6847
3s-reuters1000	0.6667	1.90	0.5417	0.5369	0.7090	0.7124
bibtex	0.3838	45.87	0.2848	0.5304	0.9604	0.9683
birds	0.4615	5.46	0.1799	0.5992	0.7670	0.8691
bookmarks	0.9176	60.19	0.2042	0.1689	0.9242	0.8558
CAL500	0.4314	149.78	0.5739	0.3559	0.6063	0.7566
corel16k001	0.8134	103.13	0.7420	0.1682	0.9566	0.9583
Corel5k	0.7380	143.27	0.6874	0.2128	0.6526	0.9726
delicious	0.4916	879.00	0.7611	0.1875	0.9725	0.9780
emotions	0.3667	2.17	0.2222	0.7317	0.8536	0.8333
enron	0.3450	19.89	0.3460	0.5404	0.7448	0.9239
EukaryoteGO	0.2098	0.84	0.0367	0.8704	0.9933	0.9936
EukaryotePseAAC	0.9498	10.63	0.9217	0.1848	0.9560	0.9547
Eurlex-dc	0.5168	10.36	0.0350	0.6244	0.7396	0.9859
Eurlex-sm	0.2434	35.42	0.3792	0.6402	0.8262	0.9951
foodtruck	0.2439	3.02	0.3501	0.7587	0.7156	0.8334
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.09	0.0143	0.9863	0.8737	0.9989
GnegativePseAAC	0.3071	1.36	0.2625	0.7637	0.8025	0.9412
GpositivePseAAC	0.4423	0.73	0.1346	0.7388	0.8059	0.8296
HumanGO	0.2347	0.79	0.0506	0.8550	0.9786	0.9795
HumanPseAAC	0.9100	6.97	0.8794	0.2617	0.9178	0.9098
Image	0.6550	1.86	0.5783	0.5666	0.8894	0.8880
IMDB-ECC-F	0.8923	15.19	0.9085	0.2020	0.9687	0.9696
IMDB-F	0.9079	15.76	0.9317	0.1894	0.9738	0.9745
LLOG-F	0.6721	22.26	0.4795	0.3655	0.5354	0.9232
mediamill	0.3209	67.35	0.5799	0.4304	0.9928	0.9905
medical	0.1531	1.95	0.0587	0.8883	0.5502	0.9959
Music	0.3167	2.58	0.2148	0.7236	0.8384	0.8018
OHSUMED-F	0.3833	7.51	0.3698	0.6110	0.9503	0.9569
PlantGO	0.2551	1.06	0.0986	0.8291	0.9636	0.9719
PlantPseAAC	0.8367	4.20	0.6582	0.3594	0.8171	0.8246
rcv1subset1	0.5800	46.91	0.5629	0.3473	0.9079	0.9680
REUTERS-K500-EX2	0.6267	34.92	0.5781	0.4028	0.7753	0.9880
scene	0.4481	1.70	0.3672	0.6658	0.8992	0.8877
sider_CDK_ECFP4	0.3239	19.96	0.2128	0.7511	0.5164	0.7326
sider_MordredDesc	0.4155	20.02	0.3046	0.7369	0.5525	0.7383
sider_RDKit_desc	0.5070	21.68	0.3658	0.7027	0.5719	0.7322
SLASHDOT-F	0.4011	5.24	0.3188	0.6458	0.7412	0.9703
Stackex_chemistry	0.8032	105.34	0.8253	0.1507	0.9038	0.9822
Stackex_chess	0.6429	112.31	0.5889	0.2803	0.5349	0.9782
Stackex_coffee	0.5652	59.22	0.4161	0.3339	0.2453	0.9471
Stackex_cooking	0.5527	192.28	0.6185	0.3136	0.9135	0.9888
Stackex_cs	0.6991	149.21	0.7589	0.2229	0.8859	0.9867
Stackex_philosophy	0.6658	122.02	0.6656	0.2554	0.7339	0.9806
tmc2007-500	0.3899	6.28	0.3239	0.6547	0.9699	0.9669
tox21_CDK_ECFP4	0.5719	6.13	0.5348	0.4890	0.8403	0.8472
tox21_RDKit_desc	0.8219	7.11	0.8254	0.3381	0.9022	0.8981
VirusGO	0.0476	0.38	0.0476	0.9563	0.8111	0.9810
VirusPseAAC	0.4286	0.86	0.0952	0.7516	0.6543	0.8653
Water-quality	0.3113	10.08	0.3914	0.6575	0.8028	0.7400
Yahoo_Arts	0.5140	11.15	0.5733	0.4780	0.9317	0.9707
Yahoo_Business	0.1194	3.09	0.1795	0.8708	0.8532	0.9910
Yahoo_Computers	0.4586	6.65	0.5304	0.5734	0.8936	0.9801
Yahoo_Education	0.6367	9.50	0.6701	0.4566	0.8969	0.9871
Yahoo_Entertainment	0.5090	4.21	0.5497	0.5867	0.9891	0.9901
Yahoo_Health	0.3974	6.80	0.3536	0.6491	0.8300	0.9824
Yahoo_Recreation	0.4295	6.17	0.4510	0.6157	0.9875	0.9883
Yahoo_Reference	0.5106	4.98	0.5109	0.5833	0.8042	0.9870
Yahoo_Science	0.5505	12.93	0.5634	0.4740	0.9510	0.9776
Yahoo_Social	0.5891	9.26	0.3605	0.4794	0.8234	0.8547
yeast	0.2562	6.79	0.4001	0.7108	0.8802	0.8949
Yelp	0.2473	1.56	0.2883	0.8220	0.9018	0.9078

Table 8: Detailed results for BR+US(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7098	2.84	0.2221	0.5085	0.9498	0.9510
3s-bbc1000	0.8611	2.78	0.6181	0.4095	0.6747	0.6593
3s-guardian1000	0.7097	2.94	0.6129	0.4634	0.5947	0.6106
3s-reuters1000	0.8667	2.80	0.6000	0.3858	0.6280	0.6309
bibtex	0.9459	36.87	0.3067	0.1783	0.9479	0.9566
birds	0.6154	5.64	0.3427	0.5514	0.8567	0.9425
bookmarks	0.8935	61.56	0.3663	0.1740	0.9016	0.9077
CAL500	0.5490	149.10	0.6547	0.2799	0.6821	0.8003
corel16k001	0.9884	88.21	0.5211	0.0638	0.8000	0.8140
Corel5k	0.8740	140.58	0.5919	0.1510	0.5904	0.9142
delicious	0.9832	788.23	0.4411	0.0445	0.8285	0.8175
emotions	0.4833	2.42	0.4458	0.6596	0.7812	0.7904
enron	0.8713	21.53	0.3830	0.3296	0.7303	0.8958
EukaryoteGO	0.2239	0.85	0.0431	0.8605	0.9973	0.9969
EukaryotePseAAC	0.9086	8.01	0.4305	0.2541	0.7914	0.8210
Eurlex-dc	0.8443	25.77	0.1754	0.2963	0.7475	0.9916
Eurlex-sm	0.6475	18.86	0.1362	0.4130	0.8144	0.9886
foodtruck	0.6098	5.32	0.2641	0.4887	0.6741	0.6932
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0429	0.12	0.0143	0.9744	0.8737	0.9993
GnegativePseAAC	0.4929	1.32	0.3232	0.6756	0.7551	0.9179
GpositivePseAAC	0.5962	1.10	0.4808	0.6282	0.8160	0.8286
HumanGO	0.2958	1.05	0.0689	0.8182	0.9886	0.9900
HumanPseAAC	0.8875	5.38	0.5602	0.3055	0.7589	0.7712
Image	0.5050	1.32	0.3004	0.6823	0.8458	0.8464
IMDB-ECC-F	0.9207	14.66	0.6314	0.1979	0.6874	0.6714
IMDB-F	0.9228	15.21	0.6429	0.1921	0.6697	0.6572
LLOG-F	0.9426	19.70	0.4940	0.2049	0.5364	0.9203
mediamill	0.9501	57.70	0.4372	0.1379	0.8739	0.8793
medical	0.2245	3.63	0.0791	0.8120	0.5476	0.9953
Music	0.6000	2.43	0.4273	0.6455	0.8168	0.8200
OHSUMED-F	0.7437	7.68	0.3404	0.4029	0.8727	0.8785
PlantGO	0.2551	0.56	0.0867	0.8522	0.9916	0.9907
PlantPseAAC	0.8367	3.76	0.5306	0.3833	0.7784	0.7887
rcv1subset1	0.9233	30.51	0.3721	0.2221	0.8841	0.9480
REUTERS-K500-EX2	0.9233	14.39	0.1730	0.2495	0.7399	0.9620
scene	0.3900	0.96	0.2220	0.7546	0.9436	0.9446
sider_CDK_ECFP4	0.4718	24.37	0.5931	0.6160	0.6675	0.6429
sider_MordredDesc	0.4155	24.80	0.6300	0.6108	0.6386	0.6271
sider_RDKit_desc	0.4296	24.39	0.6141	0.6130	0.6326	0.6316
SLASHDOT-F	0.7177	5.23	0.3867	0.4763	0.7150	0.9479
Stackex_chemistry	0.9267	61.38	0.3751	0.1372	0.8352	0.9174
Stackex_chess	0.8631	84.11	0.3862	0.2206	0.5249	0.9646
Stackex_coffee	0.7826	64.87	0.6350	0.2582	0.2544	0.9839
Stackex_cooking	0.9411	110.55	0.3115	0.1209	0.8607	0.9513
Stackex_cs	0.8528	78.40	0.3033	0.1848	0.8438	0.9496
Stackex_philosophy	0.9422	82.32	0.3861	0.1545	0.7009	0.9478
tmc2007-500	0.5671	5.89	0.2827	0.5388	0.9303	0.9219
tox21_CDK_ECFP4	0.7192	6.04	0.4550	0.4393	0.7161	0.7185
tox21_RDKit_desc	0.7534	5.95	0.4773	0.4241	0.7025	0.7076
VirusGO	0.0476	0.33	0.0476	0.9643	0.8261	0.9905
VirusPseAAC	0.7619	2.14	0.4048	0.4845	0.7110	0.8438
Water-quality	0.4717	9.93	0.5247	0.5862	0.6814	0.6851
Yahoo_Arts	0.8344	9.84	0.4135	0.3015	0.8248	0.8541
Yahoo_Business	0.3200	4.98	0.1172	0.6597	0.7660	0.9071
Yahoo_Computers	0.6080	7.27	0.2849	0.4744	0.7804	0.8819
Yahoo_Education	0.7390	7.81	0.4717	0.4187	0.8100	0.9081
Yahoo_Entertainment	0.7180	4.38	0.5213	0.4803	0.9025	0.9055
Yahoo_Health	0.4897	5.70	0.3092	0.5821	0.7819	0.9419
Yahoo_Recreation	0.7046	5.92	0.3562	0.4445	0.8702	0.8805
Yahoo_Reference	0.6389	4.77	0.3891	0.4977	0.7462	0.9349
Yahoo_Science	0.7885	11.05	0.4079	0.3509	0.8769	0.9008
Yahoo_Social	0.7921	7.44	0.2907	0.3919	0.8362	0.9255
yeast	0.5207	9.84	0.5246	0.5351	0.6858	0.6872
Yelp	0.1446	1.33	0.1383	0.8828	0.8704	0.8730

Table 9: Detailed results for BR+US(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3202	1.50	0.0815	0.7778	0.8391	0.8314
3s-bbc1000	0.6111	2.36	0.4653	0.5451	0.5497	0.5621
3s-guardian1000	0.7419	2.71	0.2097	0.4731	0.5361	0.5738
3s-reuters1000	0.8000	2.47	0.5000	0.4311	0.6138	0.5743
bibtex	0.4838	33.81	0.1444	0.5031	0.8089	0.8001
birds	0.6923	7.74	0.3393	0.4438	0.6477	0.7156
bookmarks	0.7518	79.74	0.3661	0.2788	0.6990	0.6747
CAL500	0.8235	164.49	0.4077	0.2671	0.5023	0.6159
corel16k001	0.8134	77.99	0.2908	0.2285	0.6960	0.7085
Corel5k	0.7180	213.96	0.3335	0.2668	0.3982	0.7558
delicious	0.6725	730.49	0.2348	0.1862	0.6314	0.6397
emotions	0.4167	2.05	0.1819	0.7269	0.7979	0.7615
enron	0.4503	29.87	0.3058	0.4442	0.5752	0.7325
EukaryoteGO	0.2561	2.43	0.0841	0.8065	0.7947	0.9048
EukaryotePseAAC	0.8700	6.27	0.1607	0.3087	0.7059	0.6969
Eurlex-dc	0.5654	77.68	0.3201	0.4744	0.5610	0.8601
Eurlex-sm	0.4796	57.89	0.2903	0.4536	0.6174	0.8220
foodtruck	0.7561	5.61	0.2257	0.4309	0.5694	0.6405
genbase	0.1045	1.85	0.0448	0.8837	0.5730	0.9472
GnegativeGO	0.0786	0.34	0.0232	0.9448	0.6805	0.9313
GnegativePseAAC	0.2286	0.73	0.0696	0.8459	0.6389	0.8580
GpositivePseAAC	0.2692	0.50	0.0577	0.8317	0.8272	0.8481
HumanGO	0.2637	2.01	0.1588	0.7955	0.8048	0.8584
HumanPseAAC	0.7363	4.34	0.3644	0.4459	0.5989	0.6939
Image	0.3300	1.01	0.1212	0.7813	0.7882	0.7974
IMDB-ECC-F	0.8470	12.89	0.3334	0.2759	0.6198	0.6080
IMDB-F	0.8573	13.23	0.3382	0.2671	0.6048	0.6059
LLOG-F	0.7705	28.30	0.3019	0.3029	0.3285	0.6714
mediamill	0.9879	45.82	0.3294	0.0808	0.7057	0.6432
medical	0.3163	4.82	0.0751	0.7145	0.3928	0.8632
Music	0.3500	2.32	0.1829	0.7439	0.7996	0.7584
OHSUMED-F	0.5233	6.41	0.1407	0.5583	0.7592	0.7344
PlantGO	0.4694	2.41	0.3223	0.6511	0.6986	0.7995
PlantPseAAC	0.5612	2.77	0.2823	0.5906	0.7437	0.7659
rcv1subset1	0.5883	40.56	0.2958	0.3973	0.7918	0.8268
REUTERS-K500-EX2	0.4783	15.08	0.1117	0.6027	0.5965	0.8708
scene	0.3071	0.70	0.0539	0.8126	0.8841	0.8570
sider_CDK_ECFP4	0.5211	24.22	0.4812	0.5816	0.6623	0.6070
sider_MordredDesc	0.5845	23.21	0.3154	0.6175	0.6227	0.6245
sider_RDKit_desc	0.4507	23.80	0.4006	0.6266	0.5999	0.6032
SLASHDOT-F	0.3562	3.51	0.1308	0.7212	0.5991	0.8421
Stackex_chemistry	0.6580	63.51	0.1491	0.3506	0.5888	0.7741
Stackex_chess	0.5952	107.40	0.2493	0.3100	0.3169	0.6927
Stackex_coffee	0.8261	62.43	0.2932	0.2012	0.1489	0.5860
Stackex_cooking	0.6029	140.42	0.1987	0.3716	0.5922	0.7869
Stackex_cs	0.5476	86.98	0.1631	0.4347	0.6378	0.8294
Stackex_philosophy	0.6131	107.24	0.3158	0.3546	0.4395	0.7219
tmc2007-500	0.3780	5.66	0.1490	0.6516	0.8474	0.8421
tox21_CDK_ECFP4	0.5719	5.43	0.2325	0.5180	0.6318	0.6718
tox21_RDKit_desc	0.7192	6.03	0.3264	0.4100	0.6089	0.6411
VirusGO	0.2381	0.76	0.1706	0.8320	0.6927	0.8879
VirusPseAAC	0.1905	0.76	0.1905	0.8643	0.7199	0.8949
Water-quality	0.4245	9.82	0.3593	0.5899	0.6570	0.6473
Yahoo_Arts	0.5621	11.32	0.3031	0.4857	0.6314	0.6318
Yahoo_Business	0.1836	7.96	0.1576	0.7705	0.6092	0.7971
Yahoo_Computers	0.4618	12.58	0.5102	0.5296	0.6165	0.6993
Yahoo_Education	0.6517	14.47	0.5840	0.4316	0.5761	0.6720
Yahoo_Entertainment	0.6685	8.36	0.5422	0.4426	0.6819	0.6567
Yahoo_Health	0.4050	9.56	0.3258	0.6303	0.6110	0.7809
Yahoo_Recreation	0.5799	7.40	0.4350	0.5165	0.7079	0.7125
Yahoo_Reference	0.5654	7.39	0.3538	0.5377	0.6321	0.8338
Yahoo_Science	0.7869	18.06	0.6198	0.3066	0.7086	0.6908
Yahoo_Social	0.5350	8.88	0.4230	0.5700	0.4975	0.7791
yeast	0.6033	9.40	0.3319	0.5322	0.6563	0.6117
Yelp	0.3121	1.80	0.1211	0.7737	0.7309	0.7202

Table 10: Detailed results for BR+US(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3860	1.30	0.0623	0.7464	0.9464	0.9453
3s-bbc1000	0.6667	2.17	0.4444	0.5623	0.6740	0.6035
3s-guardian1000	0.6774	2.35	0.2823	0.5137	0.5458	0.5786
3s-reuters1000	0.7667	2.30	0.6500	0.4592	0.6151	0.5370
bibtex	0.6054	51.96	0.2698	0.3940	0.8902	0.8093
birds	0.5641	6.26	0.1248	0.5129	0.7326	0.7756
bookmarks	0.7298	55.86	0.1661	0.3231	0.8513	0.8162
CAL500	0.7843	158.08	0.4807	0.3495	0.4976	0.7288
corel16k001	0.8272	80.08	0.3202	0.1869	0.7406	0.7103
Corel5k	0.7420	160.75	0.5348	0.2192	0.4869	0.8140
delicious	0.7595	817.39	0.2453	0.1494	0.7436	0.7478
emotions	0.2333	1.65	0.1722	0.8218	0.8173	0.8583
enron	0.2749	22.11	0.1637	0.5795	0.6368	0.8109
EukaryoteGO	0.1982	0.99	0.0465	0.8730	0.9848	0.9709
EukaryotePseAAC	0.6937	5.01	0.0958	0.4788	0.7279	0.7915
Eurlex-dc	0.5189	54.51	0.2013	0.4935	0.6824	0.8824
Eurlex-sm	0.3142	30.81	0.0880	0.6209	0.7533	0.9180
foodtruck	0.6098	3.98	0.2524	0.5339	0.6199	0.7695
genbase	0.0000	0.48	0.0000	0.9933	0.6667	0.9980
GnegativeGO	0.0357	0.14	0.0089	0.9776	0.8697	0.9959
GnegativePseAAC	0.3000	0.91	0.1232	0.7930	0.7493	0.8990
GpositivePseAAC	0.2500	0.42	0.0962	0.8494	0.9329	0.9137
HumanGO	0.2347	1.11	0.0702	0.8432	0.9653	0.9414
HumanPseAAC	0.6463	3.68	0.1396	0.5176	0.7306	0.7499
Image	0.3400	0.83	0.0983	0.7978	0.8518	0.8443
IMDB-ECC-F	0.8822	12.93	0.3334	0.2489	0.6336	0.6388
IMDB-F	0.8591	12.38	0.3502	0.2773	0.6436	0.6636
LLOG-F	0.7869	17.52	0.1851	0.2739	0.4334	0.7960
mediamill	0.5713	40.66	0.1675	0.4605	0.8380	0.8321
medical	0.1327	3.10	0.0510	0.8543	0.5365	0.9515
Music	0.1667	1.87	0.1477	0.8374	0.8482	0.8600
OHSUMED-F	0.4688	6.54	0.1667	0.5804	0.8056	0.8025
PlantGO	0.2449	0.89	0.1071	0.8286	0.9682	0.9193
PlantPseAAC	0.6429	3.06	0.1896	0.5153	0.7669	0.7633
rcv1subset1	0.4817	25.76	0.1956	0.5048	0.8425	0.8844
REUTERS-K500-EX2	0.6200	15.54	0.0827	0.4464	0.7135	0.8765
scene	0.1784	0.42	0.0809	0.8907	0.9380	0.9460
sider_CDK_ECFP4	0.3169	21.75	0.2632	0.7068	0.6208	0.7128
sider_MordredDesc	0.3803	23.25	0.3191	0.6866	0.5646	0.6477
sider_RDKit_desc	0.3380	22.82	0.2636	0.6793	0.6102	0.6734
SLASHDOT-F	0.4327	3.26	0.1309	0.6601	0.6672	0.8774
Stackex_chemistry	0.7931	55.41	0.2591	0.2296	0.7155	0.7894
Stackex_chess	0.6964	63.15	0.1127	0.2661	0.4269	0.8414
Stackex_coffee	0.7826	33.83	0.1630	0.2253	0.1868	0.8149
Stackex_cooking	0.7952	122.51	0.2168	0.2003	0.7337	0.8132
Stackex_cs	0.6872	81.98	0.1535	0.2720	0.7499	0.8389
Stackex_philosophy	0.8141	64.18	0.1630	0.2263	0.5655	0.8265
tmc2007-500	0.3063	3.84	0.0705	0.7346	0.9197	0.9122
tox21_CDK_ECFP4	0.6541	6.10	0.2826	0.4827	0.6421	0.6330
tox21_RDKit_desc	0.5274	4.94	0.1423	0.5599	0.7082	0.7391
VirusGO	0.0476	0.48	0.0476	0.9524	0.7506	0.9481
VirusPseAAC	0.5238	0.81	0.0000	0.7198	0.6270	0.8852
Water-quality	0.3302	9.55	0.3306	0.6536	0.6875	0.7066
Yahoo_Arts	0.6235	8.59	0.3410	0.4709	0.6666	0.7296
Yahoo_Business	0.4046	7.44	0.0698	0.6294	0.6753	0.8061
Yahoo_Computers	0.4715	7.86	0.1721	0.5888	0.6742	0.7868
Yahoo_Education	0.6027	7.65	0.3046	0.5090	0.6353	0.8023
Yahoo_Entertainment	0.4705	4.74	0.2652	0.6110	0.7362	0.8083
Yahoo_Health	0.3757	8.23	0.2333	0.6239	0.6358	0.8015
Yahoo_Recreation	0.5433	5.92	0.2414	0.5470	0.7528	0.7667
Yahoo_Reference	0.5405	6.21	0.1750	0.5513	0.5900	0.8175
Yahoo_Science	0.6190	10.13	0.1070	0.4576	0.6957	0.7777
Yahoo_Social	0.4026	8.32	0.1214	0.6391	0.6550	0.8041
yeast	0.4050	8.69	0.2665	0.6206	0.6883	0.6959
Yelp	0.2562	1.56	0.0968	0.8212	0.8175	0.8137

Table 11: Detailed results for BR+US(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5093	2.16	0.1462	0.6563	0.9632	0.9301
3s-bbc1000	0.8056	2.33	0.5000	0.4659	0.5891	0.5810
3s-guardian1000	0.8387	2.45	0.3710	0.4253	0.6131	0.5905
3s-reuters1000	0.8667	2.53	0.6333	0.4011	0.5787	0.5393
bibtex	0.8500	29.92	0.3187	0.2913	0.9055	0.9126
birds	0.4359	5.18	0.1766	0.6161	0.7498	0.8550
bookmarks	0.9176	60.19	0.2042	0.1689	0.9242	0.8558
CAL500	0.7059	150.37	0.5084	0.2675	0.5240	0.6969
corel16k001	0.9775	75.35	0.3090	0.0713	0.8078	0.7334
Corel5k	0.9280	142.14	0.4518	0.1055	0.5451	0.8548
delicious	0.9913	770.54	0.3654	0.0507	0.8555	0.8007
emotions	0.4500	2.08	0.2569	0.7202	0.7874	0.7780
enron	0.5029	20.27	0.2205	0.4880	0.6724	0.8419
EukaryoteGO	0.1853	0.47	0.0058	0.8940	0.9965	0.9970
EukaryotePseAAC	0.8764	6.39	0.1826	0.2949	0.6602	0.7315
Eurlex-dc	0.5168	10.36	0.0350	0.6244	0.7396	0.9859
Eurlex-sm	0.3576	13.10	0.0721	0.6755	0.7966	0.9739
foodtruck	0.7073	4.41	0.2051	0.4920	0.6640	0.7349
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.10	0.0143	0.9857	0.8697	0.9981
GnegativePseAAC	0.3786	1.06	0.0589	0.7512	0.7153	0.8637
GpositivePseAAC	0.4038	0.65	0.0385	0.7596	0.8047	0.8277
HumanGO	0.2830	0.71	0.0381	0.8405	0.9861	0.9885
HumanPseAAC	0.8617	4.88	0.3423	0.3447	0.6220	0.6864
Image	0.4700	1.28	0.2700	0.6877	0.7562	0.7270
IMDB-ECC-F	0.7908	11.54	0.2463	0.3161	0.8398	0.7469
IMDB-F	0.8448	12.19	0.2690	0.2749	0.8431	0.7418
LLOG-F	0.8361	17.45	0.3231	0.2773	0.4572	0.8449
mediamill	0.9451	57.05	0.2834	0.1404	0.8761	0.7836
medical	0.1735	1.48	0.0306	0.8816	0.5474	0.9933
Music	0.3000	2.12	0.1597	0.7760	0.7892	0.7967
OHSUMED-F	0.7595	7.28	0.2179	0.3876	0.9221	0.8234
PlantGO	0.2143	0.49	0.0510	0.8780	0.9742	0.9832
PlantPseAAC	0.8776	3.88	0.4056	0.3601	0.6609	0.6903
rcv1subset1	0.7183	21.18	0.2015	0.3835	0.8462	0.9043
REUTERS-K500-EX2	0.8050	12.27	0.1496	0.3587	0.7319	0.9375
scene	0.3942	0.75	0.1131	0.7689	0.8796	0.8663
sider_CDK_ECFP4	0.5141	24.60	0.4679	0.5741	0.7206	0.5457
sider_MordredDesc	0.4507	24.54	0.5855	0.5715	0.5669	0.5042
sider_RDKit_desc	0.6479	24.38	0.5205	0.5675	0.5403	0.5098
SLASHDOT-F	0.5515	4.83	0.3072	0.5607	0.7091	0.8864
Stackex_chemistry	0.8405	49.13	0.1989	0.2160	0.7917	0.8749
Stackex_chess	0.7321	73.80	0.2740	0.2774	0.4845	0.9079
Stackex_coffee	0.6522	57.57	0.3662	0.2926	0.2406	0.9330
Stackex_cooking	0.8290	108.36	0.2183	0.2194	0.7974	0.8954
Stackex_cs	0.8788	71.30	0.2734	0.2198	0.7962	0.9035
Stackex_philosophy	0.7889	87.69	0.3133	0.2519	0.6300	0.8630
tmc2007-500	0.4406	5.49	0.2058	0.6185	0.9500	0.9281
tox21_CDK_ECFP4	0.6336	5.40	0.1430	0.4782	0.7555	0.6811
tox21_RDKit_desc	0.6678	5.44	0.1053	0.4337	0.6323	0.6374
VirusGO	0.0476	0.33	0.0476	0.9643	0.8142	0.9853
VirusPseAAC	0.4762	1.14	0.0714	0.7040	0.6444	0.8333
Water-quality	0.4340	9.81	0.2912	0.5969	0.6150	0.6316
Yahoo_Arts	0.8678	11.72	0.3750	0.2679	0.8458	0.7427
Yahoo_Business	0.1604	4.50	0.1272	0.7636	0.7755	0.9049
Yahoo_Computers	0.6289	8.26	0.4232	0.4596	0.8133	0.8768
Yahoo_Education	0.7747	12.84	0.5745	0.3051	0.8118	0.8123
Yahoo_Entertainment	0.6426	5.19	0.6092	0.4818	0.9147	0.8531
Yahoo_Health	0.5320	6.94	0.2166	0.5451	0.7638	0.9002
Yahoo_Recreation	0.5838	6.49	0.3453	0.4998	0.9351	0.8679
Yahoo_Reference	0.6301	5.49	0.3817	0.4935	0.7356	0.8885
Yahoo_Science	0.7434	13.31	0.3898	0.3579	0.8559	0.8214
Yahoo_Social	0.5891	9.26	0.3605	0.4794	0.8234	0.8547
yeast	0.7438	10.91	0.3675	0.4098	0.7217	0.5242
Yelp	0.2702	1.55	0.2910	0.8129	0.8875	0.8847

Table 12: Detailed results for DBR(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9228	8.93	0.7883	0.2132	0.9171	0.9004
3s-bbc1000	0.7500	3.22	0.8889	0.4134	0.9940	0.9942
3s-guardian1000	0.5161	2.45	0.6774	0.5785	1.0000	1.0000
3s-reuters1000	0.8000	2.57	0.8000	0.4283	0.9954	0.9937
bibtex	0.9865	80.61	0.5764	0.0720	0.8835	0.8172
birds	0.4872	6.92	0.5103	0.5331	0.8593	0.9573
bookmarks	0.9919	122.47	0.7257	0.0343	0.5412	0.5431
CAL500	0.5098	149.37	0.6843	0.3344	0.7778	0.9046
corel16k001	0.9964	115.72	0.7510	0.0427	0.9544	0.7826
Corel5k	0.9660	226.06	0.6770	0.0522	0.6502	0.7002
delicious	0.9975	936.21	0.6588	0.0227	0.5172	0.4926
emotions	0.3667	2.18	0.4333	0.7325	0.9184	0.9203
enron	0.7895	30.00	0.4471	0.2657	0.7872	0.8488
EukaryoteGO	0.5405	6.39	0.4833	0.5167	0.9627	0.9657
EukaryotePseAAC	0.7439	6.30	0.5337	0.4138	0.9880	0.9481
Eurlex-dc	0.9798	98.03	0.5126	0.0662	0.7212	0.9164
Eurlex-sm	0.7602	59.72	0.5506	0.2282	0.7731	0.9137
foodtruck	0.3415	4.98	0.3486	0.6364	0.5296	0.5780
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.1286	0.36	0.1179	0.9157	0.8727	0.9957
GnegativePseAAC	0.5786	1.92	0.5607	0.5929	0.8512	0.9723
GpositivePseAAC	0.6538	1.48	0.6346	0.5561	0.9844	0.9749
HumanGO	0.7910	4.42	0.5414	0.4260	0.9351	0.9335
HumanPseAAC	0.8039	7.35	0.7997	0.2898	0.9535	0.9230
Image	0.4550	1.26	0.3875	0.7047	0.8920	0.8949
IMDB-ECC-F	0.9625	14.35	0.5726	0.2054	0.8890	0.7956
IMDB-F	0.9227	13.81	0.5894	0.2301	0.9021	0.8342
LLOG-F	0.9262	31.09	0.6915	0.1350	0.5487	0.8741
mediamill	0.5081	56.53	0.4177	0.4596	0.9783	0.9856
medical	0.6429	15.00	0.6412	0.4015	0.5361	0.9812
Music	0.3500	2.45	0.3454	0.7293	0.8982	0.8990
OHSUMED-F	0.6411	10.65	0.5853	0.3957	0.9192	0.9168
PlantGO	0.8163	4.71	0.8163	0.3499	0.9958	0.9933
PlantPseAAC	0.9286	4.68	0.8776	0.2901	0.9776	0.9771
rcv1subset1	0.9400	68.08	0.6732	0.1059	0.8968	0.8031
REUTERS-K500-EX2	0.9633	48.54	0.6531	0.0909	0.7407	0.8846
scene	0.4025	1.35	0.3413	0.7143	0.9476	0.9537
sider_CDK_ECFP4	0.5563	22.65	0.6571	0.6288	0.5450	0.6666
sider_MordredDesc	0.5282	21.82	0.5708	0.6477	0.4624	0.6341
sider_RDKit_desc	0.5070	22.42	0.6248	0.6372	0.4883	0.6294
SLASHDOT-F	0.8232	11.83	0.8206	0.2351	0.7403	0.9538
Stackex_chemistry	0.9641	98.61	0.6599	0.0701	0.8108	0.7950
Stackex_chess	1.0000	139.57	0.7736	0.0497	0.4809	0.7485
Stackex_coffee	1.0000	69.43	0.7289	0.0732	0.2482	0.9352
Stackex_cooking	0.9903	201.48	0.6829	0.0362	0.8140	0.8189
Stackex_cs	0.9416	152.25	0.5677	0.0688	0.7898	0.8054
Stackex_philosophy	0.9975	126.33	0.6282	0.0520	0.6469	0.8209
tmc2007-500	0.5042	9.06	0.3761	0.4467	0.8694	0.8508
tox21_CDK_ECFP4	0.7329	7.52	0.5972	0.3564	0.7706	0.6635
tox21_RDKit_desc	0.6678	6.02	0.4717	0.4419	0.8165	0.7967
VirusGO	0.0952	0.57	0.1111	0.9222	0.8220	0.9893
VirusPseAAC	0.8571	3.05	0.8571	0.3552	0.8182	0.9818
Water-quality	0.4906	10.04	0.4820	0.6152	0.7355	0.7545
Yahoo_Arts	0.8732	12.35	0.4044	0.2529	0.8977	0.8164
Yahoo_Business	0.1506	5.37	0.1612	0.7530	0.7990	0.9089
Yahoo_Computers	0.4924	7.95	0.4843	0.5154	0.8621	0.9052
Yahoo_Education	0.9160	9.23	0.3877	0.2681	0.8512	0.8717
Yahoo_Entertainment	0.8476	8.30	0.4538	0.2933	0.5401	0.5911
Yahoo_Health	0.8654	6.55	0.8525	0.4066	0.7950	0.9326
Yahoo_Recreation	0.8457	9.92	0.8713	0.2751	0.5864	0.6017
Yahoo_Reference	0.5928	7.21	0.3748	0.4801	0.7673	0.9092
Yahoo_Science	0.9767	15.33	0.4308	0.1609	0.8905	0.8074
Yahoo_Social	0.9860	10.63	0.3490	0.1832	0.8653	0.8696
yeast	0.4256	8.30	0.5148	0.6152	0.8522	0.8848
Yelp	0.2861	1.63	0.3345	0.7947	0.8351	0.8677

Table 13: Detailed results for DBR(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3808	3.65	0.1679	0.6964	0.7650	0.7650
3s-bbc1000	0.6389	2.11	0.3403	0.5698	0.5148	0.5171
3s-guardian1000	0.7419	2.55	0.1532	0.4629	0.5065	0.5268
3s-reuters1000	0.7333	1.93	0.3333	0.5217	0.5625	0.5321
bibtex	0.5149	24.59	0.1023	0.4617	0.7573	0.7930
birds	0.6154	8.05	0.3913	0.4781	0.5970	0.6823
bookmarks	0.9106	89.75	0.3657	0.1744	0.6959	0.6639
CAL500	0.7451	165.39	0.4145	0.2698	0.4912	0.6261
corel16k001	0.7211	73.17	0.2537	0.2948	0.5623	0.6151
Corel5k	0.6400	186.48	0.2782	0.3040	0.3454	0.5833
delicious	0.8819	887.17	0.7249	0.0770	0.7703	0.7895
emotions	0.3167	2.23	0.1514	0.7396	0.7873	0.7591
enron	0.5731	28.85	0.2819	0.4125	0.5844	0.7629
EukaryoteGO	0.2278	1.06	0.0287	0.8573	0.6069	0.7278
EukaryotePseAAC	0.9060	5.53	0.2033	0.3021	0.6536	0.7069
Eurlex-dc	0.5949	79.40	0.2794	0.4502	0.5376	0.8393
Eurlex-sm	0.5225	44.59	0.3483	0.4405	0.6071	0.8369
foodtruck	0.4390	4.56	0.2730	0.6282	0.5378	0.7181
genbase	0.0000	0.22	0.0000	0.9975	0.5442	0.8644
GnegativeGO	0.0571	0.12	0.0143	0.9696	0.5967	0.8557
GnegativePseAAC	0.2500	0.68	0.1196	0.8361	0.6503	0.8784
GpositivePseAAC	0.3077	0.62	0.0769	0.8045	0.8041	0.8347
HumanGO	0.2058	1.04	0.0620	0.8588	0.6489	0.6588
HumanPseAAC	0.7524	4.10	0.3285	0.4427	0.5812	0.6955
Image	0.3000	0.98	0.1363	0.7980	0.7934	0.7947
IMDB-ECC-F	0.9729	17.06	0.6762	0.2101	0.6422	0.5288
IMDB-F	0.8935	17.67	0.5638	0.1645	0.6020	0.5507
LLOG-F	0.7951	21.60	0.2435	0.3151	0.3177	0.5950
mediamill	0.9938	44.72	0.3897	0.0901	0.6754	0.6683
medical	0.2143	1.11	0.0638	0.8560	0.3683	0.7409
Music	0.3667	2.52	0.1704	0.7230	0.7905	0.7447
OHSUMED-F	0.5097	5.87	0.1365	0.5867	0.7199	0.7429
PlantGO	0.4694	1.14	0.0536	0.7285	0.6042	0.6728
PlantPseAAC	0.6531	3.16	0.3299	0.5195	0.7313	0.7462
rcv1subset1	0.6105	53.00	0.3993	0.3484	0.8082	0.8210
REUTERS-K500-EX2	0.5250	11.29	0.0631	0.5591	0.5090	0.7009
scene	0.3361	0.82	0.0716	0.7893	0.8790	0.8405
sider_CDK_ECFP4	0.4577	23.35	0.4513	0.6154	0.6691	0.6781
sider_MordredDesc	0.4930	23.42	0.3220	0.6375	0.6272	0.6616
sider_RDKit_desc	0.4155	23.66	0.3844	0.6409	0.6034	0.6449
SLASHDOT-F	0.3483	2.47	0.0664	0.7376	0.5364	0.7645
Stackex_chemistry	0.6480	45.83	0.1466	0.3914	0.4942	0.6202
Stackex_chess	0.5476	65.13	0.1544	0.4045	0.3023	0.5883
Stackex_coffee	0.7391	43.70	0.1851	0.3411	0.1484	0.5816
Stackex_cooking	0.6058	109.18	0.1717	0.3807	0.4965	0.6037
Stackex_cs	0.5487	59.46	0.1392	0.4418	0.5484	0.7250
Stackex_philosophy	0.5930	70.32	0.1945	0.4171	0.4053	0.6101
tmc2007-500	0.3787	5.21	0.1469	0.6696	0.8246	0.8430
tox21_CDK_ECFP4	0.5514	4.89	0.1659	0.5506	0.6183	0.6744
tox21_RDKit_desc	0.6712	5.72	0.3473	0.4562	0.6210	0.6555
VirusGO	0.0952	0.52	0.0635	0.9153	0.6839	0.8903
VirusPseAAC	0.2857	1.05	0.2976	0.7873	0.6710	0.8227
Water-quality	0.4340	10.14	0.3833	0.5855	0.6354	0.6507
Yahoo_Arts	0.5367	8.67	0.3238	0.5265	0.5554	0.6111
Yahoo_Business	0.1462	4.85	0.1499	0.8298	0.5743	0.8218
Yahoo_Computers	0.4858	12.90	0.4962	0.5977	0.6597	0.7969
Yahoo_Education	0.6342	8.76	0.3288	0.4840	0.5015	0.6282
Yahoo_Entertainment	0.6990	8.35	0.6309	0.5292	0.7229	0.7244
Yahoo_Health	0.3931	6.57	0.2984	0.6744	0.5361	0.7664
Yahoo_Recreation	0.6080	7.78	0.3021	0.5130	0.6779	0.8052
Yahoo_Reference	0.5666	5.62	0.3094	0.5708	0.4907	0.7539
Yahoo_Science	0.6641	12.98	0.5183	0.4203	0.5529	0.5783
Yahoo_Social	0.5308	12.87	0.5483	0.5831	0.8234	0.8253
yeast	0.4959	7.90	0.2995	0.6322	0.6464	0.7173
Yelp	0.2473	1.68	0.1411	0.8139	0.7135	0.7596

Table 14: Detailed results for DBR(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5280	1.94	0.0500	0.6362	0.9599	0.9163
3s-bbc1000	0.6389	2.17	0.4444	0.5502	0.6622	0.6591
3s-guardian1000	0.6129	2.35	0.2742	0.5608	0.5968	0.5782
3s-reuters1000	0.7333	1.83	0.6083	0.5158	0.6769	0.6419
bibtex	0.7892	70.88	0.3160	0.1989	0.8554	0.7268
birds	0.3077	5.03	0.1012	0.6801	0.7797	0.8470
bookmarks	0.9953	131.32	0.6647	0.0618	0.7889	0.5608
CAL500	0.3725	168.18	0.4090	0.3042	0.4782	0.5223
corel16k001	0.9811	138.44	0.8544	0.0289	0.6051	0.2421
Corel5k	0.9960	362.42	0.5066	0.0090	0.4179	0.1553
delicious	0.5836	931.15	0.4814	0.1568	0.6443	0.5325
emotions	0.4833	1.93	0.2333	0.7136	0.8448	0.7802
enron	0.4503	44.91	0.5376	0.3196	0.5875	0.5094
EukaryoteGO	0.4299	5.98	0.3894	0.5933	0.9764	0.7405
EukaryotePseAAC	0.8044	13.73	0.7682	0.2480	0.7058	0.3631
Eurlex-dc	0.9772	168.72	0.3436	0.0898	0.7046	0.6507
Eurlex-sm	0.9375	96.19	0.5690	0.1873	0.7765	0.6861
foodtruck	0.6829	4.66	0.2233	0.4985	0.6013	0.7008
genbase	0.0000	0.34	0.0000	0.9939	0.6667	0.9963
GnegativeGO	0.9857	3.56	0.2732	0.2421	0.8579	0.5333
GnegativePseAAC	0.3357	0.84	0.1679	0.7928	0.7386	0.9142
GpositivePseAAC	0.2692	0.42	0.0577	0.8429	0.9329	0.9230
HumanGO	0.3666	3.45	0.2591	0.6725	0.9591	0.7548
HumanPseAAC	0.6399	6.15	0.4808	0.4373	0.6511	0.5592
Image	0.4500	1.02	0.1083	0.7334	0.8281	0.8012
IMDB-ECC-F	0.9199	23.48	0.7814	0.1309	0.5942	0.3445
IMDB-F	0.9202	23.70	0.8239	0.1262	0.5895	0.3333
LLOG-F	0.9918	47.23	0.5924	0.1059	0.4305	0.4383
mediamill	0.1710	85.50	0.4921	0.4248	0.7660	0.4856
medical	0.9184	29.13	0.0848	0.1474	0.5274	0.4162
Music	0.3500	1.98	0.2037	0.7636	0.8269	0.8010
OHSUMED-F	0.7100	12.82	0.2900	0.3094	0.8273	0.5232
PlantGO	0.7653	6.40	0.5808	0.3332	0.9683	0.4837
PlantPseAAC	0.6531	3.93	0.3520	0.4737	0.7340	0.6656
rcv1subset1	0.3900	27.43	0.1250	0.5578	0.8223	0.8817
REUTERS-K500-EX2	0.9667	52.24	0.5240	0.1193	0.6879	0.5775
scene	0.2573	0.52	0.0747	0.8463	0.9271	0.9190
sider_CDK_ECFP4	0.4437	20.43	0.2875	0.6416	0.5040	0.6642
sider_MordredDesc	0.4718	20.05	0.2783	0.6449	0.4966	0.6586
sider_RDKit_desc	0.4014	20.48	0.2822	0.6436	0.4900	0.6565
SLASHDOT-F	1.0000	15.22	0.9232	0.0846	0.6422	0.3249
Stackex_chemistry	0.9052	140.31	0.3814	0.0866	0.6875	0.3649
Stackex_chess	0.7143	141.55	0.3560	0.2253	0.4285	0.5916
Stackex_coffee	0.8696	60.00	0.3327	0.1727	0.1651	0.6876
Stackex_cooking	0.6483	253.95	0.4685	0.2363	0.7093	0.5711
Stackex_cs	0.8918	219.48	0.5770	0.1180	0.7048	0.4230
Stackex_philosophy	0.6910	168.26	0.5129	0.2084	0.5546	0.4869
tmc2007-500	0.4175	7.65	0.1569	0.5921	0.9047	0.7939
tox21_CDK_ECFP4	0.6473	6.64	0.2445	0.4244	0.6700	0.6080
tox21_RDKit_desc	0.7671	6.37	0.2601	0.4169	0.6539	0.6290
VirusGO	0.1429	0.81	0.1587	0.8778	0.7505	0.8923
VirusPseAAC	0.4286	1.14	0.0952	0.7159	0.6399	0.8341
Water-quality	0.3679	9.52	0.2784	0.6606	0.6707	0.7012
Yahoo_Arts	0.6195	15.70	0.2100	0.3652	0.7503	0.5381
Yahoo_Business	0.1310	3.01	0.1502	0.8801	0.7239	0.9369
Yahoo_Computers	0.7920	23.95	0.1322	0.2366	0.7334	0.4256
Yahoo_Education	0.8113	22.79	0.2864	0.2328	0.7139	0.3812
Yahoo_Entertainment	0.6889	9.05	0.3827	0.4211	0.7975	0.6485
Yahoo_Health	0.9338	21.60	0.3788	0.2214	0.6909	0.4917
Yahoo_Recreation	0.7654	10.51	0.1306	0.3303	0.8171	0.5828
Yahoo_Reference	0.8144	23.85	0.5794	0.2111	0.6543	0.3011
Yahoo_Science	0.6687	20.41	0.3890	0.3638	0.7717	0.5666
Yahoo_Social	0.7401	27.71	0.6743	0.2619	0.7312	0.3566
yeast	0.2975	9.76	0.2435	0.6667	0.6219	0.6832
Yelp	0.1555	1.40	0.1779	0.8740	0.8232	0.8501

Table 15: Detailed results for DBR(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3622	2.99	0.2740	0.7139	0.9779	0.9783
3s-bbc1000	0.5278	1.69	0.5000	0.6347	0.7780	0.7721
3s-guardian1000	0.5484	2.03	0.3387	0.6005	0.6446	0.6961
3s-reuters1000	0.8000	1.77	0.5667	0.5047	0.7064	0.6911
bibtex	0.3919	51.97	0.3351	0.5141	0.9697	0.9751
birds	0.4615	6.46	0.3509	0.5776	0.7665	0.8599
bookmarks	0.9920	150.49	0.8268	0.0405	0.8351	0.4871
CAL500	0.4118	150.63	0.5677	0.3895	0.6698	0.8236
corel16k001	0.8671	114.72	0.8921	0.1080	0.9848	0.9849
Corel5k	0.8580	160.96	0.9092	0.1370	0.6721	0.9911
delicious	0.6718	900.92	0.8878	0.1186	0.9936	0.9984
emotions	0.3500	2.12	0.2139	0.7353	0.8456	0.8289
enron	0.4386	18.58	0.2136	0.5990	0.7638	0.9403
EukaryoteGO	0.2162	0.88	0.0405	0.8648	0.9936	0.9936
EukaryotePseAAC	0.9511	10.68	0.9211	0.1830	0.9590	0.9587
Eurlex-dc	0.4102	55.51	0.3558	0.5970	0.7565	0.9965
Eurlex-sm	0.2558	36.59	0.4005	0.6281	0.8265	0.9955
foodtruck	0.2439	3.61	0.3413	0.7351	0.6858	0.8252
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0143	0.08	0.0107	0.9911	0.8741	0.9992
GnegativePseAAC	0.3286	1.38	0.2821	0.7544	0.7901	0.9380
GpositivePseAAC	0.4423	0.90	0.3269	0.7131	0.8205	0.7968
HumanGO	0.2315	0.77	0.0535	0.8569	0.9795	0.9804
HumanPseAAC	0.9035	7.01	0.8644	0.2656	0.9103	0.9036
Image	0.6450	1.92	0.4508	0.5621	0.8738	0.7897
IMDB-ECC-F	0.6340	11.35	0.4982	0.4257	0.9875	0.9334
IMDB-F	0.6300	11.98	0.5217	0.4073	0.9902	0.9319
LLOG-F	0.7049	21.47	0.5470	0.3408	0.5450	0.9362
mediamill	0.3240	69.27	0.6128	0.4049	0.9970	0.9942
medical	0.1327	2.96	0.0867	0.8820	0.5492	0.9951
Music	0.3000	2.28	0.1806	0.7607	0.8314	0.8177
OHSUMED-F	0.3769	7.34	0.3635	0.6159	0.9510	0.9584
PlantGO	0.2755	1.36	0.1548	0.8002	0.9603	0.9680
PlantPseAAC	0.8571	3.97	0.6531	0.3620	0.8049	0.8176
rcv1subset1	0.6083	52.25	0.6254	0.3211	0.9105	0.9689
REUTERS-K500-EX2	0.6233	34.49	0.5705	0.4072	0.7757	0.9885
scene	0.4440	1.58	0.3091	0.6770	0.8952	0.8825
sider_CDK_ECFP4	0.2606	19.43	0.1874	0.7837	0.5502	0.7527
sider_MordredDesc	0.3592	20.13	0.2559	0.7618	0.5888	0.7583
sider_RDKit_desc	0.4648	20.67	0.2684	0.7370	0.5509	0.7366
SLASHDOT-F	0.4433	5.32	0.3300	0.6238	0.7402	0.9696
Stackex_chemistry	0.8233	104.80	0.8326	0.1475	0.9064	0.9854
Stackex_chess	0.6488	117.93	0.6415	0.2638	0.5378	0.9828
Stackex_coffee	0.7826	57.78	0.4269	0.2677	0.2412	0.9452
Stackex_cooking	0.5527	197.08	0.6491	0.3055	0.9171	0.9921
Stackex_cs	0.7143	148.02	0.7677	0.2242	0.8880	0.9893
Stackex_philosophy	0.6558	124.83	0.6844	0.2528	0.7364	0.9842
tmc2007-500	0.3846	6.48	0.3281	0.6498	0.9697	0.9654
tox21_CDK_ECFP4	0.5719	6.06	0.5315	0.4823	0.8423	0.8478
tox21_RDKit_desc	0.8082	7.16	0.8278	0.3423	0.9046	0.9014
VirusGO	0.0476	0.38	0.0476	0.9563	0.8148	0.9869
VirusPseAAC	0.5714	1.14	0.0476	0.6619	0.6528	0.8518
Water-quality	0.3019	9.75	0.3733	0.6646	0.8000	0.7454
Yahoo_Arts	0.5207	11.13	0.5649	0.4775	0.9323	0.9715
Yahoo_Business	0.1159	3.19	0.1874	0.8677	0.8552	0.9919
Yahoo_Computers	0.4361	6.79	0.5157	0.5794	0.8967	0.9821
Yahoo_Education	0.6384	9.68	0.6801	0.4524	0.8975	0.9876
Yahoo_Entertainment	0.5051	4.27	0.5453	0.5899	0.9884	0.9893
Yahoo_Health	0.3388	6.87	0.3403	0.6709	0.8297	0.9826
Yahoo_Recreation	0.4287	6.31	0.4605	0.6127	0.9875	0.9883
Yahoo_Reference	0.4857	4.67	0.4782	0.6056	0.8039	0.9868
Yahoo_Science	0.5785	13.31	0.5940	0.4515	0.9520	0.9787
Yahoo_Social	0.6441	7.49	0.1929	0.4952	0.8363	0.8901
yeast	0.2521	6.88	0.4498	0.7000	0.9070	0.9093
Yelp	0.2722	1.57	0.2453	0.8148	0.8868	0.8867

Table 16: Detailed results for DBR+US(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9259	7.00	0.5911	0.2656	0.9090	0.9076
3s-bbc1000	0.8333	3.17	0.8056	0.4069	0.9310	0.9177
3s-guardian1000	0.5484	2.48	0.7097	0.5624	1.0000	1.0000
3s-reuters1000	0.8667	2.63	0.8667	0.3950	1.0000	1.0000
bibtex	0.9905	80.39	0.9728	0.0534	0.6535	0.6060
birds	0.6154	6.41	0.3702	0.5136	0.8308	0.9275
bookmarks	0.9909	129.02	0.5899	0.0298	0.5290	0.4950
CAL500	0.5882	151.82	0.6560	0.2680	0.6855	0.7882
corel16k001	0.9942	116.70	0.8470	0.0369	0.5171	0.4798
Corel5k	0.9280	256.44	0.5890	0.0601	0.3377	0.4801
delicious	0.9975	935.68	0.7329	0.0191	0.5178	0.4376
emotions	0.4833	2.32	0.4778	0.6722	0.8509	0.8479
enron	0.8421	33.33	0.4949	0.1987	0.6795	0.6902
EukaryoteGO	0.6242	4.63	0.3281	0.5366	0.9565	0.9624
EukaryotePseAAC	0.8867	7.56	0.5024	0.2731	0.8968	0.8462
Eurlex-dc	0.9053	43.05	0.2018	0.1544	0.7448	0.9769
Eurlex-sm	0.9075	51.35	0.5837	0.1338	0.7956	0.9178
foodtruck	0.8537	8.20	0.3340	0.2534	0.4811	0.4092
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0643	0.14	0.0643	0.9649	0.8653	0.9946
GnegativePseAAC	0.6000	2.19	0.4821	0.5598	0.8198	0.8965
GpositivePseAAC	0.6154	1.35	0.5962	0.5881	0.9794	0.9747
HumanGO	0.6656	2.21	0.1894	0.5525	0.9153	0.9421
HumanPseAAC	0.9550	7.91	0.9143	0.1980	0.8638	0.8018
Image	0.4950	1.42	0.3879	0.6734	0.8784	0.8766
IMDB-ECC-F	0.9497	18.26	0.8787	0.1426	0.7787	0.5552
IMDB-F	0.9530	18.21	0.9742	0.1503	0.6803	0.5238
LLOG-F	0.9836	23.42	0.9045	0.1331	0.5481	0.8806
mediamill	0.9722	61.34	0.4766	0.1250	0.8791	0.8903
medical	0.5204	11.04	0.4830	0.5436	0.5527	0.9915
Music	0.4667	2.67	0.4500	0.6712	0.8687	0.8692
OHSUMED-F	0.7739	9.21	0.3625	0.3553	0.8858	0.8156
PlantGO	0.5102	1.82	0.3342	0.6512	0.9929	0.9744
PlantPseAAC	0.9592	4.78	0.8112	0.2576	0.9439	0.9142
rcv1subset1	0.9450	74.54	0.5163	0.1071	0.5190	0.4990
REUTERS-K500-EX2	0.9867	47.55	0.4744	0.0735	0.7271	0.7976
scene	0.5145	1.66	0.3838	0.6433	0.9359	0.9347
sider_CDK_ECFP4	0.5915	23.49	0.7388	0.6002	0.5404	0.6039
sider_MordredDesc	0.4718	23.49	0.6715	0.6260	0.4940	0.5606
sider_RDKit_desc	0.5000	23.44	0.7192	0.6147	0.4799	0.5742
SLASHDOT-F	0.7361	10.36	0.7227	0.3093	0.7613	0.9217
Stackex_chemistry	0.9727	109.35	0.7095	0.0473	0.5222	0.5234
Stackex_chess	1.0000	106.95	0.5111	0.0450	0.5033	0.8283
Stackex_coffee	1.0000	70.74	0.6579	0.1123	0.2539	0.9409
Stackex_cooking	0.9884	200.69	0.5551	0.0265	0.5747	0.6340
Stackex_cs	0.9361	156.56	0.5060	0.0543	0.5496	0.5803
Stackex_philosophy	0.9925	123.44	0.5327	0.0379	0.6712	0.7648
tmc2007-500	0.5605	8.60	0.2924	0.4278	0.7631	0.7869
tox21_CDK_ECFP4	0.9178	7.05	0.5385	0.3170	0.5590	0.5538
tox21_RDKit_desc	0.7123	6.66	0.5130	0.3964	0.6387	0.6074
VirusGO	0.0476	0.38	0.0476	0.9563	0.8129	0.9885
VirusPseAAC	0.8095	3.05	0.8333	0.3706	0.7840	0.9599
Water-quality	0.4623	10.36	0.5348	0.5886	0.6725	0.6852
Yahoo_Arts	0.8451	13.01	0.5598	0.2470	0.5631	0.5669
Yahoo_Business	0.1809	5.80	0.1651	0.7848	0.4745	0.6277
Yahoo_Computers	0.4924	9.15	0.4595	0.4848	0.5163	0.6603
Yahoo_Education	0.8712	9.94	0.4536	0.2785	0.7815	0.8197
Yahoo_Entertainment	0.9324	8.81	0.7792	0.2490	0.5630	0.5619
Yahoo_Health	0.8512	8.62	0.8976	0.3856	0.4924	0.7030
Yahoo_Recreation	0.8433	10.05	0.8773	0.2835	0.5506	0.5413
Yahoo_Reference	0.9552	10.97	0.4689	0.2274	0.6396	0.6806
Yahoo_Science	0.9673	15.10	0.3412	0.2032	0.5987	0.6190
Yahoo_Social	0.9076	14.88	0.2755	0.1730	0.5466	0.5601
yeast	0.5289	10.10	0.5937	0.5177	0.6432	0.6419
Yelp	0.3141	1.79	0.2824	0.7657	0.7707	0.7706

Table 17: Detailed results for DBR+US(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4736	5.08	0.1790	0.5999	0.7169	0.7160
3s-bbc1000	0.5000	1.69	0.2222	0.6580	0.5831	0.5929
3s-guardian1000	0.6774	2.45	0.2419	0.5105	0.5621	0.6142
3s-reuters1000	0.8000	1.97	0.4000	0.4839	0.6126	0.5743
bibtex	0.6608	41.49	0.2315	0.3374	0.8083	0.8194
birds	0.6923	7.72	0.3167	0.4561	0.6245	0.7206
bookmarks	0.8305	89.67	0.3672	0.2005	0.7304	0.7076
CAL500	0.8235	166.00	0.4014	0.2289	0.5369	0.6026
corel16k001	0.9906	72.57	0.3215	0.0545	0.5643	0.5450
Corel5k	0.9120	259.30	0.3989	0.0877	0.3888	0.5887
delicious	0.9857	893.65	0.9340	0.0308	0.9648	0.9711
emotions	0.3333	2.02	0.1833	0.7609	0.8014	0.7721
enron	0.6491	28.85	0.2972	0.3412	0.5630	0.7229
EukaryoteGO	0.3604	5.69	0.2523	0.6839	0.7560	0.7497
EukaryotePseAAC	0.9035	7.50	0.2776	0.2672	0.6751	0.6484
Eurlex-dc	0.6508	79.03	0.3213	0.3979	0.5804	0.8642
Eurlex-sm	0.6026	62.02	0.3606	0.3539	0.6476	0.8082
foodtruck	0.7073	6.68	0.1894	0.4034	0.5939	0.6054
genbase	0.1194	2.43	0.1480	0.8374	0.5590	0.9291
GnegativeGO	0.0857	0.41	0.0089	0.9338	0.6884	0.9362
GnegativePseAAC	0.2500	0.77	0.0964	0.8325	0.6319	0.8685
GpositivePseAAC	0.2692	0.52	0.0962	0.8285	0.8317	0.8572
HumanGO	0.2540	2.03	0.1384	0.7995	0.8429	0.8778
HumanPseAAC	0.7556	4.95	0.3896	0.4154	0.5851	0.6628
Image	0.3350	1.01	0.1437	0.7827	0.7974	0.7996
IMDB-ECC-F	0.9086	17.04	0.6055	0.1815	0.5597	0.5363
IMDB-F	0.9190	17.71	0.5917	0.1709	0.5545	0.5249
LLOG-F	0.7951	31.47	0.3944	0.2703	0.3338	0.6535
mediamill	0.9955	40.30	0.2517	0.1000	0.6684	0.7128
medical	0.3163	5.36	0.0799	0.7115	0.3878	0.8604
Music	0.3500	2.47	0.1870	0.7302	0.7673	0.7385
OHSUMED-F	0.5851	7.71	0.1828	0.5027	0.7432	0.7274
PlantGO	0.4286	2.26	0.3367	0.6773	0.7062	0.8033
PlantPseAAC	0.6837	3.71	0.4634	0.4848	0.7247	0.7213
rcv1subset1	0.5733	53.04	0.3653	0.3881	0.8326	0.7761
REUTERS-K500-EX2	0.6133	38.02	0.3182	0.4358	0.5971	0.7714
scene	0.3444	0.81	0.0716	0.7877	0.8812	0.8506
sider_CDK_ECFP4	0.5845	24.29	0.5681	0.5507	0.6641	0.6380
sider_MordredDesc	0.5352	23.82	0.3361	0.6343	0.6245	0.6475
sider_RDKit_desc	0.4507	24.05	0.4689	0.6073	0.5687	0.5994
SLASHDOT-F	0.5040	7.56	0.4062	0.5432	0.5601	0.7466
Stackex_chemistry	0.8678	79.87	0.3353	0.1643	0.6235	0.6843
Stackex_chess	0.6488	121.77	0.3507	0.2796	0.3119	0.6724
Stackex_coffee	0.8261	52.96	0.1947	0.2372	0.1488	0.5929
Stackex_cooking	0.8976	195.16	0.3938	0.1110	0.6395	0.6905
Stackex_cs	0.7955	105.52	0.2563	0.2221	0.6761	0.7844
Stackex_philosophy	0.6859	127.88	0.3642	0.2847	0.4466	0.6971
tmc2007-500	0.4430	6.63	0.1723	0.6022	0.8426	0.8362
tox21_CDK_ECFP4	0.6062	5.41	0.2311	0.5039	0.6448	0.6656
tox21_RDKit_desc	0.7123	5.95	0.3242	0.4269	0.6069	0.6362
VirusGO	0.0952	0.48	0.0317	0.9222	0.6531	0.8693
VirusPseAAC	0.2857	0.95	0.2500	0.7933	0.6800	0.8577
Water-quality	0.4906	10.21	0.4590	0.5562	0.6364	0.6250
Yahoo_Arts	0.6435	13.58	0.3368	0.4101	0.6228	0.5620
Yahoo_Business	0.1970	8.26	0.1565	0.7572	0.6201	0.8147
Yahoo_Computers	0.4643	12.85	0.5175	0.5226	0.6175	0.6972
Yahoo_Education	0.6475	15.79	0.5840	0.4178	0.5786	0.6318
Yahoo_Entertainment	0.6701	8.38	0.5461	0.4411	0.6750	0.6359
Yahoo_Health	0.3996	9.78	0.2779	0.6321	0.6210	0.7820
Yahoo_Recreation	0.5705	7.73	0.3505	0.5159	0.7272	0.7135
Yahoo_Reference	0.5616	8.74	0.3990	0.5281	0.6665	0.8055
Yahoo_Science	0.8180	19.27	0.6447	0.2775	0.7177	0.6763
Yahoo_Social	0.5330	12.90	0.4663	0.5192	0.7848	0.7918
yeast	0.6570	9.28	0.3235	0.5184	0.6746	0.6306
Yelp	0.3170	1.86	0.1265	0.7664	0.7347	0.7339

Table 18: Detailed results for DBR+US(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.8383	7.42	0.4398	0.2964	0.9282	0.6338
3s-bbc1000	0.6111	1.92	0.2361	0.5926	0.6326	0.6555
3s-guardian1000	0.7742	2.32	0.3306	0.4892	0.5045	0.5617
3s-reuters1000	0.8333	2.33	0.5000	0.4272	0.6065	0.5766
bibtex	0.8878	67.85	0.4284	0.1368	0.8715	0.7398
birds	0.5897	5.62	0.1156	0.5219	0.7496	0.8013
bookmarks	0.9743	150.49	0.8148	0.0426	0.8245	0.4639
CAL500	0.5098	170.47	0.4658	0.3348	0.5394	0.6348
corel16k001	0.9964	140.39	0.7454	0.0319	0.6907	0.2951
Corel5k	0.9980	351.47	0.4046	0.0330	0.4951	0.4251
delicious	0.7004	968.41	0.7138	0.0472	0.8432	0.3195
emotions	0.3500	1.62	0.1958	0.7910	0.8675	0.8423
enron	0.5731	41.75	0.5321	0.3123	0.6241	0.5845
EukaryoteGO	0.8932	14.68	0.8169	0.1782	0.9789	0.3245
EukaryotePseAAC	0.8970	14.81	0.6834	0.1891	0.7047	0.3027
Eurlex-dc	0.9157	147.03	0.5891	0.1077	0.7046	0.6902
Eurlex-sm	0.8413	143.08	0.3359	0.1200	0.7578	0.4472
foodtruck	0.6829	5.85	0.1630	0.4375	0.6471	0.6519
genbase	0.0000	0.48	0.0075	0.9933	0.6667	0.9944
GnegativeGO	0.4286	1.34	0.0000	0.6823	0.8635	0.8125
GnegativePseAAC	0.2500	0.72	0.0482	0.8319	0.7319	0.9203
GpositivePseAAC	0.2308	0.40	0.0962	0.8590	0.9207	0.9131
HumanGO	0.5659	6.47	0.4879	0.4976	0.9479	0.5340
HumanPseAAC	0.8167	7.88	0.6882	0.2972	0.6907	0.4204
Image	0.6550	1.22	0.0575	0.6331	0.8160	0.7489
IMDB-ECC-F	0.9828	21.87	0.7802	0.0858	0.5843	0.3174
IMDB-F	0.9759	22.76	0.7335	0.0927	0.5830	0.2864
LLOG-F	0.8689	20.78	0.2786	0.2254	0.4237	0.7607
mediamill	0.7304	80.79	0.4481	0.2308	0.8218	0.5978
medical	0.8571	21.11	0.0085	0.2874	0.5379	0.6177
Music	0.2500	1.83	0.1602	0.8120	0.8174	0.8279
OHSUMED-F	0.9203	14.14	0.1424	0.1587	0.8081	0.4485
PlantGO	0.6327	4.46	0.6173	0.4860	0.9302	0.6531
PlantPseAAC	0.6633	3.44	0.5884	0.4628	0.7569	0.7218
rcv1subset1	0.5150	29.53	0.1348	0.4582	0.8336	0.8548
REUTERS-K500-EX2	0.8783	24.61	0.0903	0.1819	0.7069	0.7953
scene	0.2116	0.42	0.0716	0.8769	0.9462	0.9475
sider_CDK_ECFP4	0.4930	22.82	0.3590	0.5869	0.5657	0.5557
sider_MordredDesc	0.3239	23.08	0.4022	0.6387	0.5567	0.5901
sider_RDKit_desc	0.2183	23.15	0.2665	0.6854	0.5345	0.6402
SLASHDOT-F	1.0000	13.35	0.2480	0.0996	0.5934	0.4103
Stackex_chemistry	0.8764	110.17	0.3742	0.1250	0.7077	0.5717
Stackex_chess	0.7857	74.67	0.1587	0.2114	0.4364	0.8050
Stackex_coffee	0.8696	44.78	0.1905	0.1641	0.1686	0.7582
Stackex_cooking	0.9527	204.35	0.3269	0.0774	0.7389	0.6834
Stackex_cs	0.8907	169.89	0.3114	0.1157	0.7492	0.6676
Stackex_philosophy	0.8719	99.60	0.4451	0.1420	0.5665	0.7476
tmc2007-500	0.9308	10.19	0.1427	0.2980	0.8969	0.6865
tox21_CDK_ECFP4	0.7329	6.98	0.3068	0.3911	0.6555	0.5555
tox21_RDKit_desc	0.7671	7.40	0.4862	0.3701	0.7023	0.5398
VirusGO	0.5238	2.95	0.5397	0.5595	0.7458	0.5271
VirusPseAAC	0.3333	0.86	0.0476	0.7913	0.6508	0.8717
Water-quality	0.3585	10.02	0.2220	0.6316	0.6923	0.6852
Yahoo_Arts	0.8131	18.71	0.2732	0.2105	0.6524	0.4418
Yahoo_Business	0.6916	26.31	0.1154	0.2230	0.6678	0.3968
Yahoo_Computers	0.8562	22.96	0.1452	0.1885	0.6571	0.4520
Yahoo_Education	0.8520	25.04	0.2567	0.1743	0.6243	0.3162
Yahoo_Entertainment	0.6976	11.59	0.6016	0.3509	0.7458	0.5467
Yahoo_Health	0.6699	22.33	0.3795	0.2923	0.6214	0.4897
Yahoo_Recreation	0.8519	13.68	0.1282	0.2096	0.7399	0.4647
Yahoo_Reference	0.9365	22.98	0.6753	0.1479	0.5693	0.3425
Yahoo_Science	0.8694	26.19	0.5348	0.1846	0.6863	0.4716
Yahoo_Social	0.9612	32.93	0.8377	0.0723	0.6594	0.2265
yeast	0.4298	9.08	0.3070	0.5763	0.6696	0.6436
Yelp	0.3878	2.17	0.1068	0.7035	0.8129	0.7038

Table 19: Detailed results for DBR+US(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5834	2.66	0.1478	0.5940	0.9360	0.9030
3s-bbc1000	0.7778	2.39	0.4306	0.4870	0.5108	0.5302
3s-guardian1000	0.8065	2.55	0.5242	0.4527	0.4958	0.5670
3s-reuters1000	0.7667	2.43	0.6333	0.4589	0.5491	0.5471
bibtex	0.8324	44.39	0.4175	0.2621	0.8959	0.8739
birds	0.4615	6.41	0.2893	0.5635	0.7176	0.8159
bookmarks	0.9743	150.49	0.8148	0.0426	0.8245	0.4639
CAL500	0.7843	151.86	0.4863	0.2645	0.5235	0.6788
corel16k001	0.9935	112.24	0.5281	0.0400	0.7120	0.5117
Corel5k	0.9600	181.88	0.5863	0.0593	0.5016	0.7388
delicious	0.9981	923.82	0.6579	0.0180	0.5108	0.3657
emotions	0.3833	2.10	0.3028	0.7262	0.8176	0.8079
enron	0.6140	21.71	0.2171	0.3906	0.6465	0.8134
EukaryoteGO	0.2033	0.48	0.0039	0.8867	0.9959	0.9958
EukaryotePseAAC	0.9781	12.14	0.6339	0.1317	0.7155	0.5786
Eurlex-dc	0.5685	11.89	0.0420	0.5586	0.7384	0.9830
Eurlex-sm	0.4176	13.88	0.0604	0.6145	0.7988	0.9724
foodtruck	0.6098	4.41	0.2885	0.5300	0.6457	0.7266
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0143	0.09	0.0071	0.9893	0.8721	0.9983
GnegativePseAAC	0.5429	1.96	0.2071	0.6003	0.6898	0.7987
GpositivePseAAC	0.5000	0.81	0.1923	0.7051	0.8191	0.8286
HumanGO	0.2637	0.70	0.0316	0.8468	0.9829	0.9848
HumanPseAAC	0.9100	6.72	0.6136	0.2516	0.6543	0.5606
Image	0.5450	1.67	0.2908	0.6259	0.7459	0.7188
IMDB-ECC-F	0.9206	15.72	0.5086	0.1807	0.6883	0.6208
IMDB-F	0.9372	15.51	0.4650	0.1742	0.6424	0.5708
LLOG-F	0.8689	25.01	0.4348	0.2075	0.4399	0.7865
mediamill	0.7760	46.89	0.1800	0.3413	0.7812	0.8407
medical	0.2347	2.47	0.1182	0.8142	0.5453	0.9793
Music	0.3667	2.08	0.2810	0.7630	0.8391	0.8302
OHSUMED-F	0.7272	6.85	0.1745	0.4377	0.9069	0.8265
PlantGO	0.1939	0.88	0.0867	0.8654	0.9654	0.9726
PlantPseAAC	0.8367	5.11	0.4991	0.3258	0.7075	0.6354
rcv1subset1	0.8250	30.78	0.3479	0.2452	0.8231	0.8447
REUTERS-K500-EX2	0.8800	16.60	0.1707	0.2595	0.7145	0.8947
scene	0.5145	1.67	0.3859	0.6376	0.8698	0.8301
sider_CDK_ECFP4	0.5493	24.36	0.5201	0.5785	0.7004	0.6255
sider_MordredDesc	0.6338	23.58	0.4478	0.6086	0.6482	0.6080
sider_RDKit_desc	0.2817	22.90	0.3489	0.6693	0.6539	0.6576
SLASHDOT-F	0.7467	4.35	0.1335	0.4436	0.6735	0.8669
Stackex_chemistry	0.9267	66.23	0.4187	0.1186	0.7510	0.7773
Stackex_chess	0.7500	69.67	0.2978	0.2821	0.4789	0.9054
Stackex_coffee	0.6522	59.70	0.4158	0.3070	0.2430	0.9377
Stackex_cooking	0.9121	123.58	0.2860	0.1385	0.7684	0.8476
Stackex_cs	0.8680	71.86	0.1487	0.1863	0.7843	0.8797
Stackex_philosophy	0.8643	84.88	0.2752	0.2039	0.6209	0.8459
tmc2007-500	0.5517	5.67	0.1040	0.5335	0.9232	0.8735
tox21_CDK_ECFP4	0.6644	7.02	0.2255	0.3867	0.5955	0.5388
tox21_RDKit_desc	0.6610	5.91	0.2819	0.4502	0.8245	0.6658
VirusGO	0.0476	0.38	0.0476	0.9563	0.8067	0.9846
VirusPseAAC	0.3810	0.67	0.0714	0.7913	0.6804	0.8843
Water-quality	0.6132	9.90	0.4037	0.5523	0.6152	0.6113
Yahoo_Arts	0.7330	10.22	0.3617	0.3766	0.8294	0.8110
Yahoo_Business	0.4385	5.69	0.1062	0.5934	0.7511	0.8729
Yahoo_Computers	0.7373	8.04	0.2915	0.3900	0.7949	0.8355
Yahoo_Education	0.7880	12.15	0.6573	0.3133	0.7895	0.8105
Yahoo_Entertainment	0.5640	5.09	0.4586	0.5354	0.9146	0.8853
Yahoo_Health	0.6091	6.88	0.1922	0.4960	0.7573	0.8832
Yahoo_Recreation	0.6196	6.10	0.3482	0.5032	0.9227	0.8851
Yahoo_Reference	0.6700	5.75	0.3729	0.4618	0.7328	0.8730
Yahoo_Science	0.7558	13.33	0.4206	0.3425	0.8717	0.8298
Yahoo_Social	0.6477	7.51	0.2168	0.4882	0.8233	0.8845
yeast	0.7521	10.46	0.5386	0.4064	0.8074	0.6238
Yelp	0.3011	1.53	0.2227	0.8060	0.8629	0.8671

Table 20: Detailed results for STA(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4420	3.75	0.3453	0.6473	0.9824	0.9833
3s-bbc1000	0.6667	2.47	0.6019	0.5250	0.8686	0.8778
3s-guardian1000	0.6774	2.77	0.5968	0.4785	0.7966	0.8051
3s-reuters1000	0.8000	2.50	0.7000	0.4347	0.8520	0.8406
bibtex	0.5405	71.62	0.5469	0.4015	0.9891	0.9908
birds	0.4872	6.92	0.5017	0.5404	0.8608	0.9578
bookmarks	0.6608	87.98	0.5850	0.3413	0.9642	0.9673
CAL500	0.5686	151.59	0.7195	0.3292	0.7920	0.9184
corel16k001	0.8787	109.34	0.8236	0.1291	0.9759	0.9775
Corel5k	0.7640	164.40	0.8362	0.1789	0.6697	0.9905
delicious	0.6172	852.53	0.5743	0.2253	0.9530	0.9649
emotions	0.3833	2.27	0.3028	0.7186	0.9064	0.9154
enron	0.3626	22.31	0.4030	0.5549	0.8089	0.9688
EukaryoteGO	0.2201	1.99	0.1436	0.8277	0.9946	0.9960
EukaryotePseAAC	0.7439	7.93	0.6589	0.3661	0.9569	0.9632
Eurlex-dc	0.3161	50.17	0.2685	0.6922	0.7589	0.9994
Eurlex-sm	0.2181	28.09	0.2469	0.7318	0.8287	0.9984
foodtruck	0.3415	3.59	0.3257	0.6977	0.7539	0.8764
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.15	0.0214	0.9818	0.8745	0.9993
GnegativePseAAC	0.4429	1.46	0.3786	0.6951	0.8376	0.9684
GpositivePseAAC	0.4423	1.02	0.3654	0.7003	0.8893	0.8983
HumanGO	0.2862	1.66	0.1857	0.7931	0.9847	0.9890
HumanPseAAC	0.7331	5.21	0.6385	0.4100	0.9303	0.9375
Image	0.4350	1.33	0.3463	0.7044	0.9221	0.9244
IMDB-ECC-F	0.7796	13.68	0.7335	0.2924	0.9213	0.9303
IMDB-F	0.7761	14.03	0.7346	0.2927	0.9187	0.9283
LLOG-F	0.7623	28.11	0.6633	0.2835	0.5827	0.9807
mediamill	0.4043	54.78	0.4090	0.5046	0.9883	0.9920
medical	0.2143	5.55	0.1531	0.8114	0.5530	0.9977
Music	0.5167	2.35	0.4102	0.6823	0.8668	0.8797
OHSUMED-F	0.5111	9.04	0.4882	0.5124	0.9604	0.9650
PlantGO	0.2551	1.10	0.1514	0.8222	0.9852	0.9888
PlantPseAAC	0.7449	4.27	0.6888	0.3999	0.9182	0.9240
rcv1subset1	0.5750	50.27	0.5928	0.3680	0.9250	0.9857
REUTERS-K500-EX2	0.5667	27.95	0.4464	0.4830	0.7716	0.9872
scene	0.3693	1.35	0.3122	0.7318	0.9658	0.9694
sider_CDK_ECFP4	0.4085	22.92	0.4232	0.7133	0.5900	0.7177
sider_MordredDesc	0.4085	23.00	0.4111	0.7090	0.5797	0.7066
sider_RDKit_desc	0.3873	22.83	0.3928	0.7229	0.5724	0.6965
SLASHDOT-F	0.4776	6.72	0.4241	0.5710	0.7423	0.9734
Stackex_chemistry	0.7572	94.90	0.7395	0.2132	0.9052	0.9858
Stackex_chess	0.6964	128.55	0.7045	0.2405	0.5424	0.9903
Stackex_coffee	0.7826	67.78	0.6938	0.2096	0.2555	0.9847
Stackex_cooking	0.6541	203.78	0.6540	0.2763	0.9183	0.9938
Stackex_cs	0.6255	144.92	0.6642	0.2912	0.8897	0.9924
Stackex_philosophy	0.7236	124.92	0.6833	0.2479	0.7411	0.9900
tmc2007-500	0.3983	6.13	0.3529	0.6404	0.9557	0.9656
tox21_CDK_ECFP4	0.5788	5.70	0.5328	0.5032	0.8901	0.8965
tox21_RDKit_desc	0.5890	5.94	0.5341	0.4974	0.8688	0.8801
VirusGO	0.0476	0.43	0.0794	0.9526	0.8251	0.9925
VirusPseAAC	0.7143	2.14	0.4524	0.5143	0.6999	0.8662
Water-quality	0.5094	9.81	0.5638	0.5985	0.7565	0.7733
Yahoo_Arts	0.5394	9.53	0.4773	0.5142	0.9249	0.9668
Yahoo_Business	0.1221	2.95	0.1600	0.8723	0.8517	0.9927
Yahoo_Computers	0.4273	6.14	0.4225	0.6136	0.8851	0.9813
Yahoo_Education	0.5436	8.10	0.4915	0.5409	0.8853	0.9791
Yahoo_Entertainment	0.4454	3.76	0.4119	0.6363	0.9755	0.9788
Yahoo_Health	0.3203	5.54	0.3277	0.7115	0.8279	0.9876
Yahoo_Recreation	0.4599	5.36	0.3878	0.6221	0.9715	0.9738
Yahoo_Reference	0.4446	4.30	0.3848	0.6428	0.8031	0.9885
Yahoo_Science	0.5552	12.00	0.5055	0.4963	0.9552	0.9824
Yahoo_Social	0.3672	5.97	0.3302	0.6751	0.9129	0.9925
yeast	0.3926	7.47	0.4958	0.6520	0.8946	0.9172
Yelp	0.0987	1.22	0.1511	0.9140	0.9076	0.9244

Table 21: Detailed results for STA(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4321	1.96	0.0804	0.6980	0.8371	0.8350
3s-bbc1000	0.6667	2.19	0.4005	0.5544	0.5095	0.5114
3s-guardian1000	0.7742	2.77	0.1532	0.4269	0.5056	0.5244
3s-reuters1000	0.8333	2.40	0.3333	0.4272	0.5609	0.5262
bibtex	0.7608	54.83	0.3129	0.2474	0.7362	0.7377
birds	0.5897	8.23	0.3765	0.4810	0.6148	0.6875
bookmarks	0.8512	85.34	0.4333	0.1726	0.7456	0.7353
CAL500	0.7255	166.47	0.4232	0.2779	0.5060	0.6090
corel16k001	0.9463	88.44	0.4011	0.0764	0.6287	0.5968
Corel5k	0.9060	228.62	0.3808	0.0768	0.4247	0.6539
delicious	0.9814	812.31	0.5922	0.0270	0.6482	0.6356
emotions	0.3500	2.25	0.1708	0.7297	0.7915	0.7561
enron	0.6257	24.79	0.2283	0.3486	0.5945	0.7688
EukaryoteGO	0.4466	5.33	0.1009	0.6083	0.6228	0.7452
EukaryotePseAAC	0.9035	5.18	0.1206	0.2990	0.6788	0.7494
Eurlex-dc	0.8510	96.51	0.4073	0.1907	0.5862	0.8484
Eurlex-sm	0.6841	60.21	0.4536	0.2923	0.6346	0.8271
foodtruck	0.4634	4.39	0.3005	0.6110	0.5451	0.7190
genbase	0.1343	1.57	0.0746	0.8712	0.6215	0.9561
GnegativeGO	0.1071	0.36	0.0429	0.9215	0.7110	0.8999
GnegativePseAAC	0.2571	0.70	0.1143	0.8325	0.6446	0.8695
GpositivePseAAC	0.2885	0.52	0.0769	0.8253	0.8139	0.8418
HumanGO	0.4244	2.83	0.0998	0.6571	0.6556	0.6774
HumanPseAAC	0.7621	3.75	0.2462	0.4482	0.5819	0.7130
Image	0.3000	0.98	0.1412	0.7973	0.7897	0.7922
IMDB-ECC-F	0.6633	8.55	0.2088	0.4547	0.5292	0.5601
IMDB-F	0.9488	13.55	0.3324	0.2090	0.6262	0.5983
LLOG-F	0.8115	30.66	0.4031	0.2419	0.3326	0.6107
mediamill	0.9900	40.68	0.2834	0.0921	0.6812	0.6901
medical	0.5306	13.52	0.3963	0.5023	0.3652	0.7340
Music	0.3833	2.57	0.2120	0.7214	0.7759	0.7295
OHSUMED-F	0.5693	7.15	0.1087	0.5170	0.7196	0.7271
PlantGO	0.5714	2.07	0.0272	0.5978	0.6117	0.6930
PlantPseAAC	0.6327	2.94	0.3299	0.5398	0.7233	0.7627
rcv1subset1	0.5746	43.27	0.2915	0.4351	0.8686	0.8311
REUTERS-K500-EX2	0.8183	25.83	0.0709	0.2453	0.5506	0.7777
scene	0.3444	0.83	0.0705	0.7844	0.8815	0.8416
sider_CDK_ECFP4	0.3873	22.51	0.3741	0.6524	0.6715	0.6965
sider_MordredDesc	0.5141	23.31	0.3197	0.6394	0.6211	0.6627
sider_RDKit_desc	0.3662	23.31	0.3525	0.6618	0.6093	0.6672
SLASHDOT-F	0.4538	4.84	0.0508	0.6215	0.5473	0.7800
Stackex_chemistry	0.8807	83.68	0.3858	0.1185	0.5265	0.6441
Stackex_chess	0.8869	128.05	0.3191	0.1105	0.3190	0.6293
Stackex_coffee	0.9565	78.17	0.6935	0.0643	0.1449	0.5282
Stackex_cooking	0.8541	224.05	0.2724	0.1179	0.5257	0.6026
Stackex_cs	0.7890	127.79	0.2022	0.1586	0.5758	0.7025
Stackex_philosophy	0.9146	136.06	0.2410	0.0905	0.4107	0.5991
tmc2007-500	0.4406	6.20	0.1794	0.6293	0.8137	0.8394
tox21_CDK_ECFP4	0.5788	5.33	0.3423	0.5132	0.6062	0.6676
tox21_RDKit_desc	0.6575	5.67	0.3464	0.4588	0.6098	0.6446
VirusGO	0.1429	0.48	0.0278	0.9114	0.7015	0.9018
VirusPseAAC	0.2857	1.05	0.2976	0.7873	0.6744	0.8261
Water-quality	0.4528	10.23	0.3262	0.5874	0.6300	0.6485
Yahoo_Arts	0.6395	11.11	0.2742	0.3921	0.5570	0.6084
Yahoo_Business	0.1283	4.65	0.1791	0.7976	0.5747	0.8224
Yahoo_Computers	0.4651	10.02	0.4961	0.5330	0.5581	0.7336
Yahoo_Education	0.6908	14.44	0.5678	0.3687	0.5125	0.6366
Yahoo_Entertainment	0.6748	6.59	0.3799	0.4520	0.5883	0.6745
Yahoo_Health	0.4289	9.02	0.3990	0.5868	0.5330	0.7646
Yahoo_Recreation	0.5713	6.72	0.3531	0.5098	0.6376	0.7094
Yahoo_Reference	0.5753	7.85	0.4509	0.5013	0.4924	0.7558
Yahoo_Science	0.8709	17.53	0.5245	0.2130	0.5553	0.5801
Yahoo_Social	0.5503	9.25	0.3723	0.5025	0.5151	0.7631
yeast	0.4835	8.02	0.3057	0.6245	0.6273	0.6943
Yelp	0.2522	1.56	0.1654	0.8213	0.7069	0.7544

Table 22: Detailed results for STA(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2819	1.15	0.0541	0.8093	0.9573	0.9551
3s-bbc1000	0.7222	2.50	0.6736	0.4884	0.6376	0.6052
3s-guardian1000	0.6452	2.39	0.3226	0.5325	0.5224	0.5749
3s-reuters1000	0.8000	1.87	0.6833	0.4897	0.6758	0.6400
bibtex	0.4311	33.62	0.1505	0.5149	0.8731	0.8860
birds	0.3333	4.77	0.1265	0.6799	0.7826	0.8654
bookmarks	0.7407	48.33	0.1794	0.3629	0.8073	0.8180
CAL500	0.4118	167.51	0.3781	0.4276	0.4964	0.6836
corel16k001	0.7611	91.15	0.3594	0.1855	0.6019	0.6375
Corel5k	0.9880	293.02	0.1717	0.0893	0.4092	0.5181
delicious	0.7651	825.11	0.2097	0.1551	0.7450	0.7535
emotions	0.3500	1.83	0.1750	0.7742	0.8322	0.8419
enron	0.2982	26.59	0.2117	0.5856	0.5684	0.7839
EukaryoteGO	0.3372	1.01	0.0206	0.7941	0.9831	0.9664
EukaryotePseAAC	0.5843	5.03	0.1952	0.5439	0.7168	0.7939
Eurlex-dc	0.8427	38.35	0.0535	0.2535	0.7059	0.9193
Eurlex-sm	0.7783	30.67	0.1555	0.3584	0.7869	0.9182
foodtruck	0.2439	3.85	0.2946	0.7550	0.5085	0.7507
genbase	0.0000	0.22	0.0000	0.9975	0.6667	0.9995
GnegativeGO	0.0857	0.19	0.0089	0.9502	0.8561	0.9840
GnegativePseAAC	0.3857	0.87	0.2554	0.7662	0.7380	0.9142
GpositivePseAAC	0.2115	0.31	0.0192	0.8782	0.9309	0.9361
HumanGO	0.2508	0.88	0.0350	0.8446	0.9528	0.9479
HumanPseAAC	0.5659	3.86	0.2241	0.5624	0.6424	0.7420
Image	0.4400	0.99	0.1025	0.7390	0.8282	0.8033
IMDB-ECC-F	0.8637	14.13	0.4588	0.2399	0.5768	0.5944
IMDB-F	0.8881	16.64	0.5214	0.2050	0.5690	0.5369
LLOG-F	0.9918	30.96	0.2760	0.1928	0.4348	0.6554
mediamill	0.1542	42.53	0.1385	0.6245	0.6978	0.8279
medical	0.1633	2.63	0.0204	0.8543	0.5337	0.9619
Music	0.2167	1.88	0.1727	0.8225	0.8379	0.8423
OHSUMED-F	0.3934	5.53	0.1343	0.6463	0.8272	0.8449
PlantGO	0.2041	0.57	0.0204	0.8766	0.9486	0.9558
PlantPseAAC	0.6735	3.42	0.1930	0.4787	0.7320	0.7301
rcv1subset1	0.4100	20.22	0.0956	0.5766	0.8221	0.9109
REUTERS-K500-EX2	0.9550	20.27	0.2936	0.1831	0.6782	0.8344
scene	0.2573	0.52	0.0788	0.8463	0.9275	0.9184
sider_CDK_ECFP4	0.3310	20.50	0.1601	0.7848	0.5004	0.7316
sider_MordredDesc	0.4437	20.64	0.1976	0.7418	0.5093	0.7241
sider_RDKit_desc	0.3310	19.82	0.1438	0.7695	0.4728	0.7320
SLASHDOT-F	1.0000	5.92	0.2004	0.2973	0.6558	0.7565
Stackex_chemistry	0.6494	80.49	0.2207	0.2895	0.6902	0.6876
Stackex_chess	0.6190	109.87	0.2583	0.3231	0.4203	0.7111
Stackex_coffee	0.8261	43.30	0.1860	0.1951	0.1658	0.7590
Stackex_cooking	0.4628	134.37	0.1575	0.4171	0.7083	0.8019
Stackex_cs	0.4968	102.94	0.1794	0.4065	0.7118	0.8052
Stackex_philosophy	0.5251	107.53	0.2643	0.3925	0.5546	0.7274
tmc2007-500	0.3944	4.02	0.0963	0.7176	0.8994	0.9108
tox21_CDK_ECFP4	0.5411	5.23	0.1325	0.5392	0.6540	0.6972
tox21_RDKit_desc	0.9178	5.75	0.2791	0.3882	0.6692	0.6464
VirusGO	0.0476	0.48	0.0476	0.9524	0.7655	0.9568
VirusPseAAC	0.4286	1.24	0.0952	0.7040	0.6351	0.8295
Water-quality	0.3208	9.25	0.2541	0.6969	0.7005	0.7297
Yahoo_Arts	0.4833	6.71	0.1859	0.6030	0.7581	0.7954
Yahoo_Business	0.1319	3.55	0.1369	0.8701	0.7391	0.9186
Yahoo_Computers	0.3976	7.83	0.2757	0.6555	0.7354	0.8030
Yahoo_Education	0.4381	7.82	0.1767	0.6180	0.7213	0.7971
Yahoo_Entertainment	0.7714	4.59	0.1395	0.4754	0.7921	0.8201
Yahoo_Health	0.5603	6.94	0.1636	0.6033	0.6812	0.8257
Yahoo_Recreation	0.5931	4.45	0.1839	0.5774	0.8247	0.8150
Yahoo_Reference	0.3973	6.54	0.1146	0.6698	0.6499	0.8109
Yahoo_Science	0.3997	8.73	0.1627	0.6426	0.7781	0.8004
Yahoo_Social	0.3894	7.55	0.1381	0.6865	0.7384	0.8296
yeast	0.2190	7.37	0.2601	0.7353	0.6755	0.7957
Yelp	0.1645	1.38	0.1164	0.8777	0.8120	0.8471

Table 23: Detailed results for STA(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3301	2.89	0.2653	0.7321	0.9793	0.9804
3s-bbc1000	0.5556	1.81	0.4653	0.6255	0.8160	0.8006
3s-guardian1000	0.6129	2.42	0.5000	0.5285	0.7419	0.7681
3s-reuters1000	0.7667	2.57	0.6167	0.4353	0.6958	0.6877
bibtex	0.4297	59.98	0.4244	0.4831	0.9828	0.9855
birds	0.3846	6.15	0.2966	0.5963	0.7797	0.8719
bookmarks	0.7617	54.99	0.1962	0.3107	0.8570	0.8195
CAL500	0.4510	151.59	0.6122	0.3666	0.6732	0.8209
corel16k001	0.8700	112.18	0.8640	0.1196	0.9781	0.9778
Corel5k	0.7980	153.46	0.8357	0.1908	0.6710	0.9912
delicious	0.5942	890.38	0.8359	0.1421	0.9864	0.9914
emotions	0.2833	2.10	0.2264	0.7638	0.8426	0.8417
enron	0.3333	24.43	0.4398	0.5136	0.7827	0.9518
EukaryoteGO	0.2098	1.11	0.0611	0.8629	0.9930	0.9949
EukaryotePseAAC	0.9408	10.61	0.9059	0.1921	0.9530	0.9505
Eurlex-dc	0.4847	14.17	0.0642	0.6454	0.7434	0.9878
Eurlex-sm	0.2248	34.03	0.3640	0.6590	0.8267	0.9961
foodtruck	0.3171	3.15	0.2916	0.7194	0.7401	0.8600
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.09	0.0143	0.9863	0.8738	0.9991
GnegativePseAAC	0.3286	1.30	0.2643	0.7651	0.8012	0.9456
GpositivePseAAC	0.3846	0.67	0.1731	0.7676	0.7884	0.8238
HumanGO	0.2379	0.90	0.0734	0.8527	0.9781	0.9836
HumanPseAAC	0.9035	6.99	0.8669	0.2672	0.9076	0.9078
Image	0.6450	1.89	0.5971	0.5646	0.8870	0.8845
IMDB-ECC-F	0.9276	15.60	0.9580	0.1770	0.9874	0.9871
IMDB-F	0.9339	16.02	0.9691	0.1714	0.9896	0.9894
LLOG-F	0.7295	23.54	0.5738	0.3236	0.5587	0.9530
mediamill	0.3145	67.88	0.5894	0.4222	0.9933	0.9914
medical	0.1633	4.06	0.0969	0.8558	0.5494	0.9957
Music	0.2667	2.35	0.2213	0.7618	0.8398	0.8302
OHSUMED-F	0.3991	8.02	0.3911	0.5932	0.9575	0.9609
PlantGO	0.2143	1.24	0.1565	0.8350	0.9729	0.9783
PlantPseAAC	0.8469	4.21	0.7092	0.3476	0.7996	0.8025
rcv1subset1	0.5750	46.96	0.5679	0.3650	0.9104	0.9710
REUTERS-K500-EX2	0.6133	33.80	0.5451	0.4228	0.7749	0.9884
scene	0.3942	1.53	0.3444	0.7051	0.8980	0.8981
sider_CDK_ECFP4	0.3239	20.00	0.2391	0.7538	0.5393	0.7326
sider_MordredDesc	0.4577	20.65	0.3461	0.7106	0.5541	0.7193
sider_RDKit_desc	0.5282	20.91	0.3543	0.6984	0.5703	0.7158
SLASHDOT-F	0.3984	4.92	0.2852	0.6565	0.7404	0.9702
Stackex_chemistry	0.8103	105.24	0.8387	0.1468	0.9073	0.9867
Stackex_chess	0.6607	122.79	0.6776	0.2504	0.5401	0.9859
Stackex_coffee	0.8696	69.61	0.6812	0.1469	0.2476	0.9542
Stackex_cooking	0.6116	203.69	0.6788	0.2725	0.9175	0.9925
Stackex_cs	0.7154	147.63	0.7542	0.2296	0.8881	0.9899
Stackex_philosophy	0.7111	127.16	0.7155	0.2236	0.7387	0.9866
tmc2007-500	0.3790	5.80	0.3016	0.6695	0.9705	0.9691
tox21_CDK_ECFP4	0.5753	6.10	0.5663	0.4800	0.8598	0.8622
tox21_RDKit_desc	0.7466	7.13	0.7796	0.3592	0.8852	0.8772
VirusGO	0.0476	0.38	0.0476	0.9563	0.8163	0.9849
VirusPseAAC	0.4286	0.81	0.0714	0.7635	0.6692	0.8708
Water-quality	0.3113	10.18	0.3964	0.6505	0.7708	0.7373
Yahoo_Arts	0.5194	10.86	0.5500	0.4844	0.9278	0.9685
Yahoo_Business	0.1105	3.15	0.1730	0.8741	0.8523	0.9917
Yahoo_Computers	0.4040	6.28	0.4657	0.6107	0.8914	0.9824
Yahoo_Education	0.6135	9.37	0.6446	0.4718	0.8958	0.9871
Yahoo_Entertainment	0.4517	4.08	0.4928	0.6223	0.9835	0.9855
Yahoo_Health	0.3246	6.32	0.3234	0.6897	0.8273	0.9838
Yahoo_Recreation	0.4115	5.81	0.4293	0.6333	0.9825	0.9841
Yahoo_Reference	0.4396	4.43	0.4241	0.6406	0.8021	0.9869
Yahoo_Science	0.5537	12.39	0.5475	0.4831	0.9500	0.9772
Yahoo_Social	0.5033	8.12	0.2963	0.5489	0.8096	0.8800
yeast	0.2975	6.95	0.3965	0.6971	0.8512	0.8803
Yelp	0.2144	1.43	0.2356	0.8490	0.8769	0.8976

Table 24: Detailed results for STA(US+DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7036	2.74	0.2109	0.5193	0.9523	0.9535
3s-bbc1000	0.7778	2.25	0.6134	0.4894	0.7439	0.7383
3s-guardian1000	0.7419	2.68	0.5161	0.4758	0.6249	0.6499
3s-reuters1000	0.8667	2.03	0.5000	0.4481	0.7444	0.7124
bibtex	0.9730	37.68	0.4349	0.1618	0.9413	0.9532
birds	0.6667	7.56	0.4749	0.4427	0.7976	0.9013
bookmarks	0.8990	61.69	0.3585	0.1708	0.9048	0.9114
CAL500	0.5098	152.37	0.6884	0.2902	0.7275	0.8547
corel16k001	0.9906	90.60	0.5421	0.0593	0.7938	0.8052
Corel5k	0.8660	144.64	0.5929	0.1536	0.5909	0.9120
delicious	0.9845	808.62	0.4587	0.0446	0.8257	0.8303
emotions	0.4500	2.22	0.4125	0.6939	0.8636	0.8728
enron	0.8304	22.04	0.4124	0.3527	0.7248	0.8964
EukaryoteGO	0.2561	0.82	0.0401	0.8440	0.9966	0.9966
EukaryotePseAAC	0.9138	8.06	0.4649	0.2567	0.8255	0.8209
Eurlex-dc	0.8396	26.10	0.1765	0.2916	0.7487	0.9917
Eurlex-sm	0.6429	18.19	0.1320	0.4167	0.8124	0.9881
foodtruck	0.5854	5.83	0.3182	0.4703	0.6340	0.6966
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0786	0.18	0.0286	0.9530	0.8734	0.9991
GnegativePseAAC	0.4143	1.30	0.2839	0.7198	0.8039	0.9508
GpositivePseAAC	0.5577	0.92	0.3269	0.6683	0.7886	0.8425
HumanGO	0.2990	1.09	0.0815	0.8095	0.9857	0.9880
HumanPseAAC	0.9035	5.67	0.5242	0.2819	0.7136	0.7374
Image	0.4650	1.34	0.3308	0.6941	0.9010	0.9043
IMDB-ECC-F	0.9208	14.71	0.6214	0.1958	0.6891	0.6698
IMDB-F	0.9214	15.27	0.6414	0.1928	0.6711	0.6589
LLOG-F	0.9426	19.28	0.3774	0.2116	0.5312	0.9213
mediamill	0.9266	52.07	0.3861	0.2145	0.9170	0.9379
medical	0.2551	3.59	0.1199	0.8058	0.5493	0.9958
Music	0.5000	2.75	0.4481	0.6498	0.8628	0.8639
OHSUMED-F	0.7344	7.54	0.3331	0.4047	0.8800	0.8869
PlantGO	0.2755	0.65	0.1276	0.8350	0.9871	0.9882
PlantPseAAC	0.7857	3.41	0.5153	0.4320	0.7969	0.7998
rcv1subset1	0.9033	31.84	0.4057	0.2233	0.8873	0.9484
REUTERS-K500-EX2	0.9200	15.99	0.1995	0.2432	0.7392	0.9625
scene	0.3817	1.22	0.2541	0.7394	0.9415	0.9521
sider_CDK_ECFP4	0.4859	24.53	0.6361	0.6053	0.6767	0.6447
sider_MordredDesc	0.5000	24.56	0.6556	0.5900	0.6865	0.6422
sider_RDKit_desc	0.4577	24.82	0.6092	0.6056	0.6394	0.6282
SLASHDOT-F	0.7599	5.88	0.4193	0.4319	0.7105	0.9388
Stackex_chemistry	0.9181	62.28	0.3732	0.1449	0.8377	0.9162
Stackex_chess	0.8512	84.00	0.3952	0.2212	0.5227	0.9634
Stackex_coffee	0.6957	67.52	0.6685	0.2366	0.2536	0.9815
Stackex_cooking	0.9343	115.99	0.3006	0.1241	0.8552	0.9473
Stackex_cs	0.8463	77.66	0.2906	0.1768	0.8428	0.9497
Stackex_philosophy	0.9296	78.08	0.3472	0.1578	0.7007	0.9479
tmc2007-500	0.5752	6.14	0.2898	0.5287	0.9239	0.9167
tox21_CDK_ECFP4	0.7637	5.88	0.4993	0.4331	0.6977	0.7033
tox21_RDKit_desc	0.7534	6.18	0.5141	0.4139	0.7003	0.7006
VirusGO	0.0476	0.48	0.0635	0.9500	0.8171	0.9925
VirusPseAAC	0.6190	1.90	0.4048	0.5806	0.7154	0.8936
Water-quality	0.5283	9.84	0.5696	0.5873	0.7368	0.7456
Yahoo_Arts	0.8198	9.50	0.3981	0.3204	0.8105	0.8556
Yahoo_Business	0.3217	5.07	0.1122	0.6515	0.7749	0.9096
Yahoo_Computers	0.6313	7.42	0.2954	0.4579	0.7837	0.8835
Yahoo_Education	0.7531	8.15	0.4713	0.4049	0.8092	0.9033
Yahoo_Entertainment	0.6881	4.25	0.3910	0.4981	0.9099	0.9138
Yahoo_Health	0.5125	5.81	0.3266	0.5777	0.7686	0.9391
Yahoo_Recreation	0.7069	5.84	0.3690	0.4436	0.8846	0.8867
Yahoo_Reference	0.6924	5.09	0.3793	0.4698	0.7381	0.9327
Yahoo_Science	0.8087	10.98	0.4141	0.3382	0.8763	0.9073
Yahoo_Social	0.7880	7.18	0.2700	0.3981	0.8338	0.9299
yeast	0.4215	7.75	0.4773	0.6340	0.7843	0.8303
Yelp	0.1147	1.32	0.1314	0.8964	0.8794	0.8775

Table 25: Detailed results for STA(US+NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3948	1.72	0.0797	0.7278	0.8304	0.8232
3s-bbc1000	0.6111	2.28	0.3472	0.5678	0.5467	0.5571
3s-guardian1000	0.6774	2.10	0.3065	0.5438	0.5508	0.5998
3s-reuters1000	0.8667	2.60	0.3417	0.4028	0.5829	0.5418
bibtex	0.6797	48.05	0.2398	0.3117	0.7795	0.7666
birds	0.6667	8.44	0.3685	0.4456	0.6000	0.6705
bookmarks	0.8591	85.33	0.4284	0.1714	0.6987	0.6908
CAL500	0.6667	167.80	0.4329	0.2753	0.5239	0.6076
corel16k001	0.9710	75.73	0.4916	0.0775	0.7061	0.6660
Corel5k	0.9400	221.65	0.2824	0.0796	0.4272	0.6867
delicious	0.9391	812.31	0.5866	0.0428	0.6510	0.5994
emotions	0.4667	2.38	0.2569	0.6829	0.8009	0.7372
enron	0.6959	26.32	0.2575	0.3037	0.5757	0.7347
EukaryoteGO	0.2716	2.47	0.0879	0.7983	0.7983	0.9095
EukaryotePseAAC	0.8945	6.17	0.1377	0.2861	0.7138	0.7035
Eurlex-dc	0.8381	91.10	0.3742	0.2124	0.6095	0.8695
Eurlex-sm	0.7003	60.17	0.4103	0.2875	0.6272	0.8110
foodtruck	0.7561	5.93	0.2428	0.4242	0.5688	0.6439
genbase	0.1791	1.88	0.0933	0.8363	0.6095	0.9465
GnegativeGO	0.0929	0.49	0.0143	0.9240	0.7470	0.9242
GnegativePseAAC	0.2429	0.66	0.0643	0.8429	0.6310	0.8672
GpositivePseAAC	0.2885	0.58	0.1346	0.8141	0.8096	0.8290
HumanGO	0.2669	1.87	0.1212	0.7974	0.8137	0.8704
HumanPseAAC	0.7621	4.43	0.3804	0.4241	0.6435	0.6951
Image	0.3250	0.97	0.1350	0.7900	0.8034	0.8055
IMDB-ECC-F	0.9274	12.88	0.3160	0.2017	0.6130	0.5988
IMDB-F	0.9005	13.53	0.3401	0.2238	0.5976	0.5923
LLOG-F	0.7705	21.65	0.2016	0.3104	0.3331	0.6944
mediamill	0.9895	47.33	0.3760	0.0767	0.6940	0.6273
medical	0.4796	7.11	0.2086	0.5996	0.4084	0.8601
Music	0.3167	2.37	0.2009	0.7445	0.7941	0.7590
OHSUMED-F	0.6159	6.75	0.1481	0.4989	0.7436	0.7225
PlantGO	0.4490	2.08	0.2713	0.6802	0.6975	0.8062
PlantPseAAC	0.6327	3.17	0.3461	0.5336	0.7442	0.7463
rcv1subset1	0.5900	43.27	0.3048	0.3986	0.8337	0.8303
REUTERS-K500-EX2	0.8150	22.41	0.0809	0.2666	0.5853	0.8101
scene	0.3278	0.85	0.0695	0.7896	0.8770	0.8477
sider_CDK_ECFP4	0.6268	23.60	0.4984	0.5821	0.6791	0.6456
sider_MordredDesc	0.4859	23.32	0.3683	0.6391	0.6226	0.6551
sider_RDKit_desc	0.3451	23.95	0.4207	0.6307	0.5984	0.6008
SLASHDOT-F	0.5435	3.85	0.1808	0.5972	0.5915	0.8175
Stackex_chemistry	0.9167	73.69	0.3472	0.1226	0.5834	0.6883
Stackex_chess	0.8571	125.27	0.3472	0.1352	0.3250	0.6420
Stackex_coffee	1.0000	78.57	0.6232	0.0532	0.1444	0.5296
Stackex_cooking	0.9169	205.46	0.3484	0.0936	0.5772	0.6570
Stackex_cs	0.8290	112.66	0.2620	0.1512	0.6102	0.7482
Stackex_philosophy	0.9146	135.52	0.6476	0.0905	0.4362	0.5929
tmc2007-500	0.4748	5.89	0.1750	0.5895	0.8333	0.8407
tox21_CDK_ECFP4	0.5788	5.32	0.2900	0.5164	0.6347	0.6778
tox21_RDKit_desc	0.7705	5.91	0.2998	0.4018	0.6134	0.6385
VirusGO	0.1905	0.71	0.0476	0.8717	0.7071	0.9014
VirusPseAAC	0.2381	1.10	0.2143	0.8151	0.6657	0.8350
Water-quality	0.5660	10.02	0.4042	0.5711	0.6405	0.6426
Yahoo_Arts	0.5340	10.81	0.3242	0.5066	0.6398	0.6466
Yahoo_Business	0.1684	8.33	0.1623	0.7679	0.6278	0.8031
Yahoo_Computers	0.4554	12.68	0.5098	0.5280	0.6165	0.6979
Yahoo_Education	0.6201	14.29	0.5472	0.4468	0.5770	0.6750
Yahoo_Entertainment	0.6520	8.11	0.5424	0.4541	0.6889	0.6567
Yahoo_Health	0.4028	9.59	0.3414	0.6296	0.6255	0.7948
Yahoo_Recreation	0.5729	7.61	0.4376	0.5152	0.7121	0.7008
Yahoo_Reference	0.5641	7.86	0.3574	0.5336	0.6619	0.8205
Yahoo_Science	0.8009	16.91	0.5808	0.3082	0.7200	0.7200
Yahoo_Social	0.5338	11.63	0.4651	0.5305	0.7721	0.8293
yeast	0.6653	9.03	0.3202	0.5181	0.6292	0.6017
Yelp	0.3290	1.77	0.1358	0.7714	0.7385	0.7430

Table 26: Detailed results for STA(US+SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3746	1.22	0.0694	0.7525	0.9505	0.9496
3s-bbc1000	0.7222	2.39	0.4653	0.5049	0.6342	0.6064
3s-guardian1000	0.6129	1.97	0.3468	0.5871	0.5517	0.6465
3s-reuters1000	0.8333	2.33	0.5833	0.4331	0.5850	0.5367
bibtex	0.5730	54.90	0.3362	0.3947	0.8818	0.7983
birds	0.4872	6.74	0.1598	0.5226	0.7494	0.7610
bookmarks	0.7617	54.99	0.1962	0.3107	0.8570	0.8195
CAL500	0.6078	166.12	0.4656	0.3277	0.5099	0.6801
corel16k001	0.7974	82.52	0.3238	0.1833	0.7444	0.6919
Corel5k	0.7460	154.47	0.4400	0.2225	0.4828	0.8209
delicious	0.7651	825.11	0.2097	0.1551	0.7450	0.7535
emotions	0.3167	1.70	0.1556	0.8073	0.8427	0.8370
enron	0.2866	20.85	0.1828	0.5625	0.6185	0.8190
EukaryoteGO	0.2021	1.02	0.0497	0.8684	0.9841	0.9712
EukaryotePseAAC	0.6821	5.20	0.1098	0.4788	0.7509	0.7808
Eurlex-dc	0.5246	53.52	0.2201	0.4933	0.6847	0.8841
Eurlex-sm	0.3297	28.89	0.0970	0.6178	0.7497	0.9212
foodtruck	0.6341	2.98	0.2256	0.6145	0.6343	0.7939
genbase	0.0149	0.51	0.0075	0.9858	0.6667	0.9966
GnegativeGO	0.0357	0.13	0.0089	0.9779	0.8698	0.9956
GnegativePseAAC	0.2786	0.76	0.0714	0.8104	0.7523	0.9218
GpositivePseAAC	0.2500	0.37	0.0385	0.8574	0.9009	0.9284
HumanGO	0.2026	0.80	0.0606	0.8719	0.9732	0.9642
HumanPseAAC	0.6463	4.04	0.3690	0.5024	0.6845	0.7253
Image	0.3200	0.89	0.1125	0.8015	0.8613	0.8409
IMDB-ECC-F	0.8568	12.49	0.3483	0.2700	0.6475	0.6535
IMDB-F	0.8515	13.51	0.3474	0.2538	0.6412	0.6263
LLOG-F	0.6967	16.69	0.1694	0.3633	0.4183	0.8036
mediamill	0.3708	35.28	0.1252	0.5547	0.8687	0.8616
medical	0.1837	3.48	0.0740	0.8272	0.5363	0.9466
Music	0.2167	2.10	0.2227	0.7888	0.8221	0.8308
OHSUMED-F	0.4781	6.61	0.1688	0.5663	0.8057	0.7982
PlantGO	0.2653	1.26	0.0638	0.8030	0.9664	0.9097
PlantPseAAC	0.7653	4.08	0.2100	0.3968	0.7446	0.6895
rcv1subset1	0.4883	30.23	0.1871	0.4719	0.8452	0.8586
REUTERS-K500-EX2	0.6383	14.97	0.0728	0.4403	0.7108	0.8804
scene	0.1909	0.59	0.0902	0.8690	0.9324	0.9155
sider_CDK_ECFP4	0.3169	21.87	0.2731	0.7041	0.6113	0.7153
sider_MordredDesc	0.4366	23.00	0.3453	0.6686	0.6074	0.6517
sider_RDKit_desc	0.2746	22.95	0.2745	0.7197	0.6049	0.6869
SLASHDOT-F	0.5567	5.89	0.4020	0.5270	0.6657	0.7610
Stackex_chemistry	0.7701	60.17	0.2627	0.2472	0.7279	0.7756
Stackex_chess	0.6310	56.04	0.0965	0.3040	0.4335	0.8548
Stackex_coffee	0.7826	40.17	0.2856	0.2171	0.1786	0.7738
Stackex_cooking	0.7874	129.54	0.2465	0.1955	0.7295	0.7992
Stackex_cs	0.6753	76.77	0.1343	0.2859	0.7598	0.8498
Stackex_philosophy	0.7789	64.10	0.4005	0.2329	0.5748	0.8281
tmc2007-500	0.3395	3.91	0.0699	0.7151	0.9128	0.9068
tox21_CDK_ECFP4	0.5377	5.51	0.2424	0.5428	0.6750	0.6852
tox21_RDKit_desc	0.5240	4.83	0.1841	0.5598	0.6889	0.7148
VirusGO	0.0476	0.29	0.0000	0.9683	0.7678	0.9762
VirusPseAAC	0.3333	0.86	0.0119	0.7754	0.6255	0.8637
Water-quality	0.2736	9.36	0.3084	0.6820	0.7111	0.7182
Yahoo_Arts	0.5621	7.95	0.2702	0.5007	0.6761	0.7496
Yahoo_Business	0.4198	7.73	0.0859	0.6116	0.6677	0.8047
Yahoo_Computers	0.4731	8.58	0.1769	0.5811	0.6739	0.7750
Yahoo_Education	0.5952	8.67	0.3061	0.5040	0.6419	0.7773
Yahoo_Entertainment	0.4430	4.37	0.2570	0.6421	0.7550	0.8289
Yahoo_Health	0.3844	7.82	0.2333	0.6361	0.6283	0.8196
Yahoo_Recreation	0.5573	5.66	0.2545	0.5396	0.7483	0.7774
Yahoo_Reference	0.5006	6.14	0.2461	0.5739	0.5926	0.8189
Yahoo_Science	0.6019	9.50	0.2683	0.4792	0.6803	0.7962
Yahoo_Social	0.4092	8.42	0.1377	0.6328	0.6644	0.8042
yeast	0.3140	7.64	0.2653	0.6812	0.7095	0.7576
Yelp	0.2453	1.51	0.1063	0.8320	0.8174	0.8183

Table 27: Detailed results for STA(US+RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4990	2.09	0.1370	0.6624	0.9566	0.9412
3s-bbc1000	0.6667	2.47	0.4699	0.5248	0.6232	0.6247
3s-guardian1000	0.4839	2.10	0.4032	0.6188	0.6778	0.6839
3s-reuters1000	0.7333	2.27	0.5250	0.4872	0.7137	0.6763
bibtex	0.7365	32.44	0.2881	0.3557	0.9126	0.9159
birds	0.4872	7.03	0.3778	0.5299	0.7457	0.8246
bookmarks	0.7617	54.99	0.1962	0.3107	0.8570	0.8195
CAL500	0.6863	148.16	0.5329	0.2738	0.5552	0.7226
corel16k001	0.9739	69.46	0.3464	0.0887	0.7454	0.7774
Corel5k	0.8980	123.77	0.5627	0.1726	0.5425	0.8863
delicious	0.9596	748.35	0.3028	0.0754	0.7876	0.8116
emotions	0.3833	1.95	0.2944	0.7481	0.8256	0.8143
enron	0.4327	18.11	0.1871	0.5411	0.6835	0.8772
EukaryoteGO	0.2033	0.60	0.0183	0.8824	0.9963	0.9972
EukaryotePseAAC	0.7915	5.53	0.1778	0.3825	0.7714	0.8524
Eurlex-dc	0.4847	14.17	0.0642	0.6454	0.7434	0.9878
Eurlex-sm	0.3375	12.50	0.0728	0.6951	0.8061	0.9827
foodtruck	0.5610	4.49	0.2043	0.5297	0.6314	0.7018
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0357	0.11	0.0143	0.9792	0.8739	0.9993
GnegativePseAAC	0.3286	1.08	0.1214	0.7673	0.7578	0.9068
GpositivePseAAC	0.3846	0.73	0.1731	0.7612	0.8069	0.8107
HumanGO	0.2669	0.86	0.0546	0.8378	0.9814	0.9862
HumanPseAAC	0.7717	4.47	0.2755	0.3946	0.7115	0.7318
Image	0.4800	1.17	0.2867	0.7029	0.7978	0.7841
IMDB-ECC-F	0.7514	10.91	0.2426	0.3547	0.8449	0.7750
IMDB-F	0.8344	10.94	0.2477	0.3136	0.8157	0.7625
LLOG-F	0.9344	19.41	0.3298	0.2195	0.4774	0.8600
mediamill	0.9349	50.43	0.2434	0.1714	0.8814	0.8329
medical	0.2041	1.92	0.0459	0.8523	0.5457	0.9932
Music	0.4833	2.22	0.2931	0.7001	0.8065	0.8072
OHSUMED-F	0.6181	6.43	0.2128	0.4886	0.8958	0.8607
PlantGO	0.2347	0.49	0.0408	0.8673	0.9850	0.9854
PlantPseAAC	0.7551	3.16	0.2398	0.4569	0.6528	0.7584
rcv1subset1	0.7567	19.42	0.2294	0.4189	0.8652	0.9364
REUTERS-K500-EX2	0.7900	10.43	0.1356	0.3932	0.7332	0.9550
scene	0.3568	0.76	0.1504	0.7839	0.8998	0.8911
sider_CDK_ECFP4	0.2887	24.40	0.5384	0.5887	0.6812	0.5036
sider_MordredDesc	0.4366	23.99	0.5327	0.5800	0.5945	0.5307
sider_RDKit_desc	0.4437	23.48	0.4499	0.6157	0.5894	0.5688
SLASHDOT-F	0.5699	4.07	0.1979	0.5721	0.6935	0.9150
Stackex_chemistry	0.8319	46.94	0.1995	0.2352	0.7837	0.8734
Stackex_chess	0.7262	69.48	0.2906	0.3339	0.4968	0.9348
Stackex_coffee	0.6087	66.39	0.5377	0.2894	0.2466	0.9435
Stackex_cooking	0.8242	116.53	0.2361	0.2295	0.7978	0.8961
Stackex_cs	0.8312	62.74	0.2825	0.2752	0.8054	0.9226
Stackex_philosophy	0.7814	76.05	0.3303	0.2624	0.6486	0.8966
tmc2007-500	0.4339	4.44	0.1666	0.6521	0.9439	0.9462
tox21_CDK_ECFP4	0.7295	5.77	0.2006	0.4176	0.6670	0.6534
tox21_RDKit_desc	0.6781	5.81	0.1539	0.4288	0.5902	0.6074
VirusGO	0.0476	0.29	0.0476	0.9683	0.8197	0.9881
VirusPseAAC	0.3333	1.10	0.1548	0.7619	0.6458	0.8577
Water-quality	0.5094	9.87	0.3919	0.5849	0.6109	0.6158
Yahoo_Arts	0.7677	10.68	0.3594	0.3557	0.8345	0.7790
Yahoo_Business	0.1604	4.26	0.1119	0.7755	0.7781	0.9166
Yahoo_Computers	0.4402	7.52	0.4122	0.5769	0.7996	0.8869
Yahoo_Education	0.7140	11.01	0.5059	0.3720	0.8061	0.8478
Yahoo_Entertainment	0.5067	4.33	0.4360	0.5838	0.9234	0.9051
Yahoo_Health	0.3800	5.30	0.1952	0.6721	0.7662	0.9357
Yahoo_Recreation	0.5456	5.75	0.3032	0.5528	0.9106	0.8830
Yahoo_Reference	0.6077	5.12	0.3539	0.5066	0.7281	0.8839
Yahoo_Science	0.6065	11.19	0.3532	0.4591	0.8665	0.8640
Yahoo_Social	0.5033	8.12	0.2963	0.5489	0.8096	0.8800
yeast	0.7107	10.42	0.4724	0.4203	0.6056	0.5115
Yelp	0.2463	1.48	0.2590	0.8300	0.8579	0.8728

Table 28: Detailed results for CC(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4326	3.04	0.2699	0.6692	0.9685	0.9653
3s-bbc1000	0.7222	2.56	0.3935	0.4872	0.7443	0.6880
3s-guardian1000	0.7742	3.00	0.4194	0.4280	0.7025	0.6097
3s-reuters1000	0.7000	2.67	0.5667	0.4617	0.7355	0.6879
bibtex	0.5257	75.36	0.5691	0.3897	0.9905	0.9917
birds	0.4872	6.92	0.5017	0.5404	0.8608	0.9578
bookmarks	0.6657	93.71	0.6136	0.3181	0.9657	0.9678
CAL500	0.4902	151.61	0.6720	0.3399	0.7722	0.9018
corel16k001	0.8366	105.04	0.7924	0.1549	0.9793	0.9798
Corel5k	0.7360	168.41	0.8564	0.1821	0.6736	0.9945
delicious	0.6470	919.33	0.8862	0.0867	0.9844	0.9890
emotions	0.4167	2.32	0.3639	0.7041	0.8611	0.8666
enron	0.3392	26.18	0.4472	0.4920	0.7963	0.9523
EukaryoteGO	0.2008	1.31	0.0972	0.8588	0.9956	0.9968
EukaryotePseAAC	0.7027	6.33	0.5196	0.4224	0.9389	0.9429
Eurlex-dc	0.3135	57.31	0.2853	0.6795	0.7590	0.9994
Eurlex-sm	0.2140	40.67	0.3457	0.6609	0.8287	0.9981
foodtruck	0.3171	4.63	0.4114	0.6699	0.7849	0.8797
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.09	0.0143	0.9863	0.8747	0.9996
GnegativePseAAC	0.3929	1.03	0.2411	0.7435	0.8464	0.9486
GpositivePseAAC	0.4808	0.83	0.1731	0.7099	0.8031	0.7934
HumanGO	0.2669	1.24	0.1407	0.8190	0.9861	0.9911
HumanPseAAC	0.6785	4.14	0.4817	0.4732	0.9260	0.9179
Image	0.4300	1.32	0.3092	0.7078	0.9260	0.9294
IMDB-ECC-F	0.7575	13.61	0.5740	0.3134	0.8585	0.8342
IMDB-F	0.7510	13.85	0.5719	0.3166	0.8646	0.8384
LLOG-F	0.7705	28.76	0.6783	0.2770	0.5823	0.9808
mediamill	0.4083	54.36	0.3970	0.5066	0.9808	0.9873
medical	0.2449	5.06	0.1327	0.7923	0.5508	0.9959
Music	0.5667	2.80	0.4366	0.6261	0.8565	0.8638
OHSUMED-F	0.4896	8.50	0.4453	0.5354	0.9508	0.9572
PlantGO	0.2857	0.72	0.0748	0.8314	0.9889	0.9855
PlantPseAAC	0.8163	4.04	0.6752	0.3714	0.8887	0.8949
rcv1subset1	0.5667	56.14	0.6914	0.3237	0.9317	0.9901
REUTERS-K500-EX2	0.5833	27.92	0.4375	0.4771	0.7715	0.9866
scene	0.3402	1.26	0.2562	0.7544	0.9556	0.9601
sider_CDK_ECFP4	0.3310	24.73	0.6695	0.6651	0.8713	0.8891
sider_MordredDesc	0.3944	24.58	0.6399	0.6641	0.8534	0.8839
sider_RDKit_desc	0.3873	24.54	0.6194	0.6763	0.8333	0.8713
SLASHDOT-F	0.5066	4.92	0.3091	0.5946	0.7450	0.9581
Stackex_chemistry	0.7615	97.31	0.7530	0.2075	0.9068	0.9873
Stackex_chess	0.7024	131.84	0.7162	0.2333	0.5434	0.9915
Stackex_coffee	0.6522	66.13	0.6141	0.2909	0.2558	0.9854
Stackex_cooking	0.6213	203.65	0.6477	0.2902	0.9197	0.9950
Stackex_cs	0.6104	151.89	0.6739	0.2862	0.8909	0.9934
Stackex_philosophy	0.6935	126.81	0.6789	0.2631	0.7421	0.9910
tmc2007-500	0.3899	5.87	0.3378	0.6434	0.9557	0.9621
tox21_CDK_ECFP4	0.5342	5.61	0.4868	0.5218	0.8715	0.8660
tox21_RDKit_desc	0.6199	5.84	0.5352	0.4841	0.8758	0.8838
VirusGO	0.0476	0.43	0.0794	0.9526	0.8251	0.9925
VirusPseAAC	0.4286	1.52	0.2619	0.6992	0.7315	0.8776
Water-quality	0.4528	9.74	0.4767	0.6226	0.7292	0.7466
Yahoo_Arts	0.5394	9.62	0.4317	0.5083	0.9191	0.9497
Yahoo_Business	0.1631	4.11	0.1868	0.8017	0.8414	0.9789
Yahoo_Computers	0.4442	6.02	0.3784	0.6090	0.8757	0.9671
Yahoo_Education	0.5536	8.02	0.4358	0.5321	0.8771	0.9662
Yahoo_Entertainment	0.4415	4.29	0.3888	0.6211	0.9615	0.9531
Yahoo_Health	0.3312	9.20	0.3883	0.6315	0.8249	0.9768
Yahoo_Recreation	0.4770	5.87	0.3550	0.5925	0.9622	0.9479
Yahoo_Reference	0.4894	4.51	0.3751	0.6047	0.7913	0.9708
Yahoo_Science	0.5583	11.76	0.4844	0.4959	0.9549	0.9776
Yahoo_Social	0.3787	6.33	0.3037	0.6614	0.9077	0.9783
yeast	0.4504	7.47	0.4635	0.6427	0.8539	0.8875
Yelp	0.1157	1.35	0.1671	0.8911	0.8723	0.8803

Table 29: Detailed results for CC(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4311	1.84	0.1307	0.7127	0.8294	0.8277
3s-bbc1000	0.5833	2.17	0.3079	0.5872	0.5177	0.5192
3s-guardian1000	0.7097	2.68	0.1210	0.4728	0.5071	0.5268
3s-reuters1000	0.7000	2.00	0.2333	0.5194	0.5625	0.5327
bibtex	0.6338	42.71	0.0498	0.3674	0.7505	0.7911
birds	0.6154	8.18	0.3808	0.4746	0.6085	0.6936
bookmarks	0.8488	83.61	0.2989	0.3037	0.7913	0.7894
CAL500	0.6275	163.73	0.3526	0.3041	0.5379	0.5957
corel16k001	0.7705	82.47	0.0049	0.2246	0.5630	0.6289
Corel5k	0.6940	302.94	0.0794	0.2043	0.3654	0.5461
delicious	0.9155	893.70	0.3724	0.0478	0.8430	0.7436
emotions	0.3333	2.27	0.1625	0.7334	0.7909	0.7534
enron	0.5029	29.30	0.2080	0.4641	0.5827	0.7598
EukaryoteGO	0.2317	1.32	0.0118	0.8397	0.6071	0.7192
EukaryotePseAAC	0.8777	5.33	0.1134	0.3226	0.6630	0.7232
Eurlex-dc	0.5913	88.03	0.2675	0.4400	0.5420	0.8402
Eurlex-sm	0.5261	54.28	0.3289	0.4463	0.6050	0.8424
foodtruck	0.4146	4.71	0.2885	0.6362	0.5387	0.7090
genbase	0.0000	0.22	0.0000	0.9975	0.5444	0.8535
GnegativeGO	0.0571	0.25	0.0143	0.9602	0.5915	0.8517
GnegativePseAAC	0.2643	0.72	0.1214	0.8265	0.6422	0.8686
GpositivePseAAC	0.2885	0.58	0.0769	0.8141	0.8041	0.8363
HumanGO	0.2122	1.11	0.0423	0.8499	0.6479	0.6557
HumanPseAAC	0.7492	4.10	0.2907	0.4440	0.5810	0.7001
Image	0.3200	0.99	0.1350	0.7893	0.7902	0.7933
IMDB-ECC-F	0.9665	14.31	0.3381	0.2948	0.6063	0.6282
IMDB-F	0.9600	14.88	0.3494	0.2552	0.6080	0.6330
LLOG-F	0.8197	27.81	0.0644	0.2742	0.3209	0.6024
mediamill	0.9905	49.05	0.2206	0.0911	0.6705	0.6743
medical	0.2245	1.76	0.0714	0.8305	0.3679	0.7407
Music	0.3667	2.57	0.1870	0.7240	0.7804	0.7285
OHSUMED-F	0.5068	5.84	0.0548	0.5741	0.7223	0.7490
PlantGO	0.4184	1.31	0.0408	0.7345	0.6065	0.6758
PlantPseAAC	0.6224	3.26	0.2968	0.5343	0.7060	0.7441
rcv1subset1	0.5100	27.39	0.1133	0.4862	0.5406	0.5585
REUTERS-K500-EX2	0.5733	25.36	0.0177	0.4959	0.5178	0.7063
scene	0.3568	0.86	0.0788	0.7765	0.8784	0.8393
sider_CDK_ECFP4	0.4296	23.42	0.3174	0.6287	0.6678	0.6876
sider_MordredDesc	0.4507	23.39	0.3180	0.6448	0.6235	0.6630
sider_RDKit_desc	0.4577	23.62	0.3744	0.6378	0.6055	0.6389
SLASHDOT-F	0.3509	3.46	0.0132	0.7086	0.5384	0.7659
Stackex_chemistry	0.6753	76.63	0.0343	0.2834	0.4977	0.6211
Stackex_chess	0.6012	111.99	0.0479	0.2765	0.3026	0.5919
Stackex_coffee	0.8261	44.96	0.0048	0.2352	0.1484	0.5808
Stackex_cooking	0.6406	193.30	0.0397	0.2789	0.4988	0.6094
Stackex_cs	0.5931	123.56	0.0580	0.3453	0.5520	0.7224
Stackex_philosophy	0.6131	110.01	0.0473	0.2999	0.4051	0.6065
tmc2007-500	0.3913	5.78	0.1307	0.6732	0.8235	0.8390
tox21_CDK_ECFP4	0.5651	4.85	0.1020	0.5410	0.6165	0.6784
tox21_RDKit_desc	0.6986	5.39	0.2490	0.4595	0.6097	0.6604
VirusGO	0.1429	0.62	0.0714	0.9011	0.6839	0.8895
VirusPseAAC	0.2857	1.10	0.2976	0.7833	0.6710	0.8214
Water-quality	0.4434	9.97	0.3296	0.6067	0.6414	0.6663
Yahoo_Arts	0.5394	9.30	0.2592	0.5078	0.5550	0.6089
Yahoo_Business	0.1444	5.26	0.1449	0.8256	0.5742	0.8219
Yahoo_Computers	0.4594	10.27	0.4816	0.5530	0.5552	0.7281
Yahoo_Education	0.6376	10.89	0.5234	0.4523	0.5022	0.6245
Yahoo_Entertainment	0.6520	7.27	0.4068	0.4710	0.5870	0.6736
Yahoo_Health	0.3996	7.39	0.2880	0.6621	0.5364	0.7665
Yahoo_Recreation	0.5464	6.12	0.3224	0.5552	0.6364	0.7056
Yahoo_Reference	0.5654	5.71	0.2988	0.5717	0.4907	0.7538
Yahoo_Science	0.6672	13.35	0.4701	0.4142	0.5528	0.5771
Yahoo_Social	0.5363	9.81	0.3603	0.5439	0.5152	0.7661
yeast	0.4628	8.23	0.3084	0.6341	0.6320	0.7005
Yelp	0.2403	1.79	0.1490	0.8041	0.7119	0.7552

Table 30: Detailed results for CC(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3098	1.22	0.0391	0.7911	0.9580	0.9528
3s-bbc1000	0.6667	2.39	0.6111	0.5213	0.6653	0.6399
3s-guardian1000	0.5806	2.23	0.3226	0.5798	0.5725	0.5944
3s-reuters1000	0.8000	1.83	0.6833	0.4925	0.6755	0.6480
bibtex	0.5041	34.79	0.1630	0.4854	0.8613	0.8759
birds	0.3590	4.51	0.1009	0.6744	0.7706	0.8732
bookmarks	0.6106	50.82	0.2229	0.4174	0.8043	0.8048
CAL500	0.8627	167.76	0.4493	0.2811	0.4883	0.5602
corel16k001	0.7662	81.56	0.2522	0.2422	0.6170	0.7188
Corel5k	0.9920	280.22	0.1530	0.0912	0.4116	0.5651
delicious	0.7545	926.70	0.5768	0.1223	0.6651	0.5292
emotions	0.3000	1.75	0.0944	0.8035	0.8459	0.8370
enron	0.3567	28.98	0.2166	0.5380	0.5808	0.7562
EukaryoteGO	0.4337	1.06	0.0122	0.7437	0.9798	0.9640
EukaryotePseAAC	0.5907	4.77	0.1797	0.5496	0.7161	0.8048
Eurlex-dc	0.8365	38.50	0.0412	0.2492	0.7054	0.9197
Eurlex-sm	0.8708	34.62	0.1232	0.3214	0.7844	0.9053
foodtruck	0.2439	4.68	0.3806	0.7227	0.5685	0.7040
genbase	0.0000	0.34	0.0000	0.9939	0.6667	0.9969
GnegativeGO	0.2500	0.42	0.0321	0.8592	0.8601	0.9407
GnegativePseAAC	0.3929	0.85	0.2482	0.7648	0.7385	0.9158
GpositivePseAAC	0.2115	0.31	0.0192	0.8782	0.9329	0.9340
HumanGO	0.4212	1.10	0.0219	0.7486	0.9528	0.9311
HumanPseAAC	0.5659	3.80	0.2088	0.5647	0.6542	0.7482
Image	0.4450	1.00	0.0746	0.7363	0.8283	0.7974
IMDB-ECC-F	0.6385	12.68	0.3427	0.3770	0.5787	0.6400
IMDB-F	0.6361	13.66	0.3235	0.3827	0.5804	0.6236
LLOG-F	0.9918	28.75	0.2583	0.2077	0.4304	0.6804
mediamill	0.6157	62.22	0.3233	0.4693	0.7358	0.6413
medical	0.1429	2.90	0.0179	0.8643	0.5289	0.9539
Music	0.2167	1.95	0.1208	0.8206	0.8493	0.8454
OHSUMED-F	0.3805	5.17	0.1168	0.6580	0.8270	0.8551
PlantGO	0.2347	0.62	0.0102	0.8597	0.9644	0.9582
PlantPseAAC	0.6531	3.14	0.2109	0.5077	0.7295	0.7555
rcv1subset1	0.4133	19.66	0.0860	0.5811	0.8257	0.9171
REUTERS-K500-EX2	0.9550	19.35	0.2566	0.1896	0.6829	0.8402
scene	0.2573	0.51	0.0737	0.8468	0.9277	0.9190
sider_CDK_ECFP4	0.2606	22.07	0.2289	0.7991	0.5258	0.7307
sider_MordredDesc	0.3028	22.35	0.2594	0.7864	0.5660	0.7345
sider_RDKit_desc	0.2113	22.18	0.2290	0.8003	0.5942	0.7417
SLASHDOT-F	1.0000	4.94	0.0849	0.3092	0.6436	0.7861
Stackex_chemistry	0.6552	78.99	0.2174	0.2910	0.6859	0.6957
Stackex_chess	0.6488	109.60	0.2668	0.3065	0.4216	0.7148
Stackex_coffee	0.8261	43.78	0.1860	0.1932	0.1636	0.7557
Stackex_cooking	0.4696	134.23	0.1469	0.4166	0.7097	0.8012
Stackex_cs	0.4567	105.81	0.1929	0.4150	0.6997	0.8005
Stackex_philosophy	0.5226	108.04	0.2660	0.3945	0.5542	0.7265
tmc2007-500	0.3927	4.11	0.0959	0.7104	0.9016	0.9070
tox21_CDK_ECFP4	0.5377	4.61	0.1170	0.5720	0.6655	0.7287
tox21_RDKit_desc	0.5068	4.65	0.0961	0.5731	0.6592	0.7253
VirusGO	0.0476	0.48	0.0476	0.9524	0.7610	0.9529
VirusPseAAC	0.4286	1.24	0.0952	0.7040	0.6459	0.8328
Water-quality	0.3208	9.55	0.3056	0.6641	0.7128	0.7093
Yahoo_Arts	0.4619	6.60	0.1685	0.6126	0.7576	0.7992
Yahoo_Business	0.1319	4.42	0.1371	0.8571	0.7311	0.8999
Yahoo_Computers	0.3992	7.09	0.2771	0.6648	0.7318	0.8151
Yahoo_Education	0.4497	7.23	0.1379	0.6212	0.7145	0.8175
Yahoo_Entertainment	0.4030	4.22	0.1369	0.6842	0.7963	0.8343
Yahoo_Health	0.5516	6.81	0.1575	0.6024	0.6863	0.8385
Yahoo_Recreation	0.3889	3.93	0.1618	0.6878	0.8243	0.8384
Yahoo_Reference	0.3960	5.91	0.1125	0.6823	0.6577	0.8256
Yahoo_Science	0.4184	7.83	0.1363	0.6399	0.7787	0.8169
Yahoo_Social	0.4167	5.86	0.0908	0.6869	0.7362	0.8630
yeast	0.2603	10.64	0.2694	0.6148	0.6239	0.6253
Yelp	0.2074	1.41	0.1126	0.8556	0.7875	0.8372

Table 31: Detailed results for CC(US+DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7109	2.82	0.1894	0.5042	0.9490	0.9448
3s-bbc1000	0.7500	2.42	0.5486	0.4745	0.6485	0.6585
3s-guardian1000	0.7419	2.68	0.5968	0.4677	0.6268	0.5882
3s-reuters1000	0.8333	2.33	0.5583	0.4389	0.6441	0.6478
bibtex	0.9730	41.81	0.5313	0.1575	0.9413	0.9498
birds	0.5897	7.38	0.4487	0.5008	0.8227	0.9128
bookmarks	0.8919	66.79	0.3947	0.1713	0.9021	0.9034
CAL500	0.5882	150.82	0.6635	0.2767	0.6839	0.7946
corel16k001	0.9927	89.54	0.5607	0.0646	0.8311	0.8377
Corel5k	0.8460	164.84	0.6864	0.1479	0.6255	0.9379
delicious	0.9838	913.32	0.7737	0.0364	0.9199	0.8985
emotions	0.4333	2.58	0.4833	0.6685	0.8360	0.8363
enron	0.8480	24.43	0.4676	0.3037	0.7472	0.8700
EukaryoteGO	0.2278	0.69	0.0232	0.8627	0.9970	0.9977
EukaryotePseAAC	0.8932	6.92	0.3122	0.2832	0.7627	0.8075
Eurlex-dc	0.8505	25.37	0.1197	0.2906	0.7494	0.9916
Eurlex-sm	0.6150	29.36	0.2010	0.3938	0.8132	0.9813
foodtruck	0.4878	4.68	0.2898	0.5895	0.6857	0.7566
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0429	0.16	0.0214	0.9717	0.8724	0.9988
GnegativePseAAC	0.3857	1.06	0.1875	0.7426	0.7834	0.9119
GpositivePseAAC	0.4231	0.79	0.3269	0.7340	0.7024	0.7705
HumanGO	0.3055	1.11	0.0857	0.8074	0.9904	0.9918
HumanPseAAC	0.8746	5.15	0.4934	0.3106	0.6909	0.7539
Image	0.5400	1.57	0.4104	0.6405	0.8601	0.8532
IMDB-ECC-F	0.9257	15.11	0.5640	0.1902	0.5638	0.5389
IMDB-F	0.9235	15.53	0.5660	0.1937	0.5621	0.5282
LLOG-F	0.9344	21.28	0.4469	0.1961	0.5214	0.9076
mediamill	0.9577	58.90	0.4482	0.1278	0.8394	0.8548
medical	0.2245	3.62	0.0978	0.8257	0.5495	0.9960
Music	0.4333	2.65	0.4208	0.6810	0.8741	0.8627
OHSUMED-F	0.7301	7.51	0.2997	0.4082	0.8608	0.8760
PlantGO	0.3061	0.61	0.0612	0.8230	0.9912	0.9842
PlantPseAAC	0.8367	3.72	0.5332	0.3923	0.7842	0.7946
rcv1subset1	0.9017	49.06	0.5706	0.1965	0.9062	0.9411
REUTERS-K500-EX2	0.8900	16.30	0.1933	0.2780	0.7440	0.9626
scene	0.4564	1.53	0.3693	0.6780	0.9311	0.9238
sider_CDK_ECFP4	0.5141	24.97	0.8137	0.5765	0.8626	0.8497
sider_MordredDesc	0.4437	24.94	0.8050	0.5724	0.8624	0.8171
sider_RDKit_desc	0.5352	24.99	0.8425	0.5583	0.8573	0.8433
SLASHDOT-F	0.7863	4.94	0.5302	0.4096	0.7011	0.9333
Stackex_chemistry	0.9181	58.97	0.3674	0.1409	0.8466	0.9254
Stackex_chess	0.8750	87.71	0.3851	0.2131	0.5256	0.9666
Stackex_coffee	0.8261	68.26	0.7382	0.1756	0.2545	0.9781
Stackex_cooking	0.9469	112.60	0.3253	0.1231	0.8643	0.9551
Stackex_cs	0.8301	83.47	0.3091	0.1876	0.8489	0.9550
Stackex_philosophy	0.9422	82.76	0.3923	0.1590	0.7031	0.9502
tmc2007-500	0.5696	5.79	0.2827	0.5354	0.9273	0.9172
tox21_CDK_ECFP4	0.7192	5.81	0.4531	0.4462	0.7306	0.7328
tox21_RDKit_desc	0.7637	6.25	0.5184	0.4121	0.7093	0.7225
VirusGO	0.0476	0.33	0.0476	0.9643	0.8333	0.9980
VirusPseAAC	0.4762	1.43	0.2381	0.6698	0.7248	0.9396
Water-quality	0.6038	10.07	0.5643	0.5416	0.6487	0.6498
Yahoo_Arts	0.8104	9.80	0.4075	0.3350	0.8450	0.8674
Yahoo_Business	0.3476	6.84	0.1517	0.6036	0.8064	0.8626
Yahoo_Computers	0.6418	7.71	0.2935	0.4456	0.8345	0.8715
Yahoo_Education	0.7431	8.33	0.4646	0.4045	0.8094	0.9027
Yahoo_Entertainment	0.6905	4.85	0.4596	0.4903	0.9295	0.8955
Yahoo_Health	0.4832	9.37	0.4039	0.5486	0.7958	0.9265
Yahoo_Recreation	0.7101	6.22	0.3690	0.4416	0.8953	0.8814
Yahoo_Reference	0.6737	5.17	0.3387	0.4680	0.7491	0.9199
Yahoo_Science	0.7900	10.64	0.4032	0.3542	0.8927	0.9160
Yahoo_Social	0.7954	6.99	0.2831	0.3980	0.8677	0.9405
yeast	0.4669	8.79	0.5288	0.5778	0.7225	0.7414
Yelp	0.1476	1.40	0.1571	0.8742	0.8560	0.8366

Table 32: Detailed results for CC(US+NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4819	2.02	0.2114	0.6723	0.8372	0.8349
3s-bbc1000	0.7222	2.75	0.3958	0.4697	0.5047	0.5194
3s-guardian1000	0.8065	2.42	0.1774	0.4731	0.5796	0.5912
3s-reuters1000	0.8000	2.30	0.3500	0.4439	0.5981	0.5570
bibtex	0.7757	42.33	0.4561	0.2500	0.8072	0.8094
birds	0.6410	9.49	0.3372	0.4343	0.6140	0.6705
bookmarks	0.8098	83.56	0.2495	0.2187	0.7244	0.7046
CAL500	0.6275	164.14	0.3968	0.2998	0.5380	0.6006
corel16k001	0.9768	90.70	0.3265	0.0671	0.6411	0.6124
Corel5k	0.8300	284.14	0.4063	0.1658	0.4030	0.5723
delicious	0.9640	874.61	0.6566	0.0376	0.8216	0.6996
emotions	0.3667	2.22	0.2056	0.7287	0.7961	0.7621
enron	0.5088	30.22	0.3026	0.4270	0.5793	0.7304
EukaryoteGO	0.2999	4.62	0.1774	0.7367	0.7904	0.8089
EukaryotePseAAC	0.8417	6.85	0.1126	0.3155	0.6876	0.6736
Eurlex-dc	0.6368	83.11	0.2793	0.3999	0.5757	0.8614
Eurlex-sm	0.5674	60.55	0.3432	0.4072	0.6367	0.8250
foodtruck	0.6829	6.63	0.1718	0.4363	0.5241	0.5776
genbase	0.1343	1.96	0.0299	0.8615	0.5643	0.9424
GnegativeGO	0.0786	0.37	0.0232	0.9398	0.6900	0.9399
GnegativePseAAC	0.2643	0.89	0.0982	0.8156	0.6469	0.8645
GpositivePseAAC	0.3269	0.54	0.0769	0.8061	0.8182	0.8478
HumanGO	0.2476	1.92	0.1215	0.8062	0.8395	0.8826
HumanPseAAC	0.7717	4.75	0.2952	0.4092	0.6082	0.6760
Image	0.3250	1.04	0.1562	0.7825	0.7909	0.7932
IMDB-ECC-F	0.8931	14.24	0.3002	0.2357	0.5830	0.6126
IMDB-F	0.8964	14.86	0.3019	0.2261	0.5673	0.6017
LLOG-F	0.7951	30.31	0.2502	0.2736	0.3304	0.6524
mediamill	0.9891	49.60	0.4404	0.0840	0.6716	0.6627
medical	0.3571	4.87	0.0813	0.6942	0.3935	0.8677
Music	0.3333	2.58	0.2120	0.7288	0.7734	0.7366
OHSUMED-F	0.6001	6.95	0.1412	0.4800	0.7537	0.7310
PlantGO	0.4592	2.64	0.3571	0.6477	0.7175	0.7930
PlantPseAAC	0.6837	3.45	0.4048	0.5120	0.7248	0.7242
rcv1subset1	0.5783	48.52	0.3329	0.3853	0.8201	0.8033
REUTERS-K500-EX2	0.7917	24.32	0.0745	0.3374	0.6014	0.8080
scene	0.3527	0.78	0.0664	0.7848	0.8773	0.8511
sider_CDK_ECFP4	0.5634	24.27	0.4371	0.5637	0.6747	0.6433
sider_MordredDesc	0.4789	23.84	0.3792	0.6277	0.6198	0.6383
sider_RDKit_desc	0.3521	24.11	0.3980	0.6318	0.5776	0.5940
SLASHDOT-F	0.5330	4.55	0.2960	0.5908	0.5920	0.8164
Stackex_chemistry	0.8707	75.07	0.0972	0.1492	0.5931	0.7197
Stackex_chess	0.7857	115.56	0.0944	0.2168	0.3146	0.6750
Stackex_coffee	0.9130	62.17	0.1250	0.1716	0.1485	0.5824
Stackex_cooking	0.8899	184.20	0.1743	0.1298	0.5960	0.7294
Stackex_cs	0.7500	108.83	0.1114	0.2231	0.6572	0.7987
Stackex_philosophy	0.7613	113.69	0.1338	0.2370	0.4439	0.7083
tmc2007-500	0.4591	6.19	0.1631	0.6232	0.8402	0.8377
tox21_CDK_ECFP4	0.5993	5.05	0.1478	0.5232	0.6430	0.6823
tox21_RDKit_desc	0.7055	5.66	0.2755	0.4410	0.6099	0.6637
VirusGO	0.1905	0.62	0.0476	0.8746	0.6600	0.8713
VirusPseAAC	0.2381	0.81	0.2024	0.8286	0.7091	0.8544
Water-quality	0.4434	10.10	0.4233	0.5922	0.6490	0.6548
Yahoo_Arts	0.6382	12.81	0.3113	0.4239	0.6335	0.5791
Yahoo_Business	0.1979	7.67	0.1562	0.7691	0.6220	0.8288
Yahoo_Computers	0.4635	12.91	0.5103	0.5207	0.6263	0.7007
Yahoo_Education	0.7057	14.25	0.6131	0.4081	0.5719	0.6674
Yahoo_Entertainment	0.6496	8.23	0.5329	0.4537	0.6765	0.6465
Yahoo_Health	0.4224	9.78	0.2788	0.6240	0.6288	0.7825
Yahoo_Recreation	0.5963	7.46	0.4986	0.5043	0.7289	0.7310
Yahoo_Reference	0.5641	7.86	0.3423	0.5329	0.6485	0.8313
Yahoo_Science	0.8025	17.46	0.5987	0.3007	0.7234	0.7104
Yahoo_Social	0.5355	12.66	0.4640	0.5199	0.7697	0.7983
yeast	0.5826	8.62	0.2954	0.5598	0.6555	0.6474
Yelp	0.3081	1.95	0.1405	0.7631	0.7386	0.7394

Table 33: Detailed results for CC(US+SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4062	1.40	0.0557	0.7318	0.9446	0.9412
3s-bbc1000	0.7222	2.33	0.1898	0.5040	0.6372	0.5730
3s-guardian1000	0.7419	2.10	0.3548	0.5086	0.5184	0.5813
3s-reuters1000	0.8667	2.23	0.5333	0.4128	0.6581	0.5773
bibtex	0.5703	49.09	0.2078	0.4058	0.8879	0.8082
birds	0.5128	6.03	0.1807	0.5489	0.7493	0.7851
bookmarks	0.7514	58.12	0.1692	0.2993	0.8434	0.8020
CAL500	0.7647	167.78	0.4641	0.2733	0.4503	0.5977
corel16k001	0.7625	73.66	0.1821	0.2225	0.7170	0.7347
Corel5k	0.6860	159.47	0.4648	0.2247	0.4815	0.8186
delicious	0.8291	920.65	0.3886	0.0829	0.6975	0.5803
emotions	0.3000	1.88	0.1472	0.7805	0.7897	0.8077
enron	0.3275	21.46	0.1677	0.5615	0.6145	0.8227
EukaryoteGO	0.2497	1.01	0.0383	0.8446	0.9847	0.9688
EukaryotePseAAC	0.6718	4.50	0.0631	0.4960	0.7472	0.8128
Eurlex-dc	0.5168	53.05	0.1824	0.5028	0.6866	0.8868
Eurlex-sm	0.3245	29.95	0.1017	0.6087	0.7467	0.9175
foodtruck	0.5610	4.22	0.2822	0.6189	0.5947	0.7145
genbase	0.0000	0.48	0.0075	0.9933	0.6667	0.9956
GnegativeGO	0.0143	0.09	0.0089	0.9907	0.8660	0.9943
GnegativePseAAC	0.2357	0.72	0.0679	0.8357	0.7395	0.9255
GpositivePseAAC	0.2308	0.38	0.0769	0.8622	0.9186	0.9157
HumanGO	0.2379	1.11	0.0701	0.8455	0.9678	0.9398
HumanPseAAC	0.7106	4.19	0.4506	0.4433	0.7172	0.7188
Image	0.7200	1.70	0.1858	0.5645	0.7495	0.6452
IMDB-ECC-F	0.8661	12.07	0.2834	0.2884	0.6270	0.6591
IMDB-F	0.8683	11.42	0.2802	0.2996	0.6168	0.6810
LLOG-F	0.6885	16.10	0.1899	0.3814	0.4314	0.8131
mediamill	0.9202	91.02	0.6393	0.1079	0.5602	0.4305
medical	0.1633	3.11	0.0485	0.8374	0.5359	0.9517
Music	0.2167	1.97	0.1750	0.8020	0.8224	0.8377
OHSUMED-F	0.4645	6.09	0.1423	0.5884	0.8185	0.8189
PlantGO	0.2347	0.82	0.0765	0.8429	0.9547	0.9516
PlantPseAAC	0.6327	3.10	0.4022	0.5225	0.7321	0.7392
rcv1subset1	0.4383	30.64	0.2362	0.5157	0.8414	0.8608
REUTERS-K500-EX2	0.6200	13.93	0.0671	0.4483	0.7119	0.8932
scene	0.2033	0.40	0.0871	0.8821	0.9448	0.9505
sider_CDK_ECFP4	0.2958	22.80	0.3847	0.7206	0.6654	0.6819
sider_MordredDesc	0.3169	23.52	0.4352	0.6676	0.5987	0.5815
sider_RDKit_desc	0.2324	23.55	0.5438	0.6295	0.6060	0.5211
SLASHDOT-F	0.4591	3.03	0.1386	0.6512	0.6705	0.8837
Stackex_chemistry	0.7931	56.47	0.2263	0.2298	0.7203	0.7864
Stackex_chess	0.6726	64.71	0.1158	0.2881	0.4330	0.8378
Stackex_coffee	0.7391	37.61	0.1229	0.2361	0.1766	0.7731
Stackex_cooking	0.7681	125.03	0.1366	0.2232	0.7362	0.8125
Stackex_cs	0.6472	80.71	0.1336	0.2989	0.7529	0.8453
Stackex_philosophy	0.7136	61.47	0.1908	0.2708	0.5604	0.8342
tmc2007-500	0.3098	3.88	0.0732	0.7361	0.9129	0.9089
tox21_CDK_ECFP4	0.6164	5.71	0.2839	0.5148	0.6557	0.6584
tox21_RDKit_desc	0.4760	4.67	0.1253	0.5940	0.7052	0.7391
VirusGO	0.0476	0.48	0.0476	0.9524	0.7609	0.9469
VirusPseAAC	0.3810	0.95	0.0714	0.7556	0.6357	0.8700
Water-quality	0.3491	9.89	0.4054	0.6290	0.6959	0.6775
Yahoo_Arts	0.6622	8.72	0.3515	0.4304	0.6700	0.7259
Yahoo_Business	0.4002	8.40	0.0829	0.6180	0.6708	0.7769
Yahoo_Computers	0.4900	8.63	0.1553	0.5688	0.6613	0.7675
Yahoo_Education	0.6052	7.95	0.2981	0.5080	0.6461	0.7985
Yahoo_Entertainment	0.4965	5.06	0.2401	0.5984	0.7554	0.7928
Yahoo_Health	0.4050	8.35	0.2231	0.6100	0.6449	0.8051
Yahoo_Recreation	0.5487	5.87	0.2216	0.5447	0.7392	0.7625
Yahoo_Reference	0.5205	6.13	0.2080	0.5651	0.6025	0.8175
Yahoo_Science	0.6159	9.78	0.0806	0.4558	0.6903	0.7851
Yahoo_Social	0.4117	7.22	0.2383	0.6429	0.6356	0.8235
yeast	0.4339	10.61	0.4237	0.5186	0.5678	0.5722
Yelp	0.2164	1.57	0.0902	0.8350	0.8173	0.7996

Table 34: Detailed results for CC(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3658	2.99	0.2776	0.7133	0.9780	0.9785
3s-bbc1000	0.5000	1.64	0.3958	0.6657	0.8018	0.7932
3s-guardian1000	0.5806	2.00	0.2823	0.5946	0.6475	0.6778
3s-reuters1000	0.7667	2.13	0.6250	0.4781	0.6733	0.6725
bibtex	0.3851	50.19	0.3129	0.5174	0.9655	0.9717
birds	0.4872	6.05	0.2795	0.5545	0.7562	0.8586
bookmarks	0.9142	113.16	0.4121	0.1165	0.6011	0.5893
CAL500	0.3922	149.18	0.5742	0.3845	0.6501	0.8044
corel16k001	0.8417	113.57	0.8296	0.1307	0.9723	0.9723
Corel5k	0.7460	159.00	0.7610	0.1926	0.6614	0.9813
delicious	0.6389	902.07	0.8913	0.1104	0.9916	0.9962
emotions	0.3000	2.00	0.1847	0.7700	0.8571	0.8486
enron	0.3041	19.85	0.3108	0.5665	0.7536	0.9349
EukaryoteGO	0.2085	0.86	0.0384	0.8705	0.9935	0.9938
EukaryotePseAAC	0.9511	10.51	0.9079	0.1869	0.9527	0.9541
Eurlex-dc	0.5163	13.22	0.0533	0.6011	0.7338	0.9830
Eurlex-sm	0.2465	36.25	0.3911	0.6331	0.8263	0.9954
foodtruck	0.2195	3.71	0.3518	0.7442	0.7286	0.8341
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0286	0.09	0.0107	0.9839	0.8742	0.9992
GnegativePseAAC	0.3143	1.34	0.2625	0.7644	0.7973	0.9427
GpositivePseAAC	0.4615	0.77	0.1731	0.7276	0.8133	0.8362
HumanGO	0.2926	0.82	0.0511	0.8265	0.9790	0.9796
HumanPseAAC	0.9228	7.08	0.8805	0.2536	0.9103	0.9040
Image	0.6350	1.86	0.5733	0.5747	0.8778	0.8774
IMDB-ECC-F	0.6373	12.69	0.7279	0.3620	0.9791	0.9632
IMDB-F	0.8488	12.42	0.6477	0.3285	0.9834	0.9390
LLOG-F	0.7049	20.04	0.4710	0.3666	0.5378	0.9308
mediamill	0.3181	69.22	0.6008	0.4122	0.9951	0.9927
medical	0.1429	2.94	0.0791	0.8798	0.5491	0.9957
Music	0.2667	2.35	0.2194	0.7566	0.8359	0.8133
OHSUMED-F	0.3884	7.78	0.3840	0.6038	0.9517	0.9580
PlantGO	0.2857	1.23	0.1497	0.8045	0.9652	0.9715
PlantPseAAC	0.8367	4.21	0.6735	0.3543	0.8031	0.8063
rcv1subset1	0.5983	50.43	0.6023	0.3316	0.9098	0.9684
REUTERS-K500-EX2	0.6317	35.34	0.5713	0.4050	0.7753	0.9881
scene	0.4564	1.87	0.3828	0.6476	0.9094	0.8910
sider_CDK_ECFP4	0.2183	19.88	0.2232	0.7712	0.5101	0.6979
sider_MordredDesc	0.4085	19.99	0.2985	0.7445	0.5640	0.7460
sider_RDKit_desc	0.4507	20.68	0.3486	0.7119	0.5988	0.7405
SLASHDOT-F	0.4195	5.28	0.3316	0.6338	0.7395	0.9691
Stackex_chemistry	0.8103	104.71	0.8390	0.1466	0.9057	0.9845
Stackex_chess	0.6548	117.83	0.6331	0.2632	0.5365	0.9809
Stackex_coffee	0.7391	63.00	0.4620	0.2612	0.2432	0.9441
Stackex_cooking	0.5440	195.59	0.6303	0.3124	0.9155	0.9906
Stackex_cs	0.7002	147.88	0.7622	0.2294	0.8870	0.9882
Stackex_philosophy	0.6633	127.96	0.6902	0.2502	0.7351	0.9819
tmc2007-500	0.3881	6.33	0.3253	0.6530	0.9692	0.9664
tox21_CDK_ECFP4	0.5651	6.02	0.5220	0.4915	0.8414	0.8463
tox21_RDKit_desc	0.8116	7.11	0.8339	0.3367	0.9038	0.8995
VirusGO	0.0476	0.38	0.0476	0.9563	0.8168	0.9857
VirusPseAAC	0.4286	1.00	0.0476	0.7389	0.6518	0.8552
Water-quality	0.2925	10.11	0.4263	0.6533	0.7982	0.7409
Yahoo_Arts	0.5194	11.05	0.5701	0.4780	0.9305	0.9712
Yahoo_Business	0.1168	3.10	0.1775	0.8709	0.8543	0.9914
Yahoo_Computers	0.4618	6.64	0.5324	0.5713	0.8952	0.9811
Yahoo_Education	0.6293	9.33	0.6609	0.4615	0.8971	0.9873
Yahoo_Entertainment	0.5114	4.37	0.5540	0.5811	0.9879	0.9890
Yahoo_Health	0.4213	6.90	0.3631	0.6374	0.8295	0.9815
Yahoo_Recreation	0.4365	6.36	0.4698	0.6041	0.9882	0.9889
Yahoo_Reference	0.4545	4.56	0.4390	0.6292	0.8039	0.9874
Yahoo_Science	0.5568	12.74	0.5593	0.4764	0.9513	0.9782
Yahoo_Social	0.5272	8.52	0.3556	0.5246	0.8303	0.8774
yeast	0.2603	6.90	0.4000	0.7079	0.8763	0.8959
Yelp	0.2592	1.55	0.2435	0.8199	0.8910	0.8951

Table 35: Detailed results for CC(US+RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5171	2.78	0.1867	0.6188	0.9345	0.9157
3s-bbc1000	0.8056	2.81	0.6065	0.4416	0.5703	0.5389
3s-guardian1000	0.8065	2.68	0.4839	0.4452	0.5549	0.6060
3s-reuters1000	0.7667	1.67	0.1917	0.5275	0.6935	0.6719
bibtex	0.8243	40.82	0.3601	0.2570	0.8775	0.8679
birds	0.4872	6.36	0.2742	0.5381	0.7369	0.8256
bookmarks	0.9142	113.16	0.4121	0.1165	0.6011	0.5893
CAL500	0.7843	151.63	0.5229	0.2628	0.5216	0.6729
corel16k001	0.9811	107.73	0.4524	0.0529	0.7262	0.5794
Corel5k	0.9140	184.77	0.5425	0.0768	0.5127	0.7423
delicious	0.9795	931.86	0.5251	0.0189	0.5192	0.3764
emotions	0.4000	2.07	0.2111	0.7291	0.8149	0.8171
enron	0.4971	19.43	0.1849	0.4869	0.6350	0.8315
EukaryoteGO	0.2136	0.54	0.0090	0.8779	0.9969	0.9962
EukaryotePseAAC	0.8803	10.93	0.5030	0.2581	0.7155	0.6258
Eurlex-dc	0.5163	13.22	0.0533	0.6011	0.7338	0.9830
Eurlex-sm	0.3804	12.96	0.0610	0.6511	0.7978	0.9716
foodtruck	0.6585	3.76	0.3164	0.5580	0.6632	0.7414
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0429	0.12	0.0143	0.9750	0.8722	0.9983
GnegativePseAAC	0.3857	1.37	0.0607	0.7227	0.6987	0.8639
GpositivePseAAC	0.4231	0.81	0.1923	0.7356	0.7960	0.8118
HumanGO	0.2894	0.74	0.0335	0.8344	0.9831	0.9854
HumanPseAAC	0.8971	7.10	0.5627	0.2605	0.7256	0.5439
Image	0.6500	1.44	0.5104	0.6068	0.7273	0.6957
IMDB-ECC-F	0.8176	15.42	0.4224	0.2375	0.7550	0.6428
IMDB-F	0.8728	15.81	0.4055	0.2307	0.7166	0.6429
LLOG-F	0.9262	20.13	0.3237	0.2227	0.4546	0.8213
mediamill	0.9359	54.01	0.3283	0.1839	0.7821	0.7902
medical	0.1735	1.66	0.0408	0.8764	0.5451	0.9915
Music	0.4167	2.43	0.2889	0.7130	0.7982	0.7777
OHSUMED-F	0.7329	7.57	0.1845	0.3924	0.9088	0.7932
PlantGO	0.2041	0.53	0.0714	0.8751	0.9695	0.9807
PlantPseAAC	0.8265	3.62	0.3197	0.4098	0.6534	0.7219
rcv1subset1	0.7683	29.80	0.2362	0.3229	0.8315	0.8668
REUTERS-K500-EX2	0.8617	14.00	0.1416	0.2917	0.7194	0.9143
scene	0.5187	1.41	0.2666	0.6582	0.8718	0.8221
sider_CDK_ECFP4	0.4507	24.34	0.5896	0.5984	0.7143	0.6482
sider_MordredDesc	0.4507	24.24	0.5029	0.6139	0.6209	0.6066
sider_RDKit_desc	0.3169	24.05	0.5704	0.6134	0.6032	0.5937
SLASHDOT-F	0.8206	5.29	0.2109	0.3975	0.6781	0.8426
Stackex_chemistry	0.8563	64.89	0.2225	0.1842	0.7609	0.8125
Stackex_chess	0.7798	75.27	0.3201	0.2622	0.4809	0.9050
Stackex_coffee	0.7391	51.74	0.3611	0.3134	0.2431	0.9355
Stackex_cooking	0.8309	116.71	0.2131	0.2056	0.7737	0.8674
Stackex_cs	0.9048	72.85	0.1544	0.1737	0.7851	0.8818
Stackex_philosophy	0.7915	83.04	0.2797	0.2453	0.6256	0.8496
tmc2007-500	0.5832	5.10	0.1367	0.5390	0.9427	0.9051
tox21_CDK_ECFP4	0.5925	4.93	0.0953	0.5248	0.5641	0.6562
tox21_RDKit_desc	0.6336	5.63	0.1445	0.4560	0.8250	0.6909
VirusGO	0.0476	0.38	0.0476	0.9563	0.8096	0.9853
VirusPseAAC	0.2857	1.00	0.0238	0.7849	0.6293	0.8713
Water-quality	0.6415	9.75	0.3395	0.5614	0.6421	0.6407
Yahoo_Arts	0.7383	10.03	0.3509	0.3805	0.8408	0.8110
Yahoo_Business	0.1551	5.57	0.1393	0.7392	0.7538	0.8772
Yahoo_Computers	0.7928	8.21	0.3344	0.3669	0.8030	0.8450
Yahoo_Education	0.7822	12.00	0.3938	0.3262	0.7945	0.8144
Yahoo_Entertainment	0.5766	4.77	0.4987	0.5302	0.9099	0.8967
Yahoo_Health	0.4625	6.30	0.2184	0.6115	0.7669	0.9140
Yahoo_Recreation	0.5830	6.34	0.3548	0.5119	0.9275	0.8803
Yahoo_Reference	0.6588	5.64	0.3510	0.4741	0.7212	0.8797
Yahoo_Science	0.7729	13.88	0.4240	0.3302	0.8699	0.8335
Yahoo_Social	0.5272	8.52	0.3556	0.5246	0.8303	0.8774
yeast	0.6364	10.44	0.4894	0.4745	0.7784	0.6279
Yelp	0.2851	1.53	0.2305	0.8106	0.8650	0.8683

Table 36: Detailed results for ECC(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3637	2.34	0.1484	0.7335	0.9494	0.9399
3s-bbc1000	0.6667	2.03	0.5417	0.5541	0.6594	0.6378
3s-guardian1000	0.7742	2.71	0.3065	0.4478	0.6714	0.5441
3s-reuters1000	0.7333	2.10	0.4750	0.5011	0.5110	0.5669
bibtex	0.5068	64.61	0.4851	0.4405	0.9882	0.9889
birds	0.5385	6.97	0.5359	0.5244	0.8556	0.9587
bookmarks	0.6074	83.72	0.5410	0.3821	0.9810	0.9826
CAL500	0.3725	147.43	0.4656	0.4274	0.6150	0.8128
corel16k001	0.7553	86.22	0.5927	0.2374	0.9630	0.9637
Corel5k	0.7120	161.28	0.7106	0.2138	0.6660	0.9860
delicious	0.4636	892.34	0.7146	0.2000	0.9835	0.9894
emotions	0.3167	1.77	0.2236	0.7785	0.8238	0.8422
enron	0.3567	21.37	0.2257	0.5902	0.7731	0.9323
EukaryoteGO	0.1956	0.81	0.0376	0.8804	0.9925	0.9945
EukaryotePseAAC	0.6332	3.31	0.1063	0.5527	0.8649	0.9012
Eurlex-dc	0.3187	52.30	0.2776	0.6847	0.7590	0.9994
Eurlex-sm	0.2083	26.45	0.2123	0.7464	0.8280	0.9976
foodtruck	0.2927	3.93	0.3579	0.7241	0.7119	0.8594
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0357	0.11	0.0143	0.9792	0.8747	0.9996
GnegativePseAAC	0.4000	0.96	0.3250	0.7465	0.7744	0.9148
GpositivePseAAC	0.4038	0.71	0.1923	0.7516	0.8053	0.7917
HumanGO	0.2412	1.10	0.0997	0.8425	0.9802	0.9854
HumanPseAAC	0.6559	2.87	0.1166	0.5272	0.8235	0.8390
Image	0.3500	1.01	0.1283	0.7686	0.8647	0.8661
IMDB-ECC-F	0.6579	9.45	0.2046	0.4381	0.6790	0.7634
IMDB-F	0.6715	9.42	0.2258	0.4430	0.7358	0.7897
LLOG-F	0.7787	32.20	0.7623	0.2566	0.5847	0.9838
mediamill	0.1285	28.33	0.1200	0.7424	0.9480	0.9724
medical	0.2143	5.11	0.1233	0.8214	0.5523	0.9960
Music	0.3833	2.10	0.2648	0.7480	0.8378	0.8486
OHSUMED-F	0.4257	7.05	0.3373	0.6000	0.9280	0.9349
PlantGO	0.1939	0.62	0.0646	0.8774	0.9893	0.9868
PlantPseAAC	0.7449	3.08	0.3333	0.4770	0.8364	0.8407
rcv1subset1	0.4750	35.41	0.3470	0.5014	0.9186	0.9787
REUTERS-K500-EX2	0.5300	25.41	0.4099	0.5229	0.7760	0.9895
scene	0.3402	0.88	0.1691	0.7858	0.9241	0.9314
sider_CDK_ECFP4	0.1831	23.13	0.3458	0.7610	0.6931	0.8157
sider_MordredDesc	0.1690	22.25	0.2802	0.7693	0.6513	0.7740
sider_RDKit_desc	0.1831	23.04	0.3110	0.7609	0.6477	0.7724
SLASHDOT-F	0.4380	4.00	0.1649	0.6480	0.6940	0.9149
Stackex_chemistry	0.6983	90.42	0.6859	0.2606	0.9085	0.9886
Stackex_chess	0.7083	133.77	0.7291	0.2215	0.5449	0.9939
Stackex_coffee	0.7391	67.61	0.7518	0.2040	0.2569	0.9898
Stackex_cooking	0.6048	200.92	0.6423	0.3022	0.9212	0.9964
Stackex_cs	0.5465	140.40	0.5842	0.3502	0.8909	0.9931
Stackex_philosophy	0.6734	125.49	0.6642	0.2764	0.7438	0.9927
tmc2007-500	0.3098	4.51	0.1812	0.7298	0.9381	0.9506
tox21_CDK_ECFP4	0.5000	5.06	0.4304	0.5607	0.7830	0.7587
tox21_RDKit_desc	0.5514	5.42	0.4043	0.5385	0.7826	0.7820
VirusGO	0.0476	0.62	0.0873	0.9421	0.8287	0.9949
VirusPseAAC	0.5238	1.24	0.1429	0.6730	0.5641	0.8417
Water-quality	0.4434	9.73	0.4481	0.6248	0.6973	0.7234
Yahoo_Arts	0.4780	6.69	0.3818	0.5993	0.8854	0.9152
Yahoo_Business	0.1052	2.97	0.1402	0.8687	0.8227	0.9750
Yahoo_Computers	0.3606	4.46	0.2406	0.6984	0.8447	0.9304
Yahoo_Education	0.4480	5.38	0.3573	0.6341	0.8520	0.9403
Yahoo_Entertainment	0.3409	2.93	0.1326	0.7257	0.9187	0.9122
Yahoo_Health	0.2443	4.93	0.2662	0.7433	0.8079	0.9565
Yahoo_Recreation	0.4030	4.04	0.2685	0.6725	0.9188	0.9022
Yahoo_Reference	0.3636	3.39	0.1574	0.7098	0.7669	0.9523
Yahoo_Science	0.4837	9.60	0.3319	0.5693	0.9359	0.9539
Yahoo_Social	0.2574	3.56	0.1226	0.7860	0.8954	0.9700
yeast	0.2479	6.74	0.2696	0.7460	0.6883	0.8235
Yelp	0.1206	1.33	0.1156	0.8949	0.8379	0.8517

Table 37: Detailed results for ECC(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4751	2.23	0.2032	0.6795	0.9694	0.9676
3s-bbc1000	0.6389	2.81	0.7130	0.5000	0.8968	0.8947
3s-guardian1000	0.5806	2.45	0.6613	0.5505	0.9395	0.9449
3s-reuters1000	0.8667	2.53	0.7667	0.4033	0.9194	0.9149
bibtex	0.7568	39.14	0.2770	0.3115	0.9041	0.9241
birds	0.7436	6.90	0.4833	0.4284	0.8012	0.8895
bookmarks	0.5894	83.71	0.5332	0.3840	0.9811	0.9708
CAL500	0.4706	152.55	0.5103	0.3378	0.5904	0.6939
corel16k001	0.7378	85.99	0.5777	0.2547	0.9319	0.9416
Corel5k	0.6900	151.34	0.7260	0.2635	0.6712	0.9922
delicious	0.5085	892.32	0.7610	0.2029	0.9850	0.9807
emotions	0.3167	1.77	0.2528	0.7839	0.8584	0.8705
enron	0.5380	25.01	0.3756	0.3815	0.7418	0.8935
EukaryoteGO	0.1717	0.47	0.0164	0.8777	0.9703	0.9902
EukaryotePseAAC	0.8391	6.67	0.4210	0.3423	0.8597	0.8643
Eurlex-dc	0.7315	69.77	0.4060	0.3522	0.7502	0.9867
Eurlex-sm	0.2013	26.45	0.2352	0.7472	0.8475	0.9807
foodtruck	0.2683	3.66	0.4188	0.7556	0.8026	0.9195
genbase	0.6418	5.97	0.7065	0.4727	0.6667	1.0000
GnegativeGO	0.2071	0.89	0.2179	0.8398	0.8731	0.9971
GnegativePseAAC	0.2786	0.84	0.1357	0.8089	0.8266	0.9717
GpositivePseAAC	0.3077	0.63	0.1923	0.8029	0.9493	0.9536
HumanGO	0.6270	4.35	0.5713	0.5047	0.9741	0.9790
HumanPseAAC	0.7942	4.48	0.5212	0.4034	0.8450	0.8598
Image	0.3750	1.05	0.2104	0.7597	0.9306	0.9308
IMDB-ECC-F	0.6993	9.44	0.2004	0.4273	0.6762	0.8008
IMDB-F	0.6655	9.41	0.2515	0.4904	0.7172	0.7740
LLOG-F	0.8770	27.84	0.6482	0.1913	0.5363	0.9159
mediamill	0.9249	59.61	0.4292	0.1459	0.7524	0.7617
medical	0.5000	17.53	0.5196	0.4909	0.5459	0.9918
Music	0.3333	2.22	0.2995	0.7601	0.8876	0.8874
OHSUMED-F	0.5492	7.21	0.3171	0.5394	0.9266	0.9349
PlantGO	0.6327	4.01	0.6122	0.4837	0.9778	0.9749
PlantPseAAC	0.6224	2.52	0.4345	0.5612	0.9098	0.9193
rcv1subset1	0.4514	35.40	0.3683	0.5199	0.9169	0.9728
REUTERS-K500-EX2	0.6300	26.90	0.4541	0.4467	0.7634	0.9792
scene	0.4191	0.93	0.2168	0.7471	0.9448	0.9486
sider_CDK_ECFP4	0.2958	22.37	0.4743	0.7226	0.7461	0.8228
sider_MordredDesc	0.5352	23.73	0.7594	0.5946	0.6838	0.6998
sider_RDKit_desc	0.5423	22.88	0.6564	0.6179	0.6691	0.7069
SLASHDOT-F	0.4195	6.07	0.3861	0.6150	0.7606	0.9880
Stackex_chemistry	0.7170	86.72	0.6123	0.2579	0.8140	0.9049
Stackex_chess	0.7321	138.33	0.7811	0.1881	0.5149	0.9447
Stackex_coffee	1.0000	81.74	0.9493	0.0457	0.2571	0.9924
Stackex_cooking	0.6300	203.34	0.6314	0.2871	0.9031	0.9817
Stackex_cs	0.6775	114.80	0.4555	0.3283	0.7841	0.9111
Stackex_philosophy	0.6910	129.94	0.6952	0.2463	0.6700	0.9111
tmc2007-500	0.4472	4.93	0.2685	0.6435	0.9248	0.9382
tox21_CDK_ECFP4	0.5890	5.50	0.4762	0.5139	0.8601	0.8696
tox21_RDKit_desc	0.6644	5.96	0.4721	0.4554	0.7614	0.7684
VirusGO	0.3810	1.29	0.3571	0.7460	0.8179	0.9735
VirusPseAAC	0.4286	1.24	0.3095	0.7127	0.7881	0.9696
Water-quality	0.4340	9.74	0.4899	0.6235	0.7353	0.7475
Yahoo_Arts	0.4855	6.69	0.3744	0.6485	0.8676	0.9275
Yahoo_Business	0.1420	3.00	0.1572	0.8457	0.8035	0.9623
Yahoo_Computers	0.3465	4.46	0.2469	0.6997	0.8819	0.9318
Yahoo_Education	0.4529	5.37	0.3393	0.6502	0.8343	0.9277
Yahoo_Entertainment	0.3512	2.91	0.1642	0.7170	0.9390	0.9002
Yahoo_Health	0.4593	7.19	0.4693	0.6135	0.8293	0.9850
Yahoo_Recreation	0.4095	4.05	0.2711	0.6648	0.9263	0.8882
Yahoo_Reference	0.3592	3.41	0.2002	0.7031	0.7483	0.9515
Yahoo_Science	0.4636	9.57	0.3276	0.5550	0.9185	0.9404
Yahoo_Social	0.2441	3.54	0.1366	0.7810	0.9086	0.9648
yeast	0.3636	7.22	0.3656	0.6756	0.7889	0.8394
Yelp	0.2502	1.53	0.2721	0.8237	0.8856	0.9066

Table 38: Detailed results for BECC(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3008	1.61	0.1004	0.7845	0.9595	0.9517
3s-bbc1000	0.7500	2.64	0.7778	0.4504	0.6534	0.6127
3s-guardian1000	0.5806	1.71	0.4758	0.6161	0.7206	0.7438
3s-reuters1000	0.7333	2.30	0.6667	0.4814	0.6190	0.5709
bibtex	0.3851	46.43	0.3170	0.5452	0.9749	0.9798
birds	0.3590	4.85	0.2462	0.6524	0.8023	0.8976
bookmarks	0.6074	83.72	0.5410	0.3821	0.9810	0.9826
CAL500	0.1961	149.18	0.4719	0.4514	0.5911	0.8043
corel16k001	0.7291	84.88	0.5455	0.2484	0.9476	0.9524
Corel5k	0.7180	160.39	0.7124	0.2124	0.6606	0.9816
delicious	0.4636	892.34	0.7146	0.2000	0.9835	0.9894
emotions	0.2167	1.65	0.2125	0.8305	0.8592	0.8803
enron	0.2339	17.54	0.1689	0.6488	0.7491	0.9276
EukaryoteGO	0.1830	0.49	0.0113	0.8966	0.9929	0.9951
EukaryotePseAAC	0.6023	3.00	0.0896	0.5788	0.8477	0.9069
Eurlex-dc	0.3187	52.30	0.2776	0.6847	0.7590	0.9994
Eurlex-sm	0.2083	26.45	0.2123	0.7464	0.8280	0.9976
foodtruck	0.2927	3.27	0.3638	0.7698	0.6858	0.8317
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0214	0.09	0.0143	0.9863	0.8743	0.9994
GnegativePseAAC	0.3286	0.83	0.2214	0.7908	0.7689	0.9098
GpositivePseAAC	0.3462	0.58	0.1538	0.7933	0.8436	0.8460
HumanGO	0.2219	0.74	0.0496	0.8694	0.9812	0.9860
HumanPseAAC	0.6077	2.64	0.1066	0.5615	0.7743	0.8477
Image	0.2350	0.74	0.0800	0.8452	0.8770	0.8821
IMDB-ECC-F	0.6579	9.45	0.2046	0.4381	0.6790	0.7634
IMDB-F	0.6715	9.42	0.2258	0.4430	0.7358	0.7897
LLOG-F	0.6557	18.69	0.3929	0.4187	0.5478	0.9447
mediamill	0.1192	26.46	0.1063	0.7491	0.9403	0.9697
medical	0.1531	2.40	0.0587	0.8805	0.5514	0.9953
Music	0.2167	1.78	0.2292	0.8298	0.8771	0.8781
OHSUMED-F	0.3532	4.87	0.1942	0.6883	0.9107	0.9309
PlantGO	0.2188	0.53	0.0417	0.8745	0.9862	0.9858
PlantPseAAC	0.7143	2.54	0.2015	0.5106	0.7694	0.8137
rcv1subset1	0.4750	35.41	0.3470	0.5014	0.9186	0.9787
REUTERS-K500-EX2	0.4433	17.87	0.2627	0.6090	0.7694	0.9849
scene	0.1950	0.49	0.0830	0.8779	0.9442	0.9521
sider_CDK_ECFP4	0.0986	22.54	0.3174	0.7732	0.6414	0.7859
sider_MordredDesc	0.1127	21.37	0.2502	0.8029	0.6014	0.7685
sider_RDKit_desc	0.0845	22.54	0.2882	0.7941	0.6170	0.7630
SLASHDOT-F	0.3889	3.14	0.1257	0.6883	0.7155	0.9333
Stackex_chemistry	0.6225	74.69	0.5327	0.3349	0.8957	0.9773
Stackex_chess	0.5179	99.78	0.4845	0.3809	0.5374	0.9854
Stackex_coffee	0.7391	59.30	0.4103	0.3002	0.2497	0.9731
Stackex_cooking	0.4773	163.95	0.4621	0.4143	0.9143	0.9909
Stackex_cs	0.4583	109.95	0.4308	0.4409	0.8824	0.9870
Stackex_philosophy	0.5126	93.97	0.4480	0.4120	0.7334	0.9833
tmc2007-500	0.2699	3.49	0.1177	0.7741	0.9322	0.9508
tox21_CDK_ECFP4	0.4863	4.56	0.2232	0.5905	0.7450	0.7717
tox21_RDKit_desc	0.4863	4.45	0.2474	0.6007	0.7426	0.7780
VirusGO	0.0476	0.38	0.0476	0.9563	0.8235	0.9881
VirusPseAAC	0.3333	0.62	0.0000	0.8056	0.6741	0.9000
Water-quality	0.3491	9.02	0.2876	0.6968	0.7000	0.7376
Yahoo_Arts	0.4780	6.69	0.3818	0.5993	0.8854	0.9152
Yahoo_Business	0.1052	2.97	0.1402	0.8687	0.8227	0.9750
Yahoo_Computers	0.3606	4.46	0.2406	0.6984	0.8447	0.9304
Yahoo_Education	0.4480	5.38	0.3573	0.6341	0.8520	0.9403
Yahoo_Entertainment	0.3409	2.93	0.1326	0.7257	0.9187	0.9122
Yahoo_Health	0.2443	4.93	0.2662	0.7433	0.8079	0.9565
Yahoo_Recreation	0.4030	4.04	0.2685	0.6725	0.9188	0.9022
Yahoo_Reference	0.3636	3.39	0.1574	0.7098	0.7669	0.9523
Yahoo_Science	0.4837	9.60	0.3319	0.5693	0.9359	0.9539
Yahoo_Social	0.2574	3.56	0.1226	0.7860	0.8954	0.9700
yeast	0.2479	6.38	0.2525	0.7528	0.7053	0.8354
Yelp	0.1047	1.15	0.0965	0.9208	0.8702	0.8999

Table 39: Detailed results for BECC(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4446	2.05	0.1905	0.7021	0.9692	0.9675
3s-bbc1000	0.6944	2.58	0.6296	0.4870	0.8132	0.8118
3s-guardian1000	0.5484	2.06	0.5000	0.5957	0.8703	0.8823
3s-reuters1000	0.8333	2.73	0.7333	0.4053	0.8149	0.7781
bibtex	0.6878	39.50	0.2405	0.3543	0.9196	0.9354
birds	0.6154	5.77	0.3060	0.5091	0.7725	0.8691
bookmarks	0.5652	83.71	0.5158	0.3945	0.9591	0.9751
CAL500	0.4118	144.02	0.4736	0.3988	0.6297	0.7845
corel16k001	0.7204	82.40	0.5297	0.2723	0.9368	0.9456
Corel5k	0.6600	148.85	0.6798	0.2806	0.6691	0.9901
delicious	0.7912	762.18	0.3421	0.1697	0.8835	0.9050
emotions	0.3167	1.75	0.2139	0.7906	0.8356	0.8597
enron	0.3158	23.91	0.3101	0.5189	0.7264	0.8763
EukaryoteGO	0.4723	4.87	0.4181	0.6036	0.9862	0.9895
EukaryotePseAAC	0.7864	6.02	0.3583	0.3930	0.8601	0.8719
Eurlex-dc	0.3017	52.32	0.3206	0.6468	0.6947	0.9781
Eurlex-sm	0.6527	43.04	0.3944	0.3630	0.8016	0.9604
foodtruck	0.2927	3.49	0.3377	0.7346	0.7358	0.8709
genbase	0.5373	5.84	0.6194	0.5257	0.6667	1.0000
GnegativeGO	0.1500	0.56	0.1500	0.8865	0.8734	0.9968
GnegativePseAAC	0.2643	0.82	0.1304	0.8235	0.8271	0.9691
GpositivePseAAC	0.3077	0.56	0.1346	0.8109	0.9522	0.9427
HumanGO	0.5370	3.77	0.4845	0.5698	0.9678	0.9741
HumanPseAAC	0.6817	3.80	0.3967	0.4999	0.8547	0.8725
Image	0.3650	0.98	0.1679	0.7715	0.9012	0.9027
IMDB-ECC-F	0.6073	9.49	0.2268	0.3598	0.6411	0.7303
IMDB-F	0.6608	9.43	0.2399	0.5056	0.7209	0.7593
LLOG-F	0.8279	24.23	0.5574	0.2527	0.5390	0.9263
mediamill	0.8888	57.49	0.3926	0.1839	0.7689	0.7894
medical	0.4082	15.27	0.4252	0.5691	0.5439	0.9898
Music	0.3000	2.18	0.2204	0.7616	0.8754	0.8763
OHSUMED-F	0.4889	6.53	0.2680	0.5854	0.9158	0.9273
PlantGO	0.5816	3.74	0.5510	0.5272	0.9700	0.9680
PlantPseAAC	0.5816	2.59	0.3937	0.5795	0.9013	0.9065
rcv1subset1	0.7767	61.45	0.8874	0.1829	0.9384	0.9980
REUTERS-K500-EX2	0.5767	23.86	0.4095	0.4941	0.7662	0.9812
scene	0.3485	0.81	0.1805	0.7861	0.9350	0.9411
sider_CDK_ECFP4	0.2254	21.65	0.3530	0.7584	0.7104	0.8071
sider_MordredDesc	0.4577	22.65	0.5429	0.6387	0.6421	0.6787
sider_RDKit_desc	0.4225	22.58	0.5309	0.6690	0.6718	0.7352
SLASHDOT-F	0.3931	4.91	0.3017	0.6588	0.7517	0.9799
Stackex_chemistry	0.6710	81.30	0.5677	0.2929	0.8292	0.9216
Stackex_chess	0.6488	135.24	0.7385	0.2305	0.5149	0.9471
Stackex_coffee	0.9565	81.57	0.9266	0.0573	0.2513	0.9827
Stackex_cooking	0.6812	208.42	0.6256	0.2604	0.8194	0.9089
Stackex_cs	0.6050	107.14	0.4293	0.3752	0.7983	0.9281
Stackex_philosophy	0.6508	122.66	0.6318	0.2875	0.6787	0.9253
tmc2007-500	0.4353	4.78	0.2522	0.6540	0.9252	0.9383
tox21_CDK_ECFP4	0.5514	5.02	0.3769	0.5459	0.8181	0.8336
tox21_RDKit_desc	0.6370	5.47	0.3618	0.4811	0.7228	0.7367
VirusGO	0.2381	1.19	0.2937	0.8016	0.7828	0.9319
VirusPseAAC	0.2381	0.76	0.1667	0.8325	0.7711	0.9553
Water-quality	0.4245	9.44	0.4303	0.6329	0.7152	0.7281
Yahoo_Arts	0.5276	6.61	0.3414	0.5843	0.7893	0.8822
Yahoo_Business	0.0369	2.88	0.1138	0.7900	0.7248	0.9613
Yahoo_Computers	0.2946	4.46	0.1688	0.6861	0.8878	0.9166
Yahoo_Education	0.4370	5.36	0.3622	0.6579	0.8301	0.9105
Yahoo_Entertainment	0.3746	2.91	0.1447	0.6833	0.9597	0.9439
Yahoo_Health	0.1583	4.90	0.1969	0.6848	0.7873	0.8954
Yahoo_Recreation	0.3388	4.01	0.3057	0.6732	0.9277	0.8260
Yahoo_Reference	0.3514	3.42	0.1791	0.6889	0.7438	0.9460
Yahoo_Science	0.4765	9.58	0.3392	0.5335	0.9369	0.9234
Yahoo_Social	0.2401	3.53	0.1494	0.7805	0.8969	0.9727
yeast	0.2851	7.00	0.2902	0.7148	0.7638	0.8316
Yelp	0.2463	1.50	0.2490	0.8285	0.8547	0.8821

Table 40: Detailed results for NS(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5689	5.49	0.5088	0.5218	0.9863	0.9854
3s-bbc1000	0.6944	3.03	0.7917	0.4495	0.9147	0.9105
3s-guardian1000	0.6129	2.42	0.5323	0.5452	0.8680	0.8423
3s-reuters1000	0.8667	2.47	0.7333	0.4028	0.8363	0.8260
bibtex	0.8081	76.44	0.5040	0.2094	0.9397	0.9101
birds	0.4872	6.92	0.5017	0.5404	0.8608	0.9578
bookmarks	0.9158	105.03	0.6070	0.1179	0.9026	0.8778
CAL500	0.4314	151.12	0.6551	0.3382	0.7607	0.8888
corel16k001	0.9877	116.97	0.7720	0.0523	0.9505	0.8394
Corel5k	0.8380	178.48	0.7106	0.0908	0.6523	0.8698
delicious	0.9602	919.70	0.6658	0.0405	0.9458	0.8171
emotions	0.4000	2.17	0.3000	0.7178	0.8790	0.8917
enron	0.4620	28.73	0.4713	0.3974	0.7575	0.8931
EukaryoteGO	0.3900	6.32	0.3973	0.6196	0.9922	0.9922
EukaryotePseAAC	0.8610	9.75	0.8183	0.2525	0.9666	0.9680
Eurlex-dc	0.8826	63.42	0.2818	0.2572	0.7485	0.9815
Eurlex-sm	0.5323	37.10	0.2978	0.4773	0.8151	0.9802
foodtruck	0.3171	3.93	0.3051	0.6635	0.7614	0.8018
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0357	0.12	0.0143	0.9774	0.8745	0.9987
GnegativePseAAC	0.4214	1.49	0.3804	0.7111	0.8458	0.9724
GpositivePseAAC	0.5000	1.10	0.3654	0.6731	0.9192	0.8984
HumanGO	0.2830	1.66	0.1892	0.7915	0.9848	0.9842
HumanPseAAC	0.7492	5.65	0.6847	0.3848	0.9337	0.9398
Image	0.4600	1.34	0.2867	0.6945	0.9033	0.9080
IMDB-ECC-F	0.9045	15.89	0.8793	0.1829	0.9158	0.9021
IMDB-F	0.8640	14.64	0.7180	0.2468	0.9165	0.9040
LLOG-F	0.7705	28.41	0.6455	0.2758	0.5767	0.9630
mediamill	0.4128	55.30	0.3903	0.5018	0.9771	0.9849
medical	0.3061	12.21	0.2976	0.6743	0.5511	0.9952
Music	0.5500	2.88	0.4620	0.6229	0.8423	0.8501
OHSUMED-F	0.5398	9.72	0.5319	0.4780	0.9523	0.9575
PlantGO	0.3061	1.40	0.2670	0.7607	0.9873	0.9822
PlantPseAAC	0.7959	4.43	0.7500	0.3570	0.9283	0.9279
rcv1subset1	0.8667	54.82	0.5721	0.1878	0.8989	0.9361
REUTERS-K500-EX2	0.8667	41.83	0.5689	0.2395	0.7589	0.9473
scene	0.3651	1.33	0.2863	0.7363	0.9547	0.9571
sider_CDK_ECFP4	0.3662	23.63	0.3906	0.7021	0.4922	0.6669
sider_MordredDesc	0.4296	23.72	0.4699	0.6868	0.6596	0.7356
sider_RDKit_desc	0.3944	23.69	0.4782	0.6793	0.5341	0.6613
SLASHDOT-F	0.5910	8.33	0.5387	0.4653	0.7383	0.9591
Stackex_chemistry	0.8649	102.17	0.7155	0.1346	0.8661	0.9122
Stackex_chess	0.8869	125.77	0.6482	0.1387	0.5249	0.9519
Stackex_coffee	0.8696	68.13	0.6938	0.1890	0.2551	0.9732
Stackex_cooking	0.8580	224.69	0.6321	0.1229	0.8773	0.9119
Stackex_cs	0.7933	156.27	0.6339	0.1518	0.8537	0.9308
Stackex_philosophy	0.9497	133.63	0.6415	0.1211	0.7126	0.9328
tmc2007-500	0.5080	8.58	0.4562	0.5116	0.9150	0.9261
tox21_CDK_ECFP4	0.6233	6.21	0.6214	0.4584	0.8832	0.8887
tox21_RDKit_desc	0.6027	6.03	0.5046	0.4839	0.8421	0.8519
VirusGO	0.0952	0.62	0.1270	0.9145	0.8147	0.9889
VirusPseAAC	0.8095	3.14	0.8095	0.3722	0.7761	0.8881
Water-quality	0.5000	9.75	0.5077	0.6023	0.7274	0.7471
Yahoo_Arts	0.7477	9.95	0.4247	0.3849	0.8928	0.9187
Yahoo_Business	0.1774	3.82	0.1678	0.7857	0.8195	0.9648
Yahoo_Computers	0.5012	7.27	0.3561	0.5411	0.8480	0.9121
Yahoo_Education	0.7531	9.91	0.5821	0.3610	0.8491	0.9243
Yahoo_Entertainment	0.5405	4.77	0.4912	0.5513	0.9545	0.9501
Yahoo_Health	0.5407	7.67	0.4325	0.5376	0.8149	0.9566
Yahoo_Recreation	0.6056	6.72	0.3971	0.4834	0.9189	0.8926
Yahoo_Reference	0.5056	4.76	0.4705	0.5923	0.8020	0.9864
Yahoo_Science	0.6967	14.29	0.5484	0.3757	0.9293	0.9379
Yahoo_Social	0.6353	9.02	0.4787	0.4466	0.8882	0.9455
yeast	0.4628	7.70	0.4727	0.6321	0.8353	0.8740
Yelp	0.2114	1.50	0.2450	0.8372	0.8852	0.9024

Table 41: Detailed results for NS(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4311	2.07	0.1012	0.6973	0.8301	0.8291
3s-bbc1000	0.6389	2.19	0.3449	0.5588	0.5158	0.5172
3s-guardian1000	0.7097	2.65	0.1371	0.4696	0.5071	0.5277
3s-reuters1000	0.7667	2.20	0.2667	0.4744	0.5614	0.5281
bibtex	0.6946	54.68	0.0467	0.3049	0.7196	0.7520
birds	0.5641	8.28	0.3701	0.4830	0.6161	0.6946
bookmarks	0.9340	81.75	0.3040	0.2403	0.7131	0.6967
CAL500	0.6275	168.53	0.3703	0.2891	0.5342	0.5850
corel16k001	0.9049	100.81	0.0045	0.0859	0.6115	0.5338
Corel5k	0.7320	275.71	0.0724	0.1613	0.4284	0.5732
delicious	0.9403	850.71	0.2039	0.0391	0.6674	0.5711
emotions	0.3167	2.25	0.1875	0.7422	0.8047	0.7678
enron	0.5848	27.53	0.1832	0.4205	0.6022	0.7698
EukaryoteGO	0.4595	4.47	0.0112	0.6092	0.6160	0.7298
EukaryotePseAAC	0.8867	5.42	0.0843	0.3102	0.6753	0.7338
Eurlex-dc	0.6865	98.62	0.2679	0.3455	0.5591	0.8266
Eurlex-sm	0.5716	59.81	0.3289	0.4021	0.6071	0.8289
foodtruck	0.4146	4.85	0.2598	0.6435	0.5557	0.7016
genbase	0.4328	2.64	0.0000	0.6546	0.5971	0.8709
GnegativeGO	0.1571	0.39	0.0143	0.9042	0.6148	0.8432
GnegativePseAAC	0.2571	0.69	0.1107	0.8321	0.6438	0.8694
GpositivePseAAC	0.2885	0.56	0.0769	0.8173	0.8055	0.8362
HumanGO	0.3923	2.45	0.0359	0.6903	0.6516	0.6669
HumanPseAAC	0.7428	4.06	0.2577	0.4446	0.5807	0.7006
Image	0.2950	0.99	0.1350	0.7989	0.7907	0.7937
IMDB-ECC-F	0.7498	14.46	0.0704	0.2967	0.5410	0.5802
IMDB-F	0.9506	14.25	0.3544	0.2306	0.6611	0.6323
LLOG-F	0.8197	32.80	0.0471	0.2358	0.3305	0.5991
mediamill	0.9884	41.73	0.2508	0.0949	0.6860	0.6985
medical	0.4694	7.17	0.0609	0.6015	0.3883	0.8230
Music	0.3833	2.55	0.1870	0.7228	0.7786	0.7262
OHSUMED-F	0.5298	6.55	0.0471	0.5391	0.7227	0.7378
PlantGO	0.5714	1.95	0.0204	0.6068	0.6149	0.6956
PlantPseAAC	0.6020	2.93	0.2738	0.5562	0.7539	0.7687
rcv1subset1	0.6700	58.94	0.0741	0.2316	0.5512	0.5905
REUTERS-K500-EX2	0.8183	32.25	0.0088	0.2702	0.5382	0.7234
scene	0.3444	0.83	0.0643	0.7837	0.8803	0.8399
sider_CDK_ECFP4	0.4225	22.97	0.2758	0.6610	0.6695	0.7020
sider_MordredDesc	0.4789	23.37	0.3130	0.6436	0.6192	0.6623
sider_RDKit_desc	0.3944	23.01	0.3279	0.6621	0.6108	0.6666
SLASHDOT-F	0.5145	4.78	0.0099	0.5771	0.5247	0.7517
Stackex_chemistry	0.8851	86.86	0.0363	0.1227	0.5193	0.6382
Stackex_chess	0.9405	125.23	0.0309	0.0964	0.3028	0.6327
Stackex_coffee	1.0000	75.87	0.0389	0.0652	0.1537	0.5541
Stackex_cooking	0.8812	234.36	0.0332	0.0989	0.5553	0.5817
Stackex_cs	0.7597	149.77	0.0477	0.1746	0.5542	0.6484
Stackex_philosophy	0.9372	129.26	0.0482	0.0890	0.4233	0.6131
tmc2007-500	0.4101	6.13	0.1291	0.6518	0.8124	0.8387
tox21_CDK_ECFP4	0.5822	4.89	0.0932	0.5310	0.6117	0.6791
tox21_RDKit_desc	0.6781	5.45	0.2432	0.4601	0.6116	0.6596
VirusGO	0.1905	0.48	0.0238	0.8995	0.6839	0.8931
VirusPseAAC	0.2857	1.00	0.2857	0.7897	0.6710	0.8261
Water-quality	0.4623	10.08	0.3150	0.5983	0.6275	0.6500
Yahoo_Arts	0.6182	10.66	0.2187	0.4141	0.5558	0.6065
Yahoo_Business	0.1435	7.32	0.1329	0.7702	0.5747	0.8201
Yahoo_Computers	0.4651	11.36	0.4552	0.5049	0.5557	0.7270
Yahoo_Education	0.6791	14.34	0.4765	0.3765	0.5072	0.6323
Yahoo_Entertainment	0.6787	8.03	0.3870	0.4254	0.5875	0.6723
Yahoo_Health	0.4224	9.91	0.2759	0.5896	0.5359	0.7645
Yahoo_Recreation	0.5729	6.66	0.2686	0.5200	0.6360	0.7059
Yahoo_Reference	0.5666	7.75	0.2729	0.5055	0.4904	0.7525
Yahoo_Science	0.8958	17.56	0.3536	0.1984	0.5543	0.5767
Yahoo_Social	0.5479	10.13	0.2965	0.5021	0.5161	0.7659
yeast	0.4628	8.36	0.3053	0.6266	0.6274	0.6866
Yelp	0.2403	1.66	0.1438	0.8153	0.7000	0.7464

Table 42: Detailed results for NS(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2943	1.29	0.0744	0.8005	0.9569	0.9473
3s-bbc1000	0.6944	2.33	0.5833	0.5111	0.6670	0.6472
3s-guardian1000	0.6452	2.42	0.3226	0.5315	0.5286	0.5804
3s-reuters1000	0.8000	1.87	0.6833	0.4897	0.6758	0.6396
bibtex	0.4405	34.27	0.1572	0.5119	0.8702	0.8835
birds	0.3590	4.51	0.0902	0.6770	0.7776	0.8659
bookmarks	0.9158	105.03	0.6070	0.1179	0.9026	0.8778
CAL500	0.4118	164.71	0.3136	0.4318	0.4730	0.6870
corel16k001	0.9434	113.66	0.5797	0.0656	0.6174	0.4761
Corel5k	0.9880	295.22	0.1722	0.0875	0.4085	0.5118
delicious	0.5289	917.66	0.5951	0.1372	0.6938	0.5663
emotions	0.2333	1.62	0.1083	0.8302	0.8524	0.8754
enron	0.3567	27.46	0.2111	0.5348	0.5771	0.7722
EukaryoteGO	0.2432	0.87	0.0193	0.8526	0.9827	0.9735
EukaryotePseAAC	0.5843	5.02	0.1944	0.5442	0.7193	0.7943
Eurlex-dc	0.8888	45.98	0.0646	0.1885	0.7028	0.9034
Eurlex-sm	0.8320	31.91	0.1262	0.2890	0.7839	0.9129
foodtruck	0.2439	3.54	0.3211	0.7656	0.5848	0.7798
genbase	0.0000	0.24	0.0000	0.9950	0.6667	0.9998
GnegativeGO	0.1786	0.71	0.1232	0.8643	0.7960	0.8908
GnegativePseAAC	0.3857	0.86	0.2554	0.7685	0.7365	0.9130
GpositivePseAAC	0.2308	0.35	0.0385	0.8670	0.9323	0.9305
HumanGO	0.2154	1.02	0.0489	0.8580	0.9594	0.9379
HumanPseAAC	0.5659	3.89	0.2273	0.5615	0.6429	0.7419
Image	0.4400	0.99	0.1025	0.7390	0.8283	0.8034
IMDB-ECC-F	0.9138	18.63	0.6235	0.1788	0.5756	0.4771
IMDB-F	0.6359	14.66	0.4028	0.3501	0.5749	0.6029
LLOG-F	0.9918	31.00	0.2781	0.1923	0.4348	0.6548
mediamill	1.0000	0.00	0.0323	1.0000	0.0000	0.0000
medical	0.5816	17.39	0.2951	0.4655	0.5221	0.6522
Music	0.2000	1.85	0.1708	0.8292	0.8605	0.8782
OHSUMED-F	0.3912	5.57	0.1411	0.6475	0.8206	0.8427
PlantGO	0.4388	1.93	0.1973	0.6777	0.9657	0.8488
PlantPseAAC	0.6735	3.46	0.2134	0.4744	0.7331	0.7266
rcv1subset1	0.4083	20.06	0.0923	0.5777	0.8222	0.9116
REUTERS-K500-EX2	0.9567	20.86	0.3223	0.1799	0.6787	0.8291
scene	0.2905	0.63	0.0892	0.8267	0.9219	0.8995
sider_CDK_ECFP4	0.3732	21.02	0.1745	0.7804	0.4948	0.7243
sider_MordredDesc	0.4718	20.99	0.1949	0.7548	0.4997	0.7275
sider_RDKit_desc	0.3169	20.06	0.1332	0.7981	0.4827	0.7401
SLASHDOT-F	1.0000	5.96	0.2043	0.2961	0.6549	0.7563
Stackex_chemistry	0.6509	81.30	0.2493	0.2836	0.6896	0.6816
Stackex_chess	0.5893	108.76	0.2724	0.3311	0.4216	0.7152
Stackex_coffee	0.8261	52.61	0.2545	0.1796	0.1679	0.7122
Stackex_cooking	0.4957	141.29	0.2266	0.3966	0.7082	0.7922
Stackex_cs	0.4535	114.05	0.2407	0.4055	0.7101	0.7822
Stackex_philosophy	0.5477	106.83	0.2813	0.3818	0.5513	0.7302
tmc2007-500	0.3958	4.08	0.0992	0.7113	0.8992	0.9091
tox21_CDK_ECFP4	0.5445	5.11	0.1334	0.5460	0.6622	0.7035
tox21_RDKit_desc	0.5171	5.00	0.1022	0.5521	0.6497	0.7130
VirusGO	0.0476	0.48	0.0675	0.9484	0.7689	0.9564
VirusPseAAC	0.3810	1.05	0.0357	0.7317	0.6645	0.8599
Water-quality	0.2075	9.10	0.2115	0.7154	0.7004	0.7397
Yahoo_Arts	0.4246	6.73	0.1853	0.6281	0.7586	0.7953
Yahoo_Business	0.1319	3.54	0.1364	0.8701	0.7382	0.9191
Yahoo_Computers	0.3976	7.91	0.2943	0.6537	0.7343	0.7976
Yahoo_Education	0.4431	7.94	0.1787	0.6149	0.7211	0.7956
Yahoo_Entertainment	0.4988	4.28	0.1476	0.6329	0.7932	0.8310
Yahoo_Health	0.5668	7.27	0.1719	0.5923	0.6973	0.8204
Yahoo_Recreation	0.3655	4.22	0.1897	0.6939	0.8277	0.8297
Yahoo_Reference	0.3935	6.73	0.1258	0.6737	0.6577	0.8008
Yahoo_Science	0.3981	8.74	0.1658	0.6420	0.7779	0.7993
Yahoo_Social	0.3754	8.01	0.1593	0.6876	0.7416	0.8166
yeast	0.2149	7.08	0.1988	0.7473	0.6704	0.8083
Yelp	0.1735	1.48	0.1575	0.8583	0.7656	0.8185

Table 43: Detailed results for NS(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3689	3.07	0.2890	0.7076	0.9784	0.9790
3s-bbc1000	0.7222	1.92	0.6065	0.5491	0.7524	0.7428
3s-guardian1000	0.6129	1.81	0.2903	0.5866	0.6986	0.7084
3s-reuters1000	0.7333	1.97	0.4667	0.5031	0.7110	0.6993
bibtex	0.6149	48.65	0.1290	0.3053	0.9020	0.8464
birds	0.4872	6.21	0.3042	0.5691	0.7609	0.8565
bookmarks	0.9792	96.09	0.2596	0.0760	0.6440	0.6383
CAL500	0.4706	154.96	0.3247	0.2748	0.5512	0.6551
corel16k001	0.9208	78.65	0.1253	0.1590	0.8398	0.7357
Corel5k	0.9660	206.84	0.1987	0.0559	0.5844	0.7066
delicious	0.9528	847.81	0.0330	0.0586	0.6832	0.7228
emotions	0.3833	2.23	0.1722	0.7157	0.8429	0.7961
enron	0.3977	22.52	0.2180	0.4548	0.6372	0.8477
EukaryoteGO	0.2098	0.94	0.0434	0.8672	0.9924	0.9930
EukaryotePseAAC	0.9447	10.58	0.9082	0.1879	0.9521	0.9520
Eurlex-dc	0.6120	56.67	0.3131	0.4172	0.7533	0.9689
Eurlex-sm	0.5013	38.39	0.3744	0.4973	0.8237	0.9778
foodtruck	0.2927	4.27	0.3444	0.6625	0.6880	0.6968
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.09	0.0143	0.9863	0.8731	0.9988
GnegativePseAAC	0.3286	1.36	0.2643	0.7580	0.7865	0.9403
GpositivePseAAC	0.4231	0.73	0.1731	0.7468	0.8258	0.8526
HumanGO	0.2219	0.79	0.0551	0.8602	0.9783	0.9805
HumanPseAAC	0.9132	6.95	0.8644	0.2606	0.9135	0.9083
Image	0.6300	1.83	0.5854	0.5804	0.8846	0.8833
IMDB-ECC-F	0.9220	17.71	0.7256	0.1694	0.8858	0.7503
IMDB-F	0.6365	12.42	0.3934	0.3694	0.8947	0.8110
LLOG-F	0.8852	21.26	0.4142	0.2391	0.5334	0.8824
mediamill	0.3254	65.84	0.3491	0.4304	0.9309	0.8658
medical	0.1531	3.39	0.0944	0.8653	0.5461	0.9928
Music	0.3000	2.63	0.1963	0.7225	0.8394	0.7933
OHSUMED-F	0.3855	7.97	0.3957	0.6009	0.9517	0.9578
PlantGO	0.2857	1.19	0.1088	0.8113	0.9642	0.9690
PlantPseAAC	0.8673	4.14	0.6633	0.3454	0.7941	0.8106
rcv1subset1	0.5700	49.01	0.5669	0.3452	0.9089	0.9576
REUTERS-K500-EX2	0.7250	23.86	0.4089	0.3471	0.7710	0.9290
scene	0.3942	1.52	0.3195	0.7043	0.8955	0.8879
sider_CDK_ECFP4	0.3310	23.96	0.5471	0.6386	0.7265	0.5949
sider_MordredDesc	0.4014	24.22	0.4551	0.6986	0.7825	0.7587
sider_RDKit_desc	0.4789	23.10	0.4475	0.6830	0.7544	0.7318
SLASHDOT-F	0.3958	5.11	0.3179	0.6529	0.7411	0.9687
Stackex_chemistry	0.9784	86.33	0.5181	0.0842	0.8904	0.8718
Stackex_chess	0.8929	95.05	0.3839	0.1463	0.5307	0.8853
Stackex_coffee	0.7391	62.22	0.4870	0.2496	0.2432	0.9416
Stackex_cooking	0.8406	168.98	0.2560	0.1464	0.8712	0.7988
Stackex_cs	0.9221	127.60	0.4840	0.0892	0.8668	0.8115
Stackex_philosophy	0.9171	112.96	0.5183	0.1489	0.7261	0.8959
tmc2007-500	0.3937	6.09	0.2788	0.6459	0.9573	0.9331
tox21_CDK_ECFP4	0.6849	5.10	0.1334	0.4558	0.7912	0.7159
tox21_RDKit_desc	0.8425	6.63	0.3913	0.3504	0.8349	0.6610
VirusGO	0.0476	0.33	0.0476	0.9643	0.8153	0.9853
VirusPseAAC	0.4762	0.95	0.0476	0.7175	0.6562	0.8447
Water-quality	0.3113	9.81	0.3002	0.6391	0.7702	0.6737
Yahoo_Arts	0.5421	11.29	0.5759	0.4637	0.9310	0.9714
Yahoo_Business	0.1185	3.44	0.1785	0.8303	0.8536	0.9780
Yahoo_Computers	0.4618	6.63	0.5323	0.5740	0.8937	0.9802
Yahoo_Education	0.6367	9.57	0.6690	0.4563	0.8974	0.9880
Yahoo_Entertainment	0.5153	4.22	0.5506	0.5860	0.9886	0.9896
Yahoo_Health	0.3789	6.67	0.3546	0.6561	0.8288	0.9817
Yahoo_Recreation	0.4178	6.12	0.4489	0.6221	0.9880	0.9887
Yahoo_Reference	0.4645	4.74	0.4525	0.6180	0.8021	0.9860
Yahoo_Science	0.5661	13.35	0.5804	0.4592	0.9518	0.9780
Yahoo_Social	0.4356	7.45	0.4691	0.5891	0.9123	0.9915
yeast	0.2603	6.87	0.3985	0.7086	0.8715	0.8922
Yelp	0.2522	1.57	0.2910	0.8194	0.9007	0.9086

Table 44: Detailed results for NS(US+DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6606	3.66	0.2968	0.5241	0.9488	0.9408
3s-bbc1000	0.8333	3.22	0.7407	0.3787	0.6037	0.6004
3s-guardian1000	0.8065	2.77	0.5968	0.4204	0.5730	0.6310
3s-reuters1000	0.8333	2.20	0.6917	0.4544	0.7062	0.6550
bibtex	0.9784	53.48	0.4482	0.1173	0.9474	0.9157
birds	0.7179	5.46	0.3675	0.4648	0.8226	0.9163
bookmarks	0.9797	84.12	0.4641	0.0799	0.9043	0.8716
CAL500	0.5882	150.49	0.6498	0.2943	0.6970	0.8188
corel16k001	0.9862	98.24	0.5462	0.0546	0.9088	0.7585
Corel5k	0.9400	183.24	0.6972	0.1054	0.6466	0.8262
delicious	0.9807	907.22	0.6349	0.0312	0.9560	0.7669
emotions	0.5000	2.22	0.3944	0.6809	0.8627	0.8644
enron	0.8129	24.12	0.4294	0.3346	0.7373	0.8727
EukaryoteGO	0.2535	1.10	0.0638	0.8424	0.9974	0.9970
EukaryotePseAAC	0.8958	8.07	0.3930	0.2709	0.8380	0.8068
Eurlex-dc	0.8986	38.46	0.1481	0.1779	0.7430	0.9823
Eurlex-sm	0.6868	27.90	0.1808	0.3075	0.8061	0.9719
foodtruck	0.5122	5.66	0.2886	0.5165	0.6321	0.6856
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0643	0.15	0.0143	0.9625	0.8741	0.9994
GnegativePseAAC	0.4357	1.09	0.2589	0.7247	0.7820	0.9286
GpositivePseAAC	0.4231	0.81	0.2692	0.7388	0.8690	0.8638
HumanGO	0.2862	1.08	0.1005	0.8148	0.9819	0.9813
HumanPseAAC	0.9132	5.50	0.6019	0.2851	0.7350	0.7718
Image	0.4700	1.30	0.2858	0.6932	0.8534	0.8536
IMDB-ECC-F	0.9197	14.91	0.6037	0.1963	0.6138	0.6031
IMDB-F	0.9195	15.32	0.6288	0.1930	0.6376	0.6303
LLOG-F	0.9016	21.84	0.4467	0.2266	0.5261	0.9162
mediamill	0.9518	56.63	0.4335	0.1390	0.8710	0.8802
medical	0.2143	3.61	0.0944	0.8197	0.5477	0.9947
Music	0.4833	2.42	0.3801	0.6794	0.8349	0.8426
OHSUMED-F	0.7301	8.00	0.3218	0.3994	0.8887	0.8756
PlantGO	0.3061	1.08	0.1616	0.7907	0.9908	0.9685
PlantPseAAC	0.8469	3.70	0.5638	0.3805	0.7873	0.7951
rcv1subset1	0.9333	48.72	0.5029	0.1496	0.8741	0.8865
REUTERS-K500-EX2	0.9333	24.46	0.2687	0.1871	0.7380	0.9292
scene	0.4772	1.23	0.2728	0.6946	0.9245	0.9257
sider_CDK_ECFP4	0.5000	24.52	0.6042	0.5913	0.6196	0.5948
sider_MordredDesc	0.4859	24.21	0.6652	0.5755	0.6533	0.6083
sider_RDKit_desc	0.4366	24.39	0.6001	0.6066	0.5716	0.5839
SLASHDOT-F	0.8865	7.30	0.4332	0.3243	0.7164	0.8977
Stackex_chemistry	0.9138	86.16	0.5132	0.1134	0.8682	0.8719
Stackex_chess	0.8690	93.22	0.3653	0.1751	0.5245	0.9346
Stackex_coffee	0.7391	66.96	0.6096	0.2576	0.2559	0.9703
Stackex_cooking	0.9807	147.27	0.3052	0.0730	0.8812	0.8887
Stackex_cs	0.7976	109.26	0.3478	0.1800	0.8585	0.8984
Stackex_philosophy	0.9523	101.32	0.3797	0.1001	0.7086	0.9084
tmc2007-500	0.6024	6.80	0.2977	0.4796	0.9176	0.8978
tox21_CDK_ECFP4	0.6986	5.84	0.4852	0.4545	0.7312	0.7320
tox21_RDKit_desc	0.7671	6.27	0.5475	0.4173	0.7217	0.7243
VirusGO	0.0952	0.43	0.0952	0.9325	0.8272	0.9849
VirusPseAAC	0.5238	1.57	0.3095	0.6421	0.7531	0.9257
Water-quality	0.5377	10.25	0.5120	0.5676	0.6715	0.6707
Yahoo_Arts	0.8064	10.34	0.3998	0.3136	0.8270	0.8241
Yahoo_Business	0.3102	6.48	0.1442	0.6413	0.7490	0.8656
Yahoo_Computers	0.6442	7.81	0.2829	0.4397	0.7815	0.8691
Yahoo_Education	0.7905	8.97	0.5141	0.3678	0.7946	0.8788
Yahoo_Entertainment	0.6748	4.63	0.4480	0.4975	0.8985	0.8981
Yahoo_Health	0.5407	6.52	0.3455	0.5400	0.7767	0.9295
Yahoo_Recreation	0.7069	6.36	0.3843	0.4399	0.8761	0.8657
Yahoo_Reference	0.7410	5.12	0.3705	0.4414	0.7409	0.9261
Yahoo_Science	0.8180	12.47	0.4580	0.3152	0.8800	0.8843
Yahoo_Social	0.8276	7.78	0.3106	0.3582	0.8477	0.9153
yeast	0.4628	9.33	0.4989	0.5588	0.6870	0.7004
Yelp	0.2562	1.64	0.2340	0.8042	0.8397	0.8393

Table 45: Detailed results for NS(US+NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4471	1.93	0.1816	0.6885	0.8338	0.8276
3s-bbc1000	0.5833	2.03	0.2917	0.5844	0.5505	0.5670
3s-guardian1000	0.7742	2.71	0.2742	0.4565	0.6061	0.6094
3s-reuters1000	0.8333	2.20	0.3333	0.4517	0.6242	0.5815
bibtex	0.7081	46.48	0.3558	0.2933	0.7729	0.7743
birds	0.6410	7.90	0.3635	0.4465	0.6107	0.6883
bookmarks	0.8344	81.73	0.2296	0.1972	0.6901	0.6800
CAL500	0.7451	168.69	0.4412	0.2867	0.5301	0.6037
corel16k001	0.9710	81.39	0.3634	0.0721	0.6509	0.6405
Corel5k	0.7800	272.42	0.3692	0.1723	0.4182	0.5799
delicious	0.9466	850.13	0.6893	0.0425	0.6725	0.5987
emotions	0.4167	2.17	0.1944	0.7239	0.7970	0.7550
enron	0.5614	27.61	0.2510	0.4225	0.5588	0.7187
EukaryoteGO	0.2934	3.24	0.1081	0.7691	0.7835	0.8693
EukaryotePseAAC	0.8777	6.25	0.1025	0.3030	0.7132	0.7065
Eurlex-dc	0.6715	84.59	0.2779	0.3676	0.5950	0.8600
Eurlex-sm	0.5499	61.71	0.3402	0.4119	0.6237	0.8108
foodtruck	0.6829	6.00	0.2617	0.4506	0.6032	0.6377
genbase	0.1493	1.10	0.0000	0.8727	0.5666	0.9589
GnegativeGO	0.1071	0.47	0.0232	0.9181	0.6865	0.9234
GnegativePseAAC	0.2214	0.64	0.0714	0.8541	0.6592	0.8758
GpositivePseAAC	0.2885	0.42	0.0192	0.8365	0.8347	0.8711
HumanGO	0.2637	1.88	0.1314	0.8015	0.8213	0.8813
HumanPseAAC	0.7396	4.45	0.2881	0.4365	0.6100	0.6883
Image	0.3350	0.98	0.1325	0.7820	0.7984	0.7974
IMDB-ECC-F	0.8849	13.94	0.2976	0.2296	0.6080	0.5872
IMDB-F	0.8927	14.22	0.3092	0.2209	0.5952	0.5938
LLOG-F	0.8033	26.70	0.1066	0.2725	0.3250	0.6671
mediamill	0.9895	47.42	0.3856	0.0789	0.6944	0.6390
medical	0.4490	5.49	0.1173	0.6346	0.4029	0.8873
Music	0.4500	2.32	0.2662	0.7231	0.8236	0.7729
OHSUMED-F	0.5980	6.79	0.1379	0.4942	0.7369	0.7099
PlantGO	0.4898	2.51	0.3019	0.6353	0.6927	0.7894
PlantPseAAC	0.6122	3.08	0.3019	0.5474	0.7335	0.7505
rcv1subset1	0.5717	41.10	0.2613	0.3971	0.8171	0.8380
REUTERS-K500-EX2	0.8517	24.42	0.0721	0.2517	0.5551	0.7947
scene	0.2988	0.78	0.0488	0.8064	0.8751	0.8482
sider_CDK_ECFP4	0.4859	23.99	0.3928	0.5946	0.6797	0.6514
sider_MordredDesc	0.5070	23.87	0.3697	0.6271	0.6263	0.6440
sider_RDKit_desc	0.4507	23.96	0.4106	0.6130	0.5944	0.5895
SLASHDOT-F	0.6332	4.45	0.2122	0.5187	0.5496	0.7748
Stackex_chemistry	0.8865	78.53	0.0738	0.1186	0.5459	0.6786
Stackex_chess	0.9107	121.96	0.0491	0.1022	0.3041	0.6276
Stackex_coffee	1.0000	70.61	0.0320	0.0563	0.1479	0.5625
Stackex_cooking	0.8957	220.15	0.1247	0.0907	0.5303	0.6012
Stackex_cs	0.7749	133.03	0.1254	0.1750	0.5625	0.6995
Stackex_philosophy	0.9221	115.34	0.1996	0.0943	0.4193	0.6557
tmc2007-500	0.4755	6.27	0.1669	0.6145	0.8333	0.8350
tox21_CDK_ECFP4	0.5925	5.20	0.1479	0.5212	0.6415	0.6773
tox21_RDKit_desc	0.6918	5.83	0.2472	0.4301	0.6191	0.6576
VirusGO	0.2857	0.71	0.0357	0.8392	0.6586	0.8725
VirusPseAAC	0.2857	1.19	0.2857	0.7762	0.5913	0.7708
Water-quality	0.5189	10.27	0.3830	0.5669	0.6436	0.6401
Yahoo_Arts	0.5834	11.96	0.3255	0.4685	0.6340	0.6125
Yahoo_Business	0.1845	7.72	0.1563	0.7725	0.6355	0.8104
Yahoo_Computers	0.4618	13.01	0.5113	0.5218	0.6224	0.6995
Yahoo_Education	0.6725	13.80	0.5893	0.4316	0.5844	0.6715
Yahoo_Entertainment	0.6544	8.18	0.5324	0.4530	0.6882	0.6683
Yahoo_Health	0.4180	9.63	0.2798	0.6303	0.6157	0.7852
Yahoo_Recreation	0.5931	7.47	0.4912	0.5065	0.7103	0.7068
Yahoo_Reference	0.5641	7.04	0.3464	0.5391	0.6529	0.8375
Yahoo_Science	0.8087	17.67	0.6025	0.2973	0.7157	0.7052
Yahoo_Social	0.5396	12.44	0.4693	0.5194	0.7584	0.7937
yeast	0.5950	8.86	0.3150	0.5176	0.6645	0.6157
Yelp	0.2861	1.87	0.1197	0.7785	0.7367	0.7326

Table 46: Detailed results for NS(US+SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4653	1.64	0.0732	0.6861	0.9385	0.9268
3s-bbc1000	0.6944	2.11	0.4167	0.5333	0.6168	0.6148
3s-guardian1000	0.7419	2.48	0.3710	0.4833	0.5658	0.5365
3s-reuters1000	0.8667	2.27	0.4000	0.4208	0.6168	0.5764
bibtex	0.7230	61.41	0.3905	0.3014	0.8783	0.7611
birds	0.5385	6.49	0.1471	0.5133	0.7160	0.7643
bookmarks	0.9363	79.48	0.2015	0.1200	0.8129	0.7219
CAL500	0.7059	164.37	0.8166	0.2464	0.8386	0.8639
corel16k001	0.8765	117.94	0.5659	0.1016	0.7054	0.4925
Corel5k	0.7560	194.03	0.5615	0.1617	0.4747	0.7694
delicious	0.9932	949.60	0.3519	0.0749	0.7833	0.6289
emotions	0.2000	1.52	0.1389	0.8497	0.8584	0.8864
enron	0.4269	22.40	0.1627	0.4991	0.6154	0.8185
EukaryoteGO	0.3565	4.60	0.2432	0.6660	0.9858	0.8147
EukaryotePseAAC	0.8314	9.46	0.3067	0.3140	0.7385	0.5918
Eurlex-dc	0.6596	71.72	0.2936	0.3456	0.6962	0.8390
Eurlex-sm	0.4796	46.07	0.0722	0.4494	0.7148	0.8663
foodtruck	0.5366	3.12	0.2150	0.6460	0.6756	0.8019
genbase	0.0000	0.43	0.0000	0.9910	0.6667	0.9971
GnegativeGO	0.1571	0.34	0.0143	0.9026	0.8539	0.9403
GnegativePseAAC	0.2000	0.61	0.0500	0.8610	0.7595	0.9298
GpositivePseAAC	0.2500	0.40	0.1154	0.8526	0.9323	0.9161
HumanGO	0.4469	3.21	0.2044	0.6372	0.9462	0.7903
HumanPseAAC	0.8360	5.34	0.2305	0.3502	0.6678	0.6320
Image	0.3250	0.77	0.0838	0.8116	0.8534	0.8440
IMDB-ECC-F	0.8713	13.57	0.3580	0.2414	0.6068	0.6228
IMDB-F	0.8850	15.39	0.4081	0.2143	0.6057	0.5814
LLOG-F	0.7459	17.60	0.1946	0.3320	0.4230	0.7881
mediamill	1.0000	0.02	0.0261	0.9788	0.0030	0.0000
medical	0.3571	4.37	0.0944	0.7095	0.5250	0.9215
Music	0.2333	1.95	0.1903	0.8029	0.8470	0.8620
OHSUMED-F	0.5298	7.20	0.1951	0.5273	0.8032	0.7777
PlantGO	0.3469	0.93	0.1046	0.7774	0.9406	0.9269
PlantPseAAC	0.6122	2.72	0.3588	0.5593	0.7481	0.7867
rcv1subset1	0.5117	29.88	0.1373	0.4759	0.8355	0.8525
REUTERS-K500-EX2	0.7867	20.83	0.0805	0.2898	0.7068	0.8350
scene	0.1743	0.36	0.0851	0.9001	0.9454	0.9501
sider_CDK_ECFP4	0.4296	21.95	0.2419	0.6869	0.6104	0.6835
sider_MordredDesc	0.5282	23.22	0.2941	0.6664	0.5848	0.6494
sider_RDKit_desc	0.2183	23.25	0.2856	0.6968	0.5761	0.6503
SLASHDOT-F	0.7942	7.74	0.6286	0.3297	0.6469	0.6701
Stackex_chemistry	0.8506	82.96	0.3431	0.1660	0.7105	0.6859
Stackex_chess	0.7798	63.40	0.1023	0.2407	0.4387	0.8457
Stackex_coffee	0.8261	42.65	0.1594	0.1462	0.1695	0.7558
Stackex_cooking	0.8348	137.49	0.2404	0.1578	0.7370	0.7861
Stackex_cs	0.6872	89.11	0.1660	0.2498	0.7441	0.8234
Stackex_philosophy	0.8166	80.84	0.2401	0.1931	0.5655	0.7834
tmc2007-500	0.4794	5.84	0.1260	0.5950	0.8877	0.8509
tox21_CDK_ECFP4	0.5753	5.41	0.2136	0.5301	0.6525	0.6623
tox21_RDKit_desc	0.5103	5.21	0.1654	0.5569	0.6843	0.7050
VirusGO	0.0476	0.38	0.0476	0.9563	0.7729	0.9636
VirusPseAAC	0.3333	0.67	0.0000	0.8071	0.6384	0.8987
Water-quality	0.3868	9.57	0.3347	0.6494	0.6887	0.6977
Yahoo_Arts	0.5995	9.05	0.3241	0.4688	0.6599	0.7211
Yahoo_Business	0.5579	8.24	0.0812	0.5428	0.6756	0.7842
Yahoo_Computers	0.4795	9.18	0.1730	0.5705	0.6631	0.7695
Yahoo_Education	0.5960	9.44	0.3295	0.4910	0.6445	0.7596
Yahoo_Entertainment	0.4815	5.31	0.3000	0.5980	0.7367	0.7878
Yahoo_Health	0.4311	8.55	0.2260	0.5904	0.6218	0.7971
Yahoo_Recreation	0.5783	6.25	0.2471	0.5146	0.7316	0.7466
Yahoo_Reference	0.5778	7.08	0.2221	0.5217	0.6115	0.7937
Yahoo_Science	0.6190	11.58	0.3636	0.4425	0.6752	0.7351
Yahoo_Social	0.4455	10.53	0.3576	0.5839	0.6340	0.7517
yeast	0.5124	11.43	0.4398	0.5382	0.7477	0.5831
Yelp	0.2114	1.53	0.1055	0.8409	0.8108	0.8141

Table 47: Detailed results for NS(US+RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4399	2.29	0.1378	0.6856	0.9490	0.9232
3s-bbc1000	0.7222	2.39	0.4583	0.5039	0.6250	0.6130
3s-guardian1000	0.8065	2.55	0.4677	0.4395	0.4492	0.5108
3s-reuters1000	0.9333	2.27	0.7500	0.3942	0.6209	0.5804
bibtex	0.8527	34.23	0.2786	0.2607	0.8836	0.8855
birds	0.4872	5.49	0.1857	0.5813	0.7418	0.8437
bookmarks	0.9792	96.09	0.2596	0.0760	0.6440	0.6383
CAL500	0.7843	153.73	0.4873	0.2378	0.5142	0.6617
corel16k001	0.9818	81.47	0.3835	0.0809	0.7346	0.7096
Corel5k	0.8260	194.99	0.4939	0.1152	0.4709	0.7315
delicious	0.9795	898.16	0.5309	0.0232	0.6320	0.4961
emotions	0.3833	2.12	0.2569	0.7254	0.7966	0.8041
enron	0.4620	21.07	0.2276	0.5019	0.6750	0.8296
EukaryoteGO	0.1930	0.50	0.0058	0.8895	0.9960	0.9971
EukaryotePseAAC	0.8636	5.92	0.2182	0.3401	0.6825	0.7700
Eurlex-dc	0.4987	11.98	0.0484	0.6028	0.7355	0.9814
Eurlex-sm	0.3375	14.72	0.0694	0.6881	0.8009	0.9691
foodtruck	0.7805	4.90	0.3947	0.4572	0.6244	0.6935
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.11	0.0143	0.9854	0.8731	0.9985
GnegativePseAAC	0.3643	1.11	0.0446	0.7454	0.7470	0.8885
GpositivePseAAC	0.3846	0.71	0.0962	0.7628	0.7505	0.7904
HumanGO	0.2830	0.76	0.0408	0.8381	0.9831	0.9869
HumanPseAAC	0.8489	4.96	0.3730	0.3507	0.6964	0.6788
Image	0.5200	1.31	0.3742	0.6680	0.7272	0.7238
IMDB-ECC-F	0.8003	13.01	0.2422	0.2648	0.7780	0.6788
IMDB-F	0.8548	11.48	0.2155	0.2836	0.7274	0.7038
LLOG-F	0.9508	18.22	0.2009	0.1837	0.4443	0.8150
mediamill	0.9406	58.54	0.2907	0.1565	0.8517	0.7704
medical	0.2041	1.17	0.0281	0.8640	0.5459	0.9917
Music	0.4000	2.25	0.2477	0.7319	0.7946	0.7879
OHSUMED-F	0.6892	7.20	0.1982	0.4344	0.8882	0.8142
PlantGO	0.1735	0.46	0.0408	0.8935	0.9851	0.9842
PlantPseAAC	0.8163	4.07	0.4090	0.3726	0.6318	0.6743
rcv1subset1	0.7633	23.37	0.2545	0.3660	0.8394	0.8989
REUTERS-K500-EX2	0.8383	13.08	0.1425	0.3259	0.7070	0.9091
scene	0.3983	0.77	0.0747	0.7647	0.8793	0.8733
sider_CDK_ECFP4	0.4718	24.61	0.5211	0.5737	0.6825	0.5490
sider_MordredDesc	0.5423	24.89	0.5790	0.5439	0.5805	0.4704
sider_RDKit_desc	0.5352	24.47	0.4721	0.5727	0.5531	0.5393
SLASHDOT-F	0.8443	5.99	0.7570	0.3767	0.7133	0.8539
Stackex_chemistry	0.8506	58.70	0.1619	0.1790	0.7441	0.8064
Stackex_chess	0.7976	73.45	0.2022	0.2114	0.4657	0.8445
Stackex_coffee	0.6522	62.00	0.4082	0.3038	0.2408	0.9282
Stackex_cooking	0.9459	143.66	0.1505	0.1237	0.7310	0.7990
Stackex_cs	0.7121	97.74	0.1425	0.2232	0.7436	0.8229
Stackex_philosophy	0.8467	88.20	0.2458	0.1831	0.6075	0.8199
tmc2007-500	0.4105	5.06	0.1853	0.6427	0.9252	0.9123
tox21_CDK_ECFP4	0.6507	5.04	0.0808	0.4805	0.5902	0.6664
tox21_RDKit_desc	0.6404	5.51	0.1187	0.4557	0.6213	0.6408
VirusGO	0.0476	0.38	0.0476	0.9563	0.8112	0.9846
VirusPseAAC	0.5714	1.05	0.0714	0.6817	0.6211	0.8345
Water-quality	0.4717	10.08	0.3959	0.5822	0.6263	0.6274
Yahoo_Arts	0.8291	11.79	0.4154	0.3067	0.8470	0.7668
Yahoo_Business	0.1319	4.77	0.1410	0.7757	0.7821	0.9003
Yahoo_Computers	0.6072	8.51	0.4293	0.4711	0.8120	0.8615
Yahoo_Education	0.7830	13.17	0.6246	0.2947	0.7905	0.7864
Yahoo_Entertainment	0.5868	4.97	0.4765	0.5257	0.9066	0.8908
Yahoo_Health	0.5190	6.17	0.1964	0.5726	0.7691	0.9098
Yahoo_Recreation	0.5588	6.20	0.3544	0.5305	0.9387	0.8896
Yahoo_Reference	0.8506	6.77	0.3804	0.3378	0.7325	0.8315
Yahoo_Science	0.6827	13.09	0.3717	0.3839	0.8520	0.8158
Yahoo_Social	0.5198	9.26	0.3546	0.5230	0.8207	0.8566
yeast	0.6612	10.29	0.6099	0.4473	0.7392	0.5527
Yelp	0.2642	1.52	0.2745	0.8187	0.8903	0.8936

Table 48: Detailed results for NSSC(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5861	5.82	0.5283	0.5043	0.9868	0.9854
3s-bbc1000	0.6944	3.03	0.7917	0.4495	0.9147	0.9105
3s-guardian1000	0.6129	2.42	0.5323	0.5452	0.8680	0.8423
3s-reuters1000	0.8667	2.47	0.7333	0.4028	0.8363	0.8260
bibtex	0.8081	76.44	0.5040	0.2094	0.9397	0.9101
birds	0.4872	6.92	0.5017	0.5404	0.8608	0.9578
bookmarks	0.8372	87.41	0.3993	0.1968	0.8544	0.8320
CAL500	0.4510	149.31	0.6577	0.3293	0.7535	0.8807
corel16k001	0.9877	116.97	0.7720	0.0523	0.9505	0.8394
Corel5k	0.8380	178.48	0.7106	0.0908	0.6523	0.8698
delicious	0.9602	919.70	0.6658	0.0405	0.9458	0.8171
emotions	0.4000	2.17	0.3000	0.7178	0.8790	0.8917
enron	0.4269	24.55	0.4071	0.4745	0.7847	0.9268
EukaryoteGO	0.3892	6.30	0.3965	0.6203	0.9922	0.9924
EukaryotePseAAC	0.8610	9.75	0.8183	0.2525	0.9666	0.9680
Eurlex-dc	0.8826	63.42	0.2818	0.2572	0.7485	0.9815
Eurlex-sm	0.5323	37.10	0.2978	0.4773	0.8151	0.9802
foodtruck	0.3171	3.93	0.3051	0.6635	0.7614	0.8018
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0357	0.12	0.0143	0.9774	0.8745	0.9987
GnegativePseAAC	0.4214	1.49	0.3804	0.7111	0.8458	0.9724
GpositivePseAAC	0.5000	1.10	0.3654	0.6731	0.9192	0.8984
HumanGO	0.3826	3.32	0.3462	0.6748	0.9834	0.9814
HumanPseAAC	0.7492	5.65	0.6847	0.3848	0.9337	0.9398
Image	0.4600	1.34	0.2867	0.6945	0.9033	0.9080
IMDB-ECC-F	0.8763	15.55	0.8840	0.2031	0.9412	0.9423
IMDB-F	0.7251	13.28	0.6888	0.3281	0.9250	0.9237
LLOG-F	0.7705	28.41	0.6455	0.2758	0.5767	0.9630
mediamill	0.4105	55.11	0.3862	0.5069	0.9786	0.9859
medical	0.3061	12.21	0.2976	0.6743	0.5511	0.9952
Music	0.5500	2.88	0.4620	0.6229	0.8423	0.8501
OHSUMED-F	0.5398	9.72	0.5319	0.4780	0.9523	0.9575
PlantGO	0.3125	1.43	0.2726	0.7557	0.9875	0.9818
PlantPseAAC	0.7959	4.43	0.7500	0.3570	0.9283	0.9279
rcv1subset1	0.8667	54.82	0.5721	0.1878	0.8989	0.9361
REUTERS-K500-EX2	0.8832	42.88	0.5932	0.2290	0.7583	0.9529
scene	0.3651	1.33	0.2863	0.7363	0.9547	0.9571
sider_CDK_ECFP4	0.3662	23.63	0.3906	0.7021	0.4922	0.6669
sider_MordredDesc	0.4296	23.72	0.4699	0.6868	0.6596	0.7356
sider_RDKit_desc	0.3944	23.69	0.4782	0.6793	0.5341	0.6613
SLASHDOT-F	0.5820	8.51	0.5454	0.4652	0.7383	0.9590
Stackex_chemistry	0.8660	100.74	0.7251	0.1320	0.8684	0.9233
Stackex_chess	0.8869	125.77	0.6482	0.1387	0.5249	0.9519
Stackex_coffee	0.8696	68.13	0.6938	0.1890	0.2551	0.9732
Stackex_cooking	0.8580	225.43	0.6439	0.1234	0.8755	0.9130
Stackex_cs	0.7931	156.67	0.6341	0.1514	0.8542	0.9309
Stackex_philosophy	0.9497	134.22	0.6459	0.1204	0.7117	0.9324
tmc2007-500	0.5220	6.70	0.3591	0.5364	0.9243	0.9271
tox21_CDK_ECFP4	0.6233	6.21	0.6214	0.4584	0.8832	0.8887
tox21_RDKit_desc	0.6027	6.03	0.5046	0.4839	0.8421	0.8519
VirusGO	0.0952	0.62	0.1270	0.9145	0.8147	0.9889
VirusPseAAC	0.8095	3.14	0.8095	0.3722	0.7761	0.8881
Water-quality	0.5000	9.85	0.5112	0.5998	0.7233	0.7429
Yahoo_Arts	0.7477	9.95	0.4247	0.3849	0.8928	0.9187
Yahoo_Business	0.1774	3.82	0.1678	0.7857	0.8195	0.9648
Yahoo_Computers	0.5012	7.27	0.3561	0.5411	0.8480	0.9121
Yahoo_Education	0.7531	9.91	0.5821	0.3610	0.8491	0.9243
Yahoo_Entertainment	0.5405	4.77	0.4912	0.5513	0.9545	0.9501
Yahoo_Health	0.5407	7.67	0.4325	0.5376	0.8149	0.9566
Yahoo_Recreation	0.6056	6.72	0.3971	0.4834	0.9189	0.8926
Yahoo_Reference	0.5056	4.76	0.4705	0.5923	0.8020	0.9864
Yahoo_Science	0.6967	14.29	0.5484	0.3757	0.9293	0.9379
Yahoo_Social	0.6353	9.02	0.4787	0.4466	0.8882	0.9455
yeast	0.4711	7.78	0.4698	0.6348	0.8385	0.8777
Yelp	0.2114	1.50	0.2450	0.8372	0.8852	0.9024

Table 49: Detailed results for NSSC(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4249	3.71	0.3259	0.6579	0.9794	0.9808
3s-bbc1000	0.5556	2.50	0.5833	0.5655	0.8614	0.8641
3s-guardian1000	0.7742	2.61	0.5806	0.4629	0.8146	0.7973
3s-reuters1000	0.8667	2.63	0.7333	0.3900	0.8538	0.8414
bibtex	0.5500	71.91	0.5514	0.3949	0.9877	0.9881
birds	0.4872	6.92	0.5017	0.5404	0.8608	0.9578
bookmarks	0.7093	99.81	0.6921	0.2849	0.9903	0.9908
CAL500	0.4314	151.53	0.6733	0.3266	0.7555	0.8861
corel16k001	0.8606	109.46	0.8132	0.1359	0.9707	0.9723
Corel5k	0.8120	167.93	0.8164	0.1451	0.6618	0.9794
delicious	0.8658	914.12	0.8357	0.0673	0.9809	0.9765
emotions	0.4000	2.17	0.3000	0.7178	0.8790	0.8917
enron	0.3509	23.36	0.4277	0.5517	0.8090	0.9701
EukaryoteGO	0.2111	1.93	0.1423	0.8317	0.9948	0.9962
EukaryotePseAAC	0.7323	8.11	0.6669	0.3636	0.9582	0.9642
Eurlex-dc	0.3187	52.66	0.2766	0.6866	0.7589	0.9994
Eurlex-sm	0.2202	28.45	0.2509	0.7298	0.8288	0.9985
foodtruck	0.2683	3.95	0.3491	0.7101	0.7495	0.8633
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.11	0.0143	0.9845	0.8745	0.9994
GnegativePseAAC	0.4000	1.40	0.3393	0.7188	0.8359	0.9698
GpositivePseAAC	0.4423	0.92	0.2885	0.7163	0.9178	0.9196
HumanGO	0.2637	1.59	0.1787	0.8042	0.9851	0.9895
HumanPseAAC	0.7235	5.48	0.6654	0.4017	0.9264	0.9344
Image	0.4500	1.39	0.3079	0.6924	0.9103	0.9148
IMDB-ECC-F	0.7624	13.26	0.6142	0.3235	0.8453	0.8652
IMDB-F	0.7582	13.38	0.6020	0.3244	0.8345	0.8567
LLOG-F	0.7705	29.53	0.6878	0.2733	0.5803	0.9789
mediamill	0.4121	54.31	0.3810	0.5103	0.9781	0.9856
medical	0.2143	5.27	0.1429	0.8179	0.5516	0.9972
Music	0.5500	2.88	0.4620	0.6229	0.8423	0.8501
OHSUMED-F	0.4810	8.87	0.4715	0.5294	0.9601	0.9651
PlantGO	0.2245	0.99	0.1361	0.8412	0.9838	0.9880
PlantPseAAC	0.7959	4.33	0.6939	0.3709	0.9077	0.9131
rcv1subset1	0.5783	48.18	0.5873	0.3836	0.9251	0.9859
REUTERS-K500-EX2	0.6750	33.77	0.5280	0.3936	0.7725	0.9871
scene	0.3651	1.33	0.2863	0.7363	0.9547	0.9571
sider_CDK_ECFP4	0.3662	22.75	0.4245	0.7161	0.6016	0.7214
sider_MordredDesc	0.4014	22.84	0.4476	0.6971	0.5967	0.7087
sider_RDKit_desc	0.3803	23.32	0.4631	0.6989	0.5673	0.7063
SLASHDOT-F	0.4908	6.72	0.4208	0.5637	0.7386	0.9688
Stackex_chemistry	0.7687	98.01	0.7669	0.1967	0.9053	0.9853
Stackex_chess	0.6964	126.03	0.6987	0.2431	0.5436	0.9915
Stackex_coffee	0.7826	67.78	0.7047	0.2134	0.2548	0.9844
Stackex_cooking	0.6831	210.99	0.6736	0.2456	0.9179	0.9916
Stackex_cs	0.6190	151.10	0.6688	0.2840	0.8900	0.9925
Stackex_philosophy	0.6985	125.66	0.6779	0.2591	0.7416	0.9900
tmc2007-500	0.4045	6.20	0.3597	0.6375	0.9549	0.9649
tox21_CDK_ECFP4	0.5308	5.41	0.4943	0.5364	0.8867	0.8968
tox21_RDKit_desc	0.5890	5.75	0.5028	0.5071	0.8744	0.8830
VirusGO	0.0476	0.43	0.0794	0.9526	0.8251	0.9925
VirusPseAAC	0.6667	2.00	0.4286	0.5480	0.6605	0.8312
Water-quality	0.4717	9.96	0.5195	0.6054	0.7297	0.7494
Yahoo_Arts	0.5367	9.59	0.4551	0.5158	0.9074	0.9489
Yahoo_Business	0.1444	3.19	0.1568	0.8571	0.8467	0.9904
Yahoo_Computers	0.4378	6.33	0.4004	0.6065	0.8812	0.9775
Yahoo_Education	0.5270	7.80	0.4356	0.5530	0.8668	0.9613
Yahoo_Entertainment	0.4454	3.96	0.3906	0.6283	0.9641	0.9681
Yahoo_Health	0.3116	5.39	0.2947	0.7194	0.8253	0.9852
Yahoo_Recreation	0.4396	5.48	0.3646	0.6254	0.9574	0.9584
Yahoo_Reference	0.4110	4.45	0.3712	0.6566	0.8025	0.9872
Yahoo_Science	0.5365	12.16	0.4893	0.5013	0.9535	0.9795
Yahoo_Social	0.3564	5.84	0.3085	0.6845	0.9106	0.9898
yeast	0.4669	7.72	0.4700	0.6386	0.8344	0.8771
Yelp	0.1107	1.24	0.1488	0.9085	0.9205	0.9285

Table 50: Detailed results for NSSC(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5861	5.82	0.5283	0.5043	0.9868	0.9854
3s-bbc1000	0.6944	3.03	0.7917	0.4495	0.9147	0.9105
3s-guardian1000	0.6129	2.42	0.5323	0.5452	0.8680	0.8423
3s-reuters1000	0.8667	2.47	0.7333	0.4028	0.8363	0.8260
bibtex	0.8081	76.44	0.5040	0.2094	0.9397	0.9101
birds	0.4872	6.92	0.5017	0.5404	0.8608	0.9578
bookmarks	0.9158	105.03	0.6070	0.1179	0.9026	0.8778
CAL500	0.4510	149.31	0.6577	0.3293	0.7535	0.8807
corel16k001	0.9877	116.97	0.7720	0.0523	0.9505	0.8394
Corel5k	0.8380	178.48	0.7106	0.0908	0.6523	0.8698
delicious	0.9602	919.70	0.6658	0.0405	0.9458	0.8171
emotions	0.4000	2.17	0.3000	0.7178	0.8790	0.8917
enron	0.4269	24.55	0.4071	0.4745	0.7847	0.9268
EukaryoteGO	0.3892	6.30	0.3965	0.6203	0.9922	0.9924
EukaryotePseAAC	0.8610	9.75	0.8183	0.2525	0.9666	0.9680
Eurlex-dc	0.8826	63.42	0.2818	0.2572	0.7485	0.9815
Eurlex-sm	0.5323	37.10	0.2978	0.4773	0.8151	0.9802
foodtruck	0.3171	3.93	0.3051	0.6635	0.7614	0.8018
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0357	0.12	0.0143	0.9774	0.8745	0.9987
GnegativePseAAC	0.4214	1.49	0.3804	0.7111	0.8458	0.9724
GpositivePseAAC	0.5000	1.10	0.3654	0.6731	0.9192	0.8984
HumanGO	0.3826	3.32	0.3462	0.6748	0.9834	0.9814
HumanPseAAC	0.7492	5.65	0.6847	0.3848	0.9337	0.9398
Image	0.4600	1.34	0.2867	0.6945	0.9033	0.9080
IMDB-ECC-F	0.8763	15.55	0.8840	0.2031	0.9412	0.9423
IMDB-F	0.7251	13.28	0.6888	0.3281	0.9250	0.9237
LLOG-F	0.7705	28.41	0.6455	0.2758	0.5767	0.9630
mediamill	0.4105	55.11	0.3862	0.5069	0.9786	0.9859
medical	0.3061	12.21	0.2976	0.6743	0.5511	0.9952
Music	0.5500	2.88	0.4620	0.6229	0.8423	0.8501
OHSUMED-F	0.5398	9.72	0.5319	0.4780	0.9523	0.9575
PlantGO	0.3125	1.43	0.2726	0.7557	0.9875	0.9818
PlantPseAAC	0.7959	4.43	0.7500	0.3570	0.9283	0.9279
rcv1subset1	0.8667	54.82	0.5721	0.1878	0.8989	0.9361
REUTERS-K500-EX2	0.8832	42.88	0.5932	0.2290	0.7583	0.9529
scene	0.3651	1.33	0.2863	0.7363	0.9547	0.9571
sider_CDK_ECFP4	0.3662	23.63	0.3906	0.7021	0.4922	0.6669
sider_MordredDesc	0.4296	23.72	0.4699	0.6868	0.6596	0.7356
sider_RDKit_desc	0.3944	23.69	0.4782	0.6793	0.5341	0.6613
SLASHDOT-F	0.5820	8.51	0.5454	0.4652	0.7383	0.9590
Stackex_chemistry	0.8660	100.74	0.7251	0.1320	0.8684	0.9233
Stackex_chess	0.8869	125.77	0.6482	0.1387	0.5249	0.9519
Stackex_coffee	0.8696	68.13	0.6938	0.1890	0.2551	0.9732
Stackex_cooking	0.8580	225.43	0.6439	0.1234	0.8755	0.9130
Stackex_cs	0.7931	156.67	0.6341	0.1514	0.8542	0.9309
Stackex_philosophy	0.9497	134.22	0.6459	0.1204	0.7117	0.9324
tmc2007-500	0.5220	6.70	0.3591	0.5364	0.9243	0.9271
tox21_CDK_ECFP4	0.6233	6.21	0.6214	0.4584	0.8832	0.8887
tox21_RDKit_desc	0.6027	6.03	0.5046	0.4839	0.8421	0.8519
VirusGO	0.0952	0.62	0.1270	0.9145	0.8147	0.9889
VirusPseAAC	0.8095	3.14	0.8095	0.3722	0.7761	0.8881
Water-quality	0.5000	9.85	0.5112	0.5998	0.7233	0.7429
Yahoo_Arts	0.7477	9.95	0.4247	0.3849	0.8928	0.9187
Yahoo_Business	0.1774	3.82	0.1678	0.7857	0.8195	0.9648
Yahoo_Computers	0.5012	7.27	0.3561	0.5411	0.8480	0.9121
Yahoo_Education	0.7531	9.91	0.5821	0.3610	0.8491	0.9243
Yahoo_Entertainment	0.5405	4.77	0.4912	0.5513	0.9545	0.9501
Yahoo_Health	0.5407	7.67	0.4325	0.5376	0.8149	0.9566
Yahoo_Recreation	0.6056	6.72	0.3971	0.4834	0.9189	0.8926
Yahoo_Reference	0.5056	4.76	0.4705	0.5923	0.8020	0.9864
Yahoo_Science	0.6967	14.29	0.5484	0.3757	0.9293	0.9379
Yahoo_Social	0.6353	9.02	0.4787	0.4466	0.8882	0.9455
yeast	0.4628	7.79	0.4721	0.6345	0.8381	0.8744
Yelp	0.2114	1.50	0.2450	0.8372	0.8852	0.9024

Table 51: Detailed results for NSSC(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3834	2.70	0.1152	0.7098	0.9162	0.8775
3s-bbc1000	0.6111	2.28	0.5764	0.5481	0.8788	0.6760
3s-guardian1000	0.6129	2.29	0.4597	0.5349	0.8277	0.6734
3s-reuters1000	0.7667	2.53	0.5250	0.4558	0.7534	0.5965
bibtex	0.5189	60.47	0.4044	0.4391	0.9391	0.9297
birds	0.4872	6.92	0.5017	0.5404	0.8604	0.9571
bookmarks	0.8737	87.42	0.4352	0.2342	0.8642	0.8512
CAL500	0.4902	151.33	0.6344	0.3370	0.7509	0.8806
corel16k001	0.9303	72.77	0.1982	0.1649	0.7941	0.7657
Corel5k	0.9120	157.86	0.5446	0.1199	0.6106	0.8925
delicious	0.8633	898.59	0.6021	0.0818	0.9251	0.8839
emotions	0.3833	2.27	0.3236	0.7154	0.8643	0.8703
enron	0.2982	21.39	0.2595	0.6002	0.7475	0.9292
EukaryoteGO	0.1905	1.08	0.0596	0.8741	0.9922	0.9921
EukaryotePseAAC	0.6795	5.19	0.3667	0.4868	0.9080	0.9230
Eurlex-dc	0.3104	51.38	0.2611	0.6950	0.7555	0.9964
Eurlex-sm	0.1922	24.41	0.1786	0.7635	0.8146	0.9843
foodtruck	0.4146	4.02	0.3935	0.6548	0.7668	0.8830
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0214	0.10	0.0107	0.9857	0.8743	0.9980
GnegativePseAAC	0.4071	1.30	0.3143	0.7225	0.8315	0.9643
GpositivePseAAC	0.4423	0.92	0.2885	0.7163	0.9178	0.9196
HumanGO	0.2122	1.06	0.1174	0.8529	0.9809	0.9848
HumanPseAAC	0.7235	4.83	0.5404	0.4336	0.8739	0.8880
Image	0.4200	1.28	0.2542	0.7191	0.8815	0.8849
IMDB-ECC-F	0.6492	7.65	0.1931	0.4730	0.7780	0.8131
IMDB-F	0.6344	7.75	0.1839	0.4783	0.7670	0.8143
LLOG-F	0.7787	28.89	0.6639	0.2775	0.5658	0.9662
mediamill	0.2793	30.35	0.1007	0.6558	0.8705	0.9416
medical	0.2143	4.95	0.1378	0.8227	0.5515	0.9965
Music	0.4833	2.57	0.4051	0.6642	0.8396	0.8488
OHSUMED-F	0.4034	6.27	0.1778	0.6342	0.8148	0.8262
PlantGO	0.2347	1.18	0.1514	0.8285	0.9811	0.9834
PlantPseAAC	0.7551	4.16	0.6582	0.4010	0.9019	0.9067
rcv1subset1	0.5300	42.69	0.3473	0.4580	0.8245	0.8614
REUTERS-K500-EX2	0.6767	31.99	0.3922	0.4155	0.7339	0.9250
scene	0.3651	1.21	0.2635	0.7456	0.9349	0.9361
sider_CDK_ECFP4	0.2887	21.21	0.1840	0.7641	0.5838	0.7390
sider_MordredDesc	0.3099	22.65	0.3293	0.7245	0.5618	0.6971
sider_RDKit_desc	0.3592	22.55	0.3434	0.7143	0.5435	0.7036
SLASHDOT-F	0.4749	3.32	0.0622	0.6289	0.7144	0.8863
Stackex_chemistry	0.7284	72.90	0.4055	0.2926	0.8247	0.8665
Stackex_chess	0.6190	109.93	0.5412	0.3209	0.5292	0.9636
Stackex_coffee	0.7826	67.22	0.6286	0.2365	0.2541	0.9804
Stackex_cooking	0.6425	184.22	0.4436	0.3176	0.8772	0.9160
Stackex_cs	0.5996	134.67	0.4384	0.3477	0.8117	0.9075
Stackex_philosophy	0.6583	103.88	0.4187	0.3279	0.6977	0.9226
tmc2007-500	0.3098	4.51	0.1168	0.7336	0.8530	0.9017
tox21_CDK_ECFP4	0.5719	4.99	0.2048	0.5556	0.7839	0.7363
tox21_RDKit_desc	0.5651	5.27	0.3234	0.5314	0.7460	0.7631
VirusGO	0.0476	0.43	0.0794	0.9526	0.8251	0.9925
VirusPseAAC	0.7143	2.14	0.4286	0.5139	0.6265	0.8050
Water-quality	0.4528	9.79	0.3957	0.6255	0.7187	0.7374
Yahoo_Arts	0.4633	6.44	0.2673	0.6018	0.7788	0.8248
Yahoo_Business	0.1176	2.66	0.0972	0.8820	0.7560	0.9387
Yahoo_Computers	0.3896	4.76	0.2776	0.6790	0.7557	0.8855
Yahoo_Education	0.4963	4.57	0.2890	0.6092	0.7989	0.9033
Yahoo_Entertainment	0.3881	2.97	0.1016	0.6901	0.8922	0.8961
Yahoo_Health	0.2747	4.16	0.1666	0.7576	0.7315	0.9198
Yahoo_Recreation	0.4076	4.22	0.3508	0.6652	0.8996	0.8378
Yahoo_Reference	0.3499	3.61	0.1271	0.7130	0.7325	0.9160
Yahoo_Science	0.5039	7.71	0.1574	0.5777	0.8623	0.8552
Yahoo_Social	0.3020	4.75	0.1333	0.7441	0.7978	0.9027
yeast	0.3802	7.53	0.3281	0.6708	0.7542	0.8221
Yelp	0.2094	1.43	0.1693	0.8494	0.8379	0.8486

Table 52: Detailed results for NSSC(US+DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6945	3.95	0.3300	0.4980	0.9546	0.9466
3s-bbc1000	0.8056	2.72	0.6343	0.4328	0.6478	0.6499
3s-guardian1000	0.7097	2.71	0.5645	0.4806	0.6560	0.6684
3s-reuters1000	0.8667	2.70	0.7000	0.3883	0.6337	0.6343
bibtex	0.9703	51.40	0.4007	0.1239	0.9427	0.9111
birds	0.6667	5.92	0.3524	0.5196	0.8459	0.9365
bookmarks	0.9783	85.93	0.4787	0.0804	0.9111	0.8715
CAL500	0.6471	149.53	0.6606	0.2847	0.6876	0.8136
corel16k001	0.9913	100.90	0.5557	0.0540	0.9210	0.7649
Corel5k	0.8820	176.50	0.6026	0.1132	0.6456	0.8234
delicious	0.9820	903.96	0.5785	0.0345	0.9579	0.7852
emotions	0.5333	2.47	0.4583	0.6496	0.7698	0.7678
enron	0.8012	23.27	0.4036	0.3148	0.7367	0.8880
EukaryoteGO	0.2474	2.70	0.1113	0.8072	0.9956	0.9865
EukaryotePseAAC	0.8983	8.14	0.3937	0.2622	0.8179	0.8103
Eurlex-dc	0.8727	37.97	0.1918	0.2374	0.7472	0.9842
Eurlex-sm	0.6667	25.89	0.1397	0.3555	0.8113	0.9806
foodtruck	0.5366	4.73	0.2627	0.5416	0.6540	0.7197
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0357	0.11	0.0143	0.9780	0.8733	0.9992
GnegativePseAAC	0.3786	1.15	0.2679	0.7517	0.8229	0.9593
GpositivePseAAC	0.4038	0.81	0.3269	0.7388	0.8314	0.8278
HumanGO	0.3151	1.79	0.1755	0.7775	0.9852	0.9815
HumanPseAAC	0.8842	5.45	0.5924	0.3093	0.7505	0.7714
Image	0.5050	1.31	0.2812	0.6829	0.8381	0.8391
IMDB-ECC-F	0.9221	16.04	0.6439	0.1855	0.6427	0.6074
IMDB-F	0.9250	15.82	0.6470	0.1914	0.6574	0.6312
LLOG-F	0.8934	18.47	0.3509	0.2312	0.5383	0.9145
mediamill	0.9539	57.52	0.4401	0.1441	0.8701	0.8792
medical	0.2653	3.32	0.0791	0.8001	0.5443	0.9935
Music	0.5167	2.58	0.4495	0.6644	0.8359	0.8392
OHSUMED-F	0.7373	8.01	0.3434	0.3909	0.8683	0.8648
PlantGO	0.2708	0.59	0.0964	0.8427	0.9931	0.9801
PlantPseAAC	0.8367	4.18	0.6148	0.3731	0.8203	0.8185
rcv1subset1	0.9450	44.54	0.4635	0.1484	0.8721	0.9025
REUTERS-K500-EX2	0.9347	24.86	0.3108	0.1924	0.7490	0.9475
scene	0.4108	1.02	0.2199	0.7411	0.9313	0.9335
sider_CDK_ECFP4	0.4014	24.56	0.5740	0.6244	0.5598	0.5752
sider_MordredDesc	0.5141	24.50	0.6614	0.5699	0.6066	0.5715
sider_RDKit_desc	0.3873	24.54	0.5711	0.6248	0.5585	0.5934
SLASHDOT-F	0.8571	7.76	0.6685	0.3373	0.7109	0.8926
Stackex_chemistry	0.9424	78.67	0.4436	0.1038	0.8718	0.8654
Stackex_chess	0.8750	85.57	0.3811	0.1858	0.5297	0.9458
Stackex_coffee	0.8261	65.26	0.5707	0.2381	0.2527	0.9761
Stackex_cooking	0.9430	154.80	0.3833	0.0992	0.8845	0.8971
Stackex_cs	0.8332	109.99	0.3386	0.1510	0.8462	0.8930
Stackex_philosophy	0.9497	108.51	0.4864	0.1070	0.7114	0.8959
tmc2007-500	0.5878	6.94	0.3194	0.4885	0.9091	0.8986
tox21_CDK_ECFP4	0.7295	6.28	0.4829	0.4251	0.6564	0.6511
tox21_RDKit_desc	0.7774	6.33	0.5371	0.4003	0.6973	0.7006
VirusGO	0.0952	0.48	0.0635	0.9381	0.8272	0.9893
VirusPseAAC	0.6667	1.48	0.3095	0.5921	0.7701	0.9177
Water-quality	0.5660	10.06	0.5438	0.5625	0.6584	0.6583
Yahoo_Arts	0.8465	9.77	0.4656	0.3079	0.8398	0.8727
Yahoo_Business	0.3369	6.96	0.1146	0.6100	0.7446	0.8382
Yahoo_Computers	0.6378	8.90	0.3159	0.4310	0.7768	0.8422
Yahoo_Education	0.7298	8.35	0.4961	0.4193	0.8104	0.8941
Yahoo_Entertainment	0.6811	4.53	0.4185	0.4910	0.9044	0.8866
Yahoo_Health	0.5005	6.01	0.3302	0.5736	0.7856	0.9339
Yahoo_Recreation	0.7358	6.24	0.3842	0.4185	0.8541	0.8527
Yahoo_Reference	0.6787	5.39	0.3796	0.4608	0.7452	0.9164
Yahoo_Science	0.7885	11.70	0.4373	0.3367	0.8668	0.8962
Yahoo_Social	0.8061	7.61	0.2803	0.3725	0.8424	0.9209
yeast	0.5165	8.93	0.4950	0.5522	0.6830	0.6992
Yelp	0.2403	1.53	0.2212	0.8234	0.8515	0.8532

Table 53: Detailed results for NSSC(US+NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7140	3.02	0.2276	0.5097	0.9541	0.9563
3s-bbc1000	0.8056	2.69	0.6944	0.4363	0.6155	0.6164
3s-guardian1000	0.6774	2.35	0.4758	0.5242	0.7972	0.7859
3s-reuters1000	0.9000	2.57	0.6833	0.3789	0.6327	0.6102
bibtex	0.9527	40.75	0.4674	0.1636	0.9370	0.9477
birds	0.6154	5.90	0.3564	0.4829	0.8189	0.9201
bookmarks	0.9247	70.87	0.4273	0.1472	0.8949	0.9016
CAL500	0.5882	149.69	0.6736	0.2731	0.6905	0.8089
corel16k001	0.9855	106.09	0.5844	0.0529	0.7417	0.7193
Corel5k	0.8940	166.04	0.6013	0.1331	0.5637	0.8513
delicious	0.9857	897.53	0.5771	0.0333	0.7939	0.7644
emotions	0.4167	2.38	0.3847	0.6913	0.7905	0.7946
enron	0.8480	22.52	0.4420	0.3321	0.7197	0.8891
EukaryoteGO	0.2458	0.88	0.0438	0.8466	0.9962	0.9966
EukaryotePseAAC	0.8790	7.58	0.3681	0.2866	0.8172	0.8240
Eurlex-dc	0.8500	25.51	0.2141	0.2943	0.7488	0.9915
Eurlex-sm	0.6145	17.70	0.1229	0.4450	0.8141	0.9885
foodtruck	0.4390	4.88	0.2228	0.5923	0.6835	0.7258
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0714	0.20	0.0321	0.9563	0.8736	0.9991
GnegativePseAAC	0.4071	1.06	0.2196	0.7327	0.8191	0.9567
GpositivePseAAC	0.5577	1.08	0.3654	0.6522	0.7814	0.8194
HumanGO	0.3055	1.10	0.0924	0.8094	0.9859	0.9893
HumanPseAAC	0.8842	5.23	0.5210	0.3147	0.7697	0.7964
Image	0.4500	1.27	0.2975	0.7077	0.8516	0.8508
IMDB-ECC-F	0.9165	14.66	0.5715	0.1966	0.6674	0.6570
IMDB-F	0.9196	15.18	0.5815	0.1953	0.6426	0.6405
LLOG-F	0.9180	20.43	0.4240	0.2223	0.5355	0.9209
mediamill	0.9570	57.35	0.4585	0.1375	0.8711	0.8779
medical	0.3265	4.29	0.1454	0.7664	0.5493	0.9955
Music	0.4667	2.50	0.4269	0.6830	0.8359	0.8421
OHSUMED-F	0.7179	7.55	0.3458	0.4155	0.8760	0.8849
PlantGO	0.3061	0.67	0.1173	0.8205	0.9891	0.9863
PlantPseAAC	0.7959	3.79	0.5238	0.4031	0.7596	0.7673
rcv1subset1	0.9100	38.61	0.4538	0.2120	0.8775	0.9312
REUTERS-K500-EX2	0.9117	23.27	0.2921	0.2324	0.7420	0.9546
scene	0.4398	1.17	0.2718	0.7160	0.9251	0.9310
sider_CDK_ECFP4	0.4155	24.13	0.6822	0.6093	0.6636	0.6564
sider_MordredDesc	0.4718	24.70	0.6540	0.6020	0.5920	0.5874
sider_RDKit_desc	0.3873	24.32	0.5883	0.6344	0.6366	0.6413
SLASHDOT-F	0.7309	5.66	0.3813	0.4544	0.7101	0.9258
Stackex_chemistry	0.9296	65.32	0.3926	0.1279	0.8353	0.9077
Stackex_chess	0.8571	80.33	0.3515	0.2250	0.5231	0.9621
Stackex_coffee	0.8261	73.70	0.7754	0.1799	0.2538	0.9800
Stackex_cooking	0.9420	122.57	0.2749	0.1136	0.8460	0.9331
Stackex_cs	0.8333	82.34	0.2853	0.1785	0.8267	0.9356
Stackex_philosophy	0.9422	87.24	0.3820	0.1522	0.6921	0.9408
tmc2007-500	0.5801	5.93	0.2834	0.5340	0.9287	0.9190
tox21_CDK_ECFP4	0.7089	6.00	0.5123	0.4272	0.7250	0.7252
tox21_RDKit_desc	0.7363	5.86	0.4579	0.4345	0.7191	0.7281
VirusGO	0.0952	0.62	0.1270	0.9145	0.8282	0.9913
VirusPseAAC	0.6667	1.81	0.3095	0.5607	0.6503	0.8506
Water-quality	0.5849	9.86	0.5770	0.5633	0.6661	0.6648
Yahoo_Arts	0.8144	9.80	0.3955	0.3217	0.8108	0.8465
Yahoo_Business	0.3128	5.45	0.1155	0.6554	0.7674	0.9089
Yahoo_Computers	0.6289	7.72	0.2840	0.4533	0.7793	0.8756
Yahoo_Education	0.7357	7.77	0.4625	0.4223	0.8110	0.9025
Yahoo_Entertainment	0.6771	4.39	0.4306	0.5045	0.8941	0.8959
Yahoo_Health	0.5136	6.16	0.3278	0.5592	0.7703	0.9319
Yahoo_Recreation	0.7194	6.35	0.3556	0.4255	0.8645	0.8664
Yahoo_Reference	0.6800	5.45	0.4011	0.4716	0.7413	0.9292
Yahoo_Science	0.8040	11.45	0.4391	0.3421	0.8662	0.8975
Yahoo_Social	0.7987	7.70	0.3088	0.3800	0.8362	0.9277
yeast	0.4711	9.17	0.5484	0.5499	0.6687	0.6940
Yelp	0.1296	1.34	0.1456	0.8873	0.8704	0.8662

Table 54: Detailed results for NSSC(US+SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7588	4.23	0.3011	0.4372	0.9480	0.9274
3s-bbc1000	0.8056	2.83	0.6852	0.4218	0.7446	0.7253
3s-guardian1000	0.7097	3.00	0.6210	0.4602	0.7050	0.6993
3s-reuters1000	0.8333	2.70	0.6583	0.4228	0.6719	0.5870
bibtex	0.9635	55.71	0.3718	0.1441	0.9428	0.9120
birds	0.6410	7.18	0.4338	0.4839	0.8304	0.9285
bookmarks	0.9774	85.68	0.4663	0.0751	0.9090	0.8715
CAL500	0.6863	149.39	0.6495	0.2782	0.6905	0.8042
corel16k001	0.9935	108.67	0.6898	0.0495	0.9252	0.7143
Corel5k	0.9040	188.67	0.6246	0.1139	0.6442	0.8193
delicious	0.9857	906.82	0.6052	0.0332	0.9553	0.7662
emotions	0.4833	2.30	0.4694	0.6726	0.8186	0.8296
enron	0.7485	23.08	0.3831	0.3837	0.7366	0.9086
EukaryoteGO	0.2242	0.95	0.0432	0.8577	0.9973	0.9971
EukaryotePseAAC	0.9176	8.10	0.4020	0.2562	0.7890	0.8064
Eurlex-dc	0.9038	40.09	0.2168	0.1807	0.7452	0.9837
Eurlex-sm	0.6832	30.09	0.1918	0.3250	0.8074	0.9699
foodtruck	0.5854	5.12	0.3015	0.4829	0.6164	0.6623
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0714	0.20	0.0214	0.9563	0.8736	0.9991
GnegativePseAAC	0.4071	1.27	0.1911	0.7236	0.7348	0.9078
GpositivePseAAC	0.5577	1.15	0.4615	0.6362	0.8265	0.8356
HumanGO	0.2894	1.22	0.1225	0.8099	0.9872	0.9886
HumanPseAAC	0.8489	5.63	0.6108	0.3184	0.7517	0.7662
Image	0.4600	1.26	0.2742	0.7034	0.8492	0.8501
IMDB-ECC-F	0.9207	16.10	0.6509	0.1884	0.6335	0.5873
IMDB-F	0.9212	15.87	0.6057	0.1891	0.6132	0.5867
LLOG-F	0.9426	20.01	0.3944	0.1903	0.5226	0.9141
mediamill	0.9482	56.93	0.4413	0.1419	0.8755	0.8816
medical	0.3878	9.37	0.2466	0.6682	0.5464	0.9836
Music	0.4667	2.57	0.3829	0.6744	0.8264	0.8343
OHSUMED-F	0.7272	7.58	0.3272	0.4100	0.8816	0.8877
PlantGO	0.2292	0.48	0.0677	0.8705	0.9953	0.9936
PlantPseAAC	0.8776	3.90	0.6913	0.3443	0.7635	0.7790
rcv1subset1	0.9183	48.06	0.4542	0.1571	0.8698	0.8830
REUTERS-K500-EX2	0.9278	27.41	0.3112	0.1710	0.7429	0.9295
scene	0.4357	1.19	0.2936	0.7183	0.9267	0.9303
sider_CDK_ECFP4	0.3662	24.99	0.6503	0.5853	0.7016	0.6330
sider_MordredDesc	0.4296	24.34	0.6196	0.5978	0.6138	0.6025
sider_RDKit_desc	0.3732	24.61	0.6133	0.6121	0.5721	0.5847
SLASHDOT-F	0.8995	7.78	0.7423	0.2880	0.7197	0.9083
Stackex_chemistry	0.9193	73.76	0.3808	0.1193	0.8714	0.8811
Stackex_chess	0.8690	89.50	0.3851	0.1849	0.5246	0.9368
Stackex_coffee	0.8696	67.91	0.6558	0.1907	0.2528	0.9690
Stackex_cooking	0.9333	159.29	0.3291	0.1033	0.8823	0.8957
Stackex_cs	0.8494	111.99	0.3562	0.1490	0.8541	0.8992
Stackex_philosophy	0.9221	100.27	0.4408	0.1230	0.7097	0.9139
tmc2007-500	0.5906	6.55	0.3154	0.5022	0.9102	0.8970
tox21_CDK_ECFP4	0.7295	6.18	0.4995	0.4220	0.7158	0.7190
tox21_RDKit_desc	0.7260	6.06	0.4870	0.4177	0.7359	0.7324
VirusGO	0.0952	0.62	0.1111	0.9198	0.8204	0.9925
VirusPseAAC	0.5238	2.00	0.4167	0.6020	0.7211	0.8818
Water-quality	0.5849	10.10	0.4805	0.5840	0.6891	0.6860
Yahoo_Arts	0.8091	10.86	0.4503	0.3104	0.8227	0.8434
Yahoo_Business	0.3209	5.68	0.1348	0.6466	0.7730	0.8824
Yahoo_Computers	0.6305	8.11	0.2537	0.4494	0.7763	0.8493
Yahoo_Education	0.7714	8.46	0.5024	0.3862	0.8043	0.8917
Yahoo_Entertainment	0.6874	4.66	0.4516	0.4848	0.8995	0.8910
Yahoo_Health	0.4973	6.34	0.3284	0.5703	0.7657	0.9234
Yahoo_Recreation	0.7116	6.53	0.3685	0.4219	0.8448	0.8334
Yahoo_Reference	0.6912	5.34	0.4356	0.4558	0.7354	0.9186
Yahoo_Science	0.7947	10.85	0.4201	0.3493	0.8646	0.9030
Yahoo_Social	0.7269	7.62	0.3030	0.4363	0.8489	0.9149
yeast	0.4835	9.08	0.5134	0.5570	0.6609	0.6853
Yelp	0.2652	1.70	0.2165	0.7956	0.7955	0.7638

Table 55: Detailed results for NSSC(US+RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5363	3.01	0.1732	0.6224	0.9324	0.8820
3s-bbc1000	0.8056	2.36	0.4792	0.4651	0.6251	0.6056
3s-guardian1000	0.9032	2.81	0.3629	0.3849	0.6078	0.5450
3s-reuters1000	0.7667	2.33	0.5083	0.4589	0.6987	0.6111
bibtex	0.9041	38.59	0.2847	0.2018	0.9390	0.9422
birds	0.6667	6.03	0.3635	0.5006	0.8338	0.9279
bookmarks	0.9088	64.09	0.2815	0.1542	0.8594	0.8449
CAL500	0.6078	151.12	0.6514	0.2782	0.6778	0.8001
corel16k001	0.9797	84.14	0.3979	0.0616	0.7872	0.6658
Corel5k	0.9100	162.66	0.3861	0.0995	0.5614	0.8172
delicious	0.9801	890.87	0.4902	0.0323	0.7833	0.7262
emotions	0.4333	2.05	0.3875	0.7158	0.8718	0.8732
enron	0.8480	20.63	0.3492	0.3296	0.6969	0.8659
EukaryoteGO	0.2458	0.79	0.0270	0.8519	0.9935	0.9885
EukaryotePseAAC	0.9112	7.54	0.2932	0.2461	0.8256	0.7695
Eurlex-dc	0.8474	24.97	0.2167	0.2875	0.7487	0.9912
Eurlex-sm	0.6450	18.31	0.1005	0.4105	0.8097	0.9824
foodtruck	0.5854	4.90	0.2354	0.5410	0.6607	0.7269
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0643	0.14	0.0107	0.9649	0.8741	0.9988
GnegativePseAAC	0.4214	1.43	0.2339	0.7023	0.7868	0.9265
GpositivePseAAC	0.4423	0.88	0.3269	0.7179	0.9083	0.9232
HumanGO	0.2669	1.04	0.0740	0.8300	0.9813	0.9800
HumanPseAAC	0.8842	5.48	0.5230	0.2996	0.7527	0.7482
Image	0.4700	1.19	0.2496	0.7038	0.8587	0.8591
IMDB-ECC-F	0.9434	13.51	0.3218	0.1913	0.6887	0.6072
IMDB-F	0.9424	13.25	0.3666	0.2033	0.7190	0.6323
LLOG-F	0.8852	20.47	0.4003	0.2286	0.5207	0.9112
mediamill	0.9577	45.62	0.3122	0.1260	0.8346	0.7884
medical	0.2653	3.60	0.0995	0.7975	0.5501	0.9960
Music	0.4000	2.15	0.3245	0.7306	0.8165	0.8301
OHSUMED-F	0.6030	6.11	0.1278	0.5160	0.8892	0.8309
PlantGO	0.2653	0.49	0.0306	0.8532	0.9921	0.9916
PlantPseAAC	0.7653	3.71	0.5272	0.4070	0.7832	0.7901
rcv1subset1	0.8517	37.05	0.3370	0.2281	0.8691	0.9022
REUTERS-K500-EX2	0.9133	20.36	0.2507	0.2580	0.7428	0.9471
scene	0.4315	1.12	0.2998	0.7229	0.9211	0.9267
sider_CDK_ECFP4	0.4155	24.75	0.4604	0.6211	0.6728	0.6242
sider_MordredDesc	0.4507	24.69	0.5682	0.6139	0.6323	0.6032
sider_RDKit_desc	0.4859	24.65	0.6120	0.5924	0.6123	0.5986
SLASHDOT-F	0.6623	4.99	0.2990	0.5022	0.7051	0.8480
Stackex_chemistry	0.9080	54.94	0.2149	0.1354	0.8241	0.8689
Stackex_chess	0.8750	65.70	0.3026	0.2125	0.5213	0.9564
Stackex_coffee	0.6957	67.74	0.6304	0.2629	0.2526	0.9795
Stackex_cooking	0.9643	116.71	0.2490	0.0972	0.8372	0.9145
Stackex_cs	0.8788	76.78	0.1863	0.1492	0.8283	0.9139
Stackex_philosophy	0.9447	69.27	0.2601	0.1469	0.6931	0.9206
tmc2007-500	0.5846	5.11	0.1313	0.5579	0.8850	0.8667
tox21_CDK_ECFP4	0.6473	5.11	0.2161	0.5017	0.7511	0.7033
tox21_RDKit_desc	0.7089	5.77	0.3706	0.4301	0.6784	0.6820
VirusGO	0.0476	0.33	0.0476	0.9643	0.8282	0.9933
VirusPseAAC	0.5714	2.14	0.4524	0.5750	0.6991	0.8839
Water-quality	0.5094	9.75	0.4393	0.5893	0.6515	0.6579
Yahoo_Arts	0.7957	8.45	0.3159	0.3549	0.8154	0.7651
Yahoo_Business	0.7585	6.17	0.0702	0.4002	0.7502	0.8348
Yahoo_Computers	0.8257	7.29	0.1606	0.3575	0.7745	0.8094
Yahoo_Education	0.7805	6.47	0.3970	0.3845	0.7898	0.8394
Yahoo_Entertainment	0.6174	4.46	0.2585	0.5282	0.8715	0.8259
Yahoo_Health	0.5896	5.09	0.1358	0.5380	0.7716	0.8823
Yahoo_Recreation	0.6150	5.40	0.2957	0.5075	0.8729	0.7986
Yahoo_Reference	0.6812	5.39	0.2060	0.4615	0.7299	0.8627
Yahoo_Science	0.6952	8.92	0.1877	0.4113	0.8686	0.8369
Yahoo_Social	0.7946	7.02	0.1557	0.3746	0.8241	0.8638
yeast	0.5124	9.28	0.4380	0.5243	0.6039	0.6339
Yelp	0.2522	1.66	0.1103	0.8113	0.8242	0.7931

Table 56: Detailed results for CLR(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3793	1.85	0.0808	0.7294	0.9423	0.9176
3s-bbc1000	0.8333	2.39	0.7130	0.4636	0.5958	0.6123
3s-guardian1000	0.6129	2.10	0.4355	0.5457	0.7009	0.6991
3s-reuters1000	0.8333	2.30	0.6833	0.4378	0.6128	0.5771
bibtex	0.3608	18.06	0.1137	0.5988	0.9203	0.9393
birds	0.4615	4.18	0.0973	0.6213	0.7549	0.8593
bookmarks	0.5524	29.61	0.0705	0.4768	0.8732	0.8942
CAL500	0.1961	134.37	0.4072	0.4995	0.5284	0.8170
corel16k001	0.6950	45.09	0.0809	0.3117	0.7299	0.8513
Corel5k	0.6740	95.65	0.4559	0.2838	0.4847	0.8932
delicious	0.3250	457.81	0.0707	0.3887	0.7765	0.9057
emotions	0.2833	1.70	0.2361	0.8000	0.8465	0.8619
enron	0.2047	11.67	0.0662	0.7143	0.6052	0.9115
EukaryoteGO	0.1647	0.38	0.0013	0.9082	0.9906	0.9933
EukaryotePseAAC	0.5920	2.44	0.0183	0.5922	0.7427	0.9063
Eurlex-dc	0.2168	8.52	0.0350	0.8124	0.7323	0.9804
Eurlex-sm	0.1163	5.84	0.0616	0.8662	0.8037	0.9860
foodtruck	0.2927	2.68	0.3173	0.7583	0.6363	0.8130
genbase	0.0000	0.36	0.0000	0.9863	0.6667	0.9947
GnegativeGO	0.0286	0.09	0.0071	0.9845	0.8722	0.9989
GnegativePseAAC	0.3714	0.91	0.2107	0.7646	0.6679	0.9059
GpositivePseAAC	0.4423	0.71	0.3077	0.7404	0.8207	0.8469
HumanGO	0.1929	0.59	0.0202	0.8861	0.9688	0.9778
HumanPseAAC	0.6592	2.48	0.0773	0.5450	0.6891	0.8436
Image	0.3750	1.01	0.1158	0.7625	0.8384	0.8480
IMDB-ECC-F	0.6228	7.02	0.1880	0.4895	0.7391	0.8342
IMDB-F	0.6099	7.23	0.2009	0.4916	0.7337	0.8330
LLOG-F	0.6721	11.36	0.1748	0.4268	0.4698	0.8766
mediamill	0.1176	12.86	0.0131	0.7594	0.8614	0.9595
medical	0.1531	2.21	0.0292	0.8717	0.5392	0.9660
Music	0.2667	1.98	0.2625	0.7888	0.8402	0.8463
OHSUMED-F	0.3582	4.02	0.1033	0.6828	0.8495	0.8887
PlantGO	0.2245	0.40	0.0204	0.8776	0.9779	0.9833
PlantPseAAC	0.6327	2.30	0.1726	0.5579	0.7231	0.8211
rcv1subset1	0.3800	12.12	0.0872	0.6082	0.8520	0.9411
REUTERS-K500-EX2	0.4250	5.37	0.0475	0.6625	0.7204	0.9593
scene	0.2739	0.67	0.1369	0.8248	0.9148	0.9237
sider_CDK_ECFP4	0.1268	19.01	0.1094	0.8425	0.5680	0.8059
sider_MordredDesc	0.0845	19.14	0.1167	0.8474	0.5724	0.8023
sider_RDKit_desc	0.0915	19.23	0.1125	0.8449	0.5678	0.8031
SLASHDOT-F	0.4459	2.65	0.0306	0.6540	0.6640	0.9037
Stackex_chemistry	0.6193	27.46	0.1797	0.4092	0.7615	0.9050
Stackex_chess	0.5119	49.68	0.1311	0.4366	0.4617	0.8906
Stackex_coffee	0.7391	61.17	0.2935	0.3598	0.2307	0.6775
Stackex_cooking	0.4589	58.08	0.0755	0.4872	0.7996	0.9208
Stackex_cs	0.4762	35.40	0.1325	0.5002	0.8058	0.9409
Stackex_philosophy	0.5176	38.53	0.0934	0.4740	0.6134	0.9083
tmc2007-500	0.2727	2.80	0.0736	0.7788	0.9078	0.9417
tox21_CDK_ECFP4	0.5034	4.28	0.1212	0.5950	0.6951	0.7610
tox21_RDKit_desc	0.5103	4.24	0.1458	0.5998	0.6997	0.7673
VirusGO	0.0476	0.33	0.0476	0.9603	0.8081	0.9802
VirusPseAAC	0.5238	1.05	0.0238	0.6976	0.5433	0.8455
Water-quality	0.2925	8.48	0.2720	0.7098	0.6949	0.7339
Yahoo_Arts	0.4713	4.17	0.3137	0.6294	0.7623	0.8803
Yahoo_Business	0.1034	1.90	0.1160	0.9042	0.7524	0.9584
Yahoo_Computers	0.5325	4.94	0.2138	0.5993	0.7308	0.8665
Yahoo_Education	0.5087	3.72	0.3485	0.6193	0.7505	0.9144
Yahoo_Entertainment	0.3810	2.24	0.0878	0.7157	0.8797	0.9180
Yahoo_Health	0.2595	2.40	0.1484	0.7866	0.7285	0.9534
Yahoo_Recreation	0.4560	4.59	0.4196	0.6403	0.8716	0.8354
Yahoo_Reference	0.3724	2.26	0.0800	0.7230	0.6845	0.9398
Yahoo_Science	0.5008	5.09	0.0875	0.6027	0.8053	0.8958
Yahoo_Social	0.3135	2.59	0.0652	0.7686	0.7804	0.9417
yeast	0.2521	6.46	0.2392	0.7498	0.6786	0.8326
Yelp	0.2014	1.34	0.2184	0.8607	0.8362	0.8657

Table 57: Detailed results for CLR(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3202	1.38	0.0756	0.7803	0.9383	0.9343
3s-bbc1000	0.5833	2.00	0.4722	0.5863	0.6924	0.6876
3s-guardian1000	0.6774	1.94	0.4677	0.5419	0.6773	0.7208
3s-reuters1000	0.8333	2.23	0.7000	0.4361	0.6867	0.5938
bibtex	0.4230	23.17	0.1200	0.5172	0.8809	0.9098
birds	0.5897	5.28	0.1752	0.5260	0.6997	0.7970
bookmarks	0.7278	69.90	0.2818	0.3515	0.7149	0.7238
CAL500	0.2745	131.02	0.3890	0.4266	0.5438	0.7700
corel16k001	0.6659	40.82	0.0815	0.3335	0.7604	0.8629
Corel5k	0.6200	101.36	0.4017	0.3217	0.5077	0.8899
delicious	0.8084	666.28	0.3845	0.1008	0.7162	0.6311
emotions	0.2833	1.68	0.1472	0.7947	0.8493	0.8629
enron	0.4035	21.47	0.2215	0.5024	0.5860	0.7905
EukaryoteGO	0.3333	2.09	0.0141	0.7552	0.9391	0.9234
EukaryotePseAAC	0.7851	4.25	0.0494	0.4084	0.7258	0.8144
Eurlex-dc	0.2298	8.57	0.0000	0.8299	0.7194	0.9990
Eurlex-sm	0.7212	80.99	0.3124	0.3099	0.6524	0.6886
foodtruck	0.3659	3.27	0.2453	0.7329	0.6585	0.7942
genbase	0.3881	2.99	0.2023	0.7158	0.6501	0.9111
GnegativeGO	0.1357	0.48	0.0893	0.9064	0.8435	0.9555
GnegativePseAAC	0.2143	0.64	0.0321	0.8500	0.7483	0.9307
GpositivePseAAC	0.2885	0.50	0.1154	0.8253	0.9243	0.9021
HumanGO	0.3730	1.86	0.0742	0.7337	0.8737	0.8911
HumanPseAAC	0.6849	3.05	0.1660	0.5076	0.6825	0.7901
Image	0.2900	0.85	0.0733	0.8117	0.8855	0.8709
IMDB-ECC-F	0.6608	7.38	0.2030	0.4591	0.6674	0.8087
IMDB-F	0.6567	7.72	0.1873	0.4563	0.6567	0.8038
LLOG-F	0.7623	15.00	0.2284	0.3524	0.4542	0.8392
mediamill	0.6641	42.51	0.2173	0.3139	0.7201	0.7756
medical	0.3878	5.07	0.2455	0.6664	0.5144	0.9127
Music	0.2500	2.02	0.2111	0.7874	0.8471	0.8470
OHSUMED-F	0.4350	4.48	0.1250	0.6301	0.8315	0.8635
PlantGO	0.5918	2.45	0.1726	0.5846	0.9265	0.8187
PlantPseAAC	0.6122	2.12	0.2202	0.5801	0.7812	0.8403
rcv1subset1	0.8657	56.89	0.8735	0.1977	0.8235	0.6232
REUTERS-K500-EX2	0.4917	9.13	0.0563	0.5992	0.7013	0.9302
scene	0.2199	0.44	0.0716	0.8708	0.9394	0.9466
sider_CDK_ECFP4	0.1338	19.44	0.1311	0.8211	0.5844	0.7845
sider_MordredDesc	0.2394	21.73	0.2794	0.7030	0.5529	0.6613
sider_RDKit_desc	0.2254	21.68	0.2743	0.7139	0.5619	0.6731
SLASHDOT-F	0.3641	2.37	0.0125	0.7215	0.6756	0.9112
Stackex_chemistry	0.6236	35.05	0.1715	0.3954	0.7639	0.8766
Stackex_chess	0.5774	65.10	0.1561	0.3435	0.4603	0.8450
Stackex_coffee	0.7826	59.91	0.2678	0.2621	0.2044	0.6812
Stackex_cooking	0.5990	102.67	0.1665	0.3788	0.7804	0.8590
Stackex_cs	0.4697	50.82	0.1262	0.4854	0.7896	0.9091
Stackex_philosophy	0.5930	58.97	0.1481	0.3933	0.5906	0.8471
tmc2007-500	0.2955	3.36	0.0878	0.7380	0.9032	0.9176
tox21_CDK_ECFP4	0.5103	4.42	0.0797	0.5748	0.6761	0.7277
tox21_RDKit_desc	0.6164	5.15	0.2048	0.4943	0.6499	0.6778
VirusGO	0.1905	0.76	0.0079	0.8603	0.7424	0.9034
VirusPseAAC	0.1905	0.62	0.0000	0.8683	0.6161	0.9126
Water-quality	0.3302	9.16	0.3207	0.6652	0.6616	0.6872
Yahoo_Arts	0.5607	6.91	0.3558	0.5222	0.6940	0.7842
Yahoo_Business	0.1221	2.79	0.1457	0.8727	0.6372	0.9303
Yahoo_Computers	0.5487	8.21	0.5165	0.4818	0.5564	0.7714
Yahoo_Education	0.6401	5.32	0.5548	0.5045	0.6193	0.8668
Yahoo_Entertainment	0.8759	6.02	0.7701	0.4914	0.7406	0.7879
Yahoo_Health	0.4245	4.61	0.3487	0.6570	0.6017	0.8984
Yahoo_Recreation	0.5853	5.72	0.2163	0.5249	0.7207	0.7651
Yahoo_Reference	0.5679	5.24	0.3616	0.5421	0.6326	0.8592
Yahoo_Science	0.7621	11.48	0.4359	0.3579	0.6543	0.7416
Yahoo_Social	0.5322	7.01	0.1478	0.5563	0.5865	0.8333
yeast	0.2934	7.18	0.2602	0.6981	0.6886	0.7822
Yelp	0.2134	1.41	0.1592	0.8491	0.8021	0.8406

Table 58: Detailed results for CLR(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4140	1.98	0.1013	0.7156	0.9717	0.9204
3s-bbc1000	0.6389	2.17	0.6204	0.5474	0.7148	0.7040
3s-guardian1000	0.5806	1.58	0.4516	0.6269	0.6787	0.7484
3s-reuters1000	0.8000	2.40	0.7833	0.4236	0.7474	0.6115
bibtex	0.3459	15.89	0.0814	0.6143	0.9276	0.9473
birds	0.4103	4.92	0.1477	0.6218	0.7316	0.8443
bookmarks	0.5952	29.38	0.0929	0.4494	0.8812	0.8958
CAL500	0.1373	132.25	0.4042	0.5055	0.5300	0.8212
corel16k001	0.6826	40.09	0.0700	0.3098	0.7614	0.8683
Corel5k	0.6780	94.50	0.4688	0.2846	0.5124	0.8973
delicious	0.4587	460.72	0.0929	0.3289	0.7833	0.8934
emotions	0.2667	1.60	0.1486	0.8089	0.8865	0.8947
enron	0.1930	11.02	0.0537	0.7224	0.6331	0.9200
EukaryoteGO	0.5907	1.39	0.0032	0.6138	0.9850	0.9584
EukaryotePseAAC	0.6847	2.70	0.0121	0.5195	0.8119	0.9067
Eurlex-dc	0.3978	15.96	0.0749	0.6990	0.7149	0.9668
Eurlex-sm	0.5395	11.36	0.4195	0.4932	0.7859	0.9695
foodtruck	0.2439	2.80	0.3347	0.7806	0.7020	0.8123
genbase	0.0000	0.64	0.0149	0.9874	0.6667	0.9852
GnegativeGO	0.0286	0.11	0.0107	0.9824	0.8634	0.9948
GnegativePseAAC	0.2286	0.62	0.1339	0.8495	0.8127	0.9473
GpositivePseAAC	0.2308	0.42	0.1346	0.8558	0.9535	0.9161
HumanGO	0.5113	1.14	0.0206	0.6827	0.9662	0.9528
HumanPseAAC	0.6688	2.35	0.0678	0.5367	0.7759	0.8707
Image	0.2450	0.74	0.0583	0.8413	0.9166	0.9105
IMDB-ECC-F	0.6271	7.16	0.1933	0.4781	0.7233	0.8327
IMDB-F	0.6149	7.39	0.1857	0.4832	0.7283	0.8304
LLOG-F	0.7787	14.14	0.2028	0.3747	0.4629	0.8538
mediamill	0.1853	16.06	0.0131	0.6849	0.8763	0.9465
medical	0.1735	4.00	0.1032	0.8395	0.5368	0.9350
Music	0.1667	1.88	0.1894	0.8318	0.8902	0.8802
OHSUMED-F	0.6167	5.99	0.3259	0.4809	0.8725	0.8265
PlantGO	0.2755	0.90	0.0876	0.8232	0.9736	0.9489
PlantPseAAC	0.6224	2.22	0.2262	0.5808	0.8133	0.8454
rcv1subset1	0.6317	13.24	0.0838	0.4801	0.8805	0.9408
REUTERS-K500-EX2	0.3933	5.18	0.0396	0.6945	0.7266	0.9638
scene	0.2822	0.54	0.0965	0.8355	0.9656	0.9657
sider_CDK_ECFP4	0.0775	19.93	0.1160	0.8582	0.5983	0.8038
sider_MordredDesc	0.1056	21.51	0.1413	0.8340	0.5943	0.7850
sider_RDKit_desc	0.0704	21.56	0.1501	0.8357	0.5989	0.7785
SLASHDOT-F	0.3826	2.10	0.0372	0.7143	0.6873	0.9281
Stackex_chemistry	0.7514	34.20	0.2301	0.3339	0.7496	0.8812
Stackex_chess	0.5238	59.10	0.1539	0.4081	0.4527	0.8637
Stackex_coffee	0.6957	56.57	0.2575	0.3106	0.2301	0.7092
Stackex_cooking	0.5691	92.93	0.1499	0.3959	0.7559	0.8751
Stackex_cs	0.7262	44.13	0.1571	0.3500	0.7775	0.9238
Stackex_philosophy	0.5477	49.47	0.1265	0.4298	0.5909	0.8793
tmc2007-500	0.4514	4.87	0.1655	0.6082	0.9263	0.8858
tox21_CDK_ECFP4	0.5000	4.02	0.0720	0.6108	0.7577	0.7940
tox21_RDKit_desc	0.4486	3.96	0.0870	0.6413	0.7626	0.8026
VirusGO	0.0952	0.57	0.0476	0.9206	0.7872	0.9640
VirusPseAAC	0.3810	0.81	0.0000	0.7675	0.7195	0.9050
Water-quality	0.2075	8.74	0.2370	0.7331	0.6985	0.7375
Yahoo_Arts	0.5941	5.13	0.3907	0.5246	0.7858	0.8607
Yahoo_Business	0.1319	1.88	0.1549	0.8818	0.7335	0.9596
Yahoo_Computers	0.4924	3.53	0.4361	0.6222	0.7001	0.9051
Yahoo_Education	0.6384	3.68	0.3086	0.5409	0.7416	0.9179
Yahoo_Entertainment	0.4493	3.03	0.0919	0.6500	0.8427	0.8871
Yahoo_Health	0.5092	3.46	0.3140	0.6291	0.6755	0.9283
Yahoo_Recreation	0.6337	4.10	0.4897	0.5256	0.8276	0.8454
Yahoo_Reference	0.4956	2.73	0.0654	0.6429	0.6519	0.9298
Yahoo_Science	0.6796	6.25	0.1273	0.4640	0.7810	0.8712
Yahoo_Social	0.4175	3.09	0.1193	0.6939	0.7113	0.9253
yeast	0.2603	6.17	0.2083	0.7552	0.7365	0.8421
Yelp	0.1585	1.52	0.2601	0.8554	0.8704	0.8527

Table 59: Detailed results for CLR(US+DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3777	1.85	0.0724	0.7288	0.9414	0.9185
3s-bbc1000	0.8056	2.42	0.6296	0.4727	0.5998	0.6116
3s-guardian1000	0.7419	2.13	0.4194	0.4935	0.6880	0.6759
3s-reuters1000	0.8000	2.03	0.4833	0.4744	0.6231	0.6094
bibtex	0.4027	20.31	0.1644	0.5574	0.9183	0.9291
birds	0.4615	4.36	0.0969	0.6191	0.7563	0.8582
bookmarks	0.5977	35.58	0.1069	0.4357	0.8699	0.8665
CAL500	0.2549	134.16	0.4247	0.4533	0.5326	0.8060
corel16k001	0.9172	58.04	0.3177	0.1450	0.7239	0.7723
Corel5k	0.8320	96.57	0.4210	0.2173	0.4825	0.8837
delicious	0.6221	566.66	0.2206	0.1820	0.7711	0.8000
emotions	0.2333	1.65	0.1750	0.8167	0.8600	0.8762
enron	0.2632	12.67	0.1062	0.6648	0.6102	0.8948
EukaryoteGO	0.1647	0.45	0.0026	0.9039	0.9942	0.9919
EukaryotePseAAC	0.7568	4.39	0.0230	0.4224	0.7543	0.8218
Eurlex-dc	0.2675	9.59	0.0425	0.7739	0.7306	0.9781
Eurlex-sm	0.1835	7.66	0.0290	0.7973	0.8000	0.9793
foodtruck	0.3659	2.98	0.3336	0.7077	0.5923	0.7901
genbase	0.0000	0.36	0.0037	0.9863	0.6667	0.9951
GnegativeGO	0.0286	0.08	0.0071	0.9863	0.8711	0.9992
GnegativePseAAC	0.3071	0.79	0.0946	0.8022	0.6705	0.9117
GpositivePseAAC	0.3462	0.60	0.2308	0.7917	0.8344	0.8515
HumanGO	0.1994	0.63	0.0529	0.8776	0.9684	0.9743
HumanPseAAC	0.7299	3.56	0.2771	0.4578	0.6699	0.7740
Image	0.3250	0.96	0.1408	0.7855	0.8459	0.8527
IMDB-ECC-F	0.8659	10.55	0.2420	0.2852	0.7004	0.7238
IMDB-F	0.8405	11.19	0.2210	0.2954	0.6889	0.7088
LLOG-F	0.6885	11.46	0.1728	0.4199	0.4749	0.8750
mediamill	0.3394	23.81	0.0995	0.5383	0.8506	0.9020
medical	0.1633	2.29	0.0292	0.8647	0.5402	0.9650
Music	0.3000	2.03	0.2880	0.7669	0.8297	0.8398
OHSUMED-F	0.4358	5.16	0.0641	0.6184	0.8525	0.8485
PlantGO	0.2551	0.43	0.0408	0.8648	0.9779	0.9820
PlantPseAAC	0.6633	2.37	0.2517	0.5412	0.7199	0.8160
rcv1subset1	0.5067	13.12	0.1299	0.5379	0.8471	0.9312
REUTERS-K500-EX2	0.4817	6.23	0.0497	0.6151	0.7190	0.9528
scene	0.2614	0.62	0.1110	0.8342	0.9244	0.9287
sider_CDK_ECFP4	0.0563	20.02	0.1565	0.8234	0.5866	0.7753
sider_MordredDesc	0.1197	20.20	0.1712	0.8013	0.5735	0.7633
sider_RDKit_desc	0.1479	20.17	0.1752	0.8016	0.5688	0.7637
SLASHDOT-F	0.5567	3.25	0.3323	0.5723	0.6474	0.8795
Stackex_chemistry	0.7256	30.59	0.0992	0.3140	0.7560	0.8885
Stackex_chess	0.5774	49.35	0.1312	0.4251	0.4607	0.8905
Stackex_coffee	0.7391	61.17	0.2935	0.3598	0.2307	0.6775
Stackex_cooking	0.5246	60.74	0.0881	0.4329	0.7973	0.9145
Stackex_cs	0.6158	39.15	0.0950	0.3928	0.8014	0.9280
Stackex_philosophy	0.6181	39.98	0.1102	0.4011	0.6115	0.9019
tmc2007-500	0.3839	3.57	0.1008	0.6946	0.9017	0.9141
tox21_CDK_ECFP4	0.5548	4.62	0.1660	0.5574	0.6941	0.7426
tox21_RDKit_desc	0.5000	4.86	0.2610	0.5695	0.6929	0.7193
VirusGO	0.0476	0.33	0.0476	0.9603	0.8081	0.9802
VirusPseAAC	0.4762	1.00	0.0000	0.7175	0.5980	0.8637
Water-quality	0.3113	9.03	0.3535	0.6759	0.6875	0.6991
Yahoo_Arts	0.5354	6.18	0.3099	0.5427	0.7278	0.8199
Yahoo_Business	0.2709	2.31	0.0695	0.7898	0.7255	0.9417
Yahoo_Computers	0.5325	4.94	0.2138	0.5993	0.7308	0.8665
Yahoo_Education	0.5919	4.10	0.3688	0.5426	0.7147	0.8992
Yahoo_Entertainment	0.4454	3.03	0.1485	0.6568	0.8340	0.8842
Yahoo_Health	0.2736	2.86	0.1554	0.7671	0.6815	0.9366
Yahoo_Recreation	0.4934	5.12	0.4467	0.6065	0.8270	0.8056
Yahoo_Reference	0.4994	3.10	0.1198	0.6185	0.6415	0.9073
Yahoo_Science	0.5708	7.06	0.1286	0.5116	0.7815	0.8495
Yahoo_Social	0.4587	4.75	0.0801	0.6285	0.7356	0.8909
yeast	0.4215	8.62	0.3339	0.5954	0.6756	0.6929
Yelp	0.2203	1.47	0.1321	0.8443	0.8086	0.8221

Table 60: Detailed results for CLR(US+NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3223	1.39	0.0767	0.7785	0.9352	0.9317
3s-bbc1000	0.6389	2.08	0.3611	0.5564	0.6440	0.6548
3s-guardian1000	0.7419	1.87	0.4194	0.5301	0.6694	0.6874
3s-reuters1000	0.8667	2.17	0.6333	0.4389	0.6465	0.6005
bibtex	0.4703	23.88	0.1417	0.5018	0.8893	0.9052
birds	0.5897	5.44	0.1752	0.5145	0.6965	0.7956
bookmarks	0.7527	69.81	0.2326	0.2768	0.7553	0.7093
CAL500	0.4314	131.18	0.4040	0.3851	0.5443	0.7534
corel16k001	0.8715	53.91	0.2172	0.1700	0.7653	0.7809
Corel5k	0.7520	103.31	0.4010	0.2437	0.5057	0.8794
delicious	0.8595	667.35	0.3767	0.0831	0.7068	0.6861
emotions	0.2333	1.58	0.1431	0.8236	0.8551	0.8704
enron	0.5088	22.75	0.2543	0.4409	0.5817	0.7678
EukaryoteGO	0.2381	1.18	0.0094	0.8408	0.9070	0.9576
EukaryotePseAAC	0.8713	5.43	0.0656	0.3198	0.7246	0.7589
Eurlex-dc	0.8041	100.22	0.2789	0.2041	0.5586	0.7949
Eurlex-sm	0.7306	71.69	0.3796	0.2373	0.6493	0.7389
foodtruck	0.5366	3.46	0.2160	0.6482	0.6671	0.7768
genbase	0.1194	2.73	0.2023	0.8358	0.6525	0.9174
GnegativeGO	0.0714	0.39	0.0536	0.9407	0.8511	0.9580
GnegativePseAAC	0.2071	0.64	0.0357	0.8551	0.7434	0.9247
GpositivePseAAC	0.3269	0.50	0.0962	0.8109	0.9170	0.9041
HumanGO	0.3891	1.54	0.1773	0.7438	0.8629	0.9052
HumanPseAAC	0.7846	3.62	0.2390	0.4337	0.6558	0.7465
Image	0.2850	0.86	0.0858	0.8121	0.8763	0.8656
IMDB-ECC-F	0.8642	11.47	0.3106	0.2677	0.6604	0.6674
IMDB-F	0.8611	11.85	0.3257	0.2681	0.6507	0.6641
LLOG-F	0.7459	15.14	0.2298	0.3531	0.4518	0.8362
mediamill	0.8264	49.75	0.2822	0.2172	0.7173	0.7178
medical	0.3980	4.96	0.2353	0.6740	0.5082	0.9135
Music	0.2667	1.92	0.2028	0.7971	0.8552	0.8532
OHSUMED-F	0.5384	5.44	0.1421	0.5512	0.8300	0.8254
PlantGO	0.4184	1.98	0.2015	0.6936	0.9447	0.8601
PlantPseAAC	0.6735	2.32	0.2457	0.5420	0.7808	0.8133
rcv1subset1	0.9534	61.44	0.9641	0.0951	0.8362	0.5441
REUTERS-K500-EX2	0.5167	8.88	0.0628	0.5902	0.6910	0.9307
scene	0.2158	0.44	0.0757	0.8722	0.9388	0.9473
sider_CDK_ECFP4	0.1408	20.20	0.1649	0.7927	0.5925	0.7591
sider_MordredDesc	0.2394	22.42	0.3106	0.6931	0.5508	0.6471
sider_RDKit_desc	0.2394	22.27	0.3140	0.6893	0.5590	0.6481
SLASHDOT-F	0.4670	2.54	0.2258	0.6575	0.6629	0.9013
Stackex_chemistry	0.7184	36.21	0.1199	0.3073	0.7648	0.8690
Stackex_chess	0.6310	64.86	0.1554	0.3255	0.4604	0.8453
Stackex_coffee	0.7826	59.91	0.2678	0.2621	0.2018	0.6811
Stackex_cooking	0.6396	99.80	0.1720	0.3536	0.7850	0.8633
Stackex_cs	0.5758	50.65	0.1046	0.4125	0.7959	0.9059
Stackex_philosophy	0.6759	59.59	0.1939	0.3438	0.5867	0.8442
tmc2007-500	0.3601	3.93	0.1167	0.6825	0.9038	0.8967
tox21_CDK_ECFP4	0.5719	4.68	0.0797	0.5381	0.6822	0.7120
tox21_RDKit_desc	0.6096	5.43	0.2127	0.4824	0.6499	0.6619
VirusGO	0.1905	0.76	0.0079	0.8603	0.7406	0.8935
VirusPseAAC	0.1905	0.62	0.0000	0.8683	0.6048	0.9147
Water-quality	0.4434	9.42	0.3919	0.6269	0.6556	0.6635
Yahoo_Arts	0.8398	9.94	0.3805	0.2892	0.6742	0.6615
Yahoo_Business	0.2460	3.66	0.1307	0.7684	0.6023	0.9033
Yahoo_Computers	0.5261	8.19	0.5251	0.4887	0.6062	0.7731
Yahoo_Education	0.7431	7.46	0.6607	0.3823	0.5920	0.8021
Yahoo_Entertainment	0.7840	5.93	0.7529	0.3935	0.7071	0.7375
Yahoo_Health	0.5440	5.95	0.3554	0.5500	0.5675	0.8604
Yahoo_Recreation	0.6890	7.38	0.4484	0.4326	0.7131	0.6932
Yahoo_Reference	0.8854	6.63	0.4097	0.3623	0.5410	0.8113
Yahoo_Science	0.9549	16.28	0.9532	0.1658	0.6203	0.6180
Yahoo_Social	0.9695	12.68	0.9853	0.1466	0.5283	0.7044
yeast	0.4008	8.25	0.2954	0.6036	0.7007	0.6864
Yelp	0.2782	1.60	0.1368	0.8050	0.7850	0.7992

Table 61: Detailed results for CLR(US+SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2456	0.80	0.0422	0.8397	0.9707	0.9709
3s-bbc1000	0.6944	2.06	0.6620	0.5324	0.7606	0.7340
3s-guardian1000	0.6774	1.74	0.4839	0.5796	0.6618	0.7406
3s-reuters1000	0.8000	2.30	0.7833	0.4431	0.7843	0.6296
bibtex	0.3662	16.54	0.1088	0.5948	0.9257	0.9437
birds	0.4359	5.00	0.1472	0.6097	0.7303	0.8431
bookmarks	0.5952	29.38	0.0929	0.4494	0.8812	0.8958
CAL500	0.1373	132.25	0.4070	0.4992	0.5315	0.8194
corel16k001	0.8235	44.73	0.1584	0.2188	0.7611	0.8338
Corel5k	0.7580	94.68	0.3957	0.2573	0.5105	0.8934
delicious	0.4587	460.72	0.0929	0.3289	0.7833	0.8934
emotions	0.2667	1.58	0.1764	0.8178	0.8879	0.8899
enron	0.1871	10.92	0.0615	0.7163	0.6399	0.9203
EukaryoteGO	0.1879	0.46	0.0016	0.8936	0.9912	0.9930
EukaryotePseAAC	0.6396	2.76	0.0179	0.5494	0.8035	0.9034
Eurlex-dc	0.3176	16.73	0.0570	0.7341	0.7095	0.9645
Eurlex-sm	0.1891	9.13	0.0564	0.7893	0.7768	0.9764
foodtruck	0.2439	2.85	0.3176	0.7796	0.7049	0.8127
genbase	0.0000	0.64	0.0149	0.9874	0.6667	0.9852
GnegativeGO	0.0214	0.11	0.0107	0.9857	0.8633	0.9948
GnegativePseAAC	0.2000	0.54	0.0679	0.8683	0.8178	0.9549
GpositivePseAAC	0.2308	0.38	0.1154	0.8622	0.9610	0.9270
HumanGO	0.1961	0.55	0.0242	0.8838	0.9766	0.9832
HumanPseAAC	0.6206	2.26	0.0856	0.5816	0.7663	0.8737
Image	0.2350	0.78	0.0733	0.8393	0.9165	0.9114
IMDB-ECC-F	0.8269	10.53	0.3689	0.2970	0.6662	0.7088
IMDB-F	0.8253	10.90	0.3554	0.2992	0.6614	0.7046
LLOG-F	0.7623	14.46	0.1962	0.3601	0.4461	0.8466
mediamill	0.2314	15.77	0.0316	0.6601	0.8716	0.9439
medical	0.1633	3.21	0.0802	0.8670	0.5366	0.9488
Music	0.2000	1.97	0.2171	0.8104	0.8835	0.8755
OHSUMED-F	0.5083	5.10	0.1587	0.5826	0.8467	0.8455
PlantGO	0.2449	0.85	0.0876	0.8445	0.9716	0.9525
PlantPseAAC	0.5918	2.14	0.2474	0.5972	0.8025	0.8372
rcv1subset1	0.4117	12.82	0.1166	0.6007	0.8703	0.9418
REUTERS-K500-EX2	0.4217	5.29	0.0405	0.6772	0.7210	0.9604
scene	0.2116	0.44	0.1037	0.8746	0.9524	0.9552
sider_CDK_ECFP4	0.0775	21.10	0.1633	0.8232	0.5987	0.7703
sider_MordredDesc	0.1127	21.86	0.1668	0.8175	0.5936	0.7697
sider_RDKit_desc	0.0775	21.71	0.1702	0.8229	0.5873	0.7679
SLASHDOT-F	0.4433	2.23	0.1255	0.6793	0.6732	0.9143
Stackex_chemistry	0.6997	35.26	0.1712	0.3432	0.7433	0.8762
Stackex_chess	0.5476	58.90	0.1549	0.4092	0.4447	0.8631
Stackex_coffee	0.6957	56.57	0.2575	0.3124	0.2287	0.7088
Stackex_cooking	0.6010	94.99	0.1584	0.3686	0.7539	0.8715
Stackex_cs	0.5130	43.93	0.1188	0.4623	0.7727	0.9234
Stackex_philosophy	0.5779	49.56	0.1456	0.4089	0.5820	0.8776
tmc2007-500	0.3559	3.44	0.0905	0.7262	0.9160	0.9211
tox21_CDK_ECFP4	0.5514	4.51	0.1060	0.5673	0.6963	0.7355
tox21_RDKit_desc	0.5582	4.85	0.1245	0.5382	0.7053	0.7268
VirusGO	0.0952	0.57	0.0476	0.9206	0.7872	0.9509
VirusPseAAC	0.5714	1.00	0.0000	0.6762	0.6867	0.8852
Water-quality	0.2642	9.34	0.3599	0.6915	0.6905	0.7096
Yahoo_Arts	0.6021	6.82	0.2765	0.5020	0.7038	0.8018
Yahoo_Business	0.1462	2.25	0.1068	0.8675	0.6898	0.9456
Yahoo_Computers	0.4169	3.58	0.2227	0.6712	0.6804	0.8991
Yahoo_Education	0.5819	4.48	0.3879	0.5509	0.6930	0.8947
Yahoo_Entertainment	0.4187	2.82	0.1277	0.6759	0.7950	0.8848
Yahoo_Health	0.3518	3.07	0.2460	0.7153	0.6459	0.9332
Yahoo_Recreation	0.5355	5.24	0.3036	0.5664	0.7832	0.7992
Yahoo_Reference	0.4707	3.00	0.1178	0.6451	0.5952	0.9145
Yahoo_Science	0.5863	6.94	0.2055	0.5112	0.7387	0.8502
Yahoo_Social	0.4662	4.31	0.1849	0.6281	0.6710	0.8966
yeast	0.2851	6.96	0.2432	0.7044	0.7254	0.7883
Yelp	0.1615	1.31	0.1176	0.8826	0.8319	0.8569

Table 62: Detailed results for CLR(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3922	2.03	0.0328	0.7141	0.9511	0.9095
3s-bbc1000	0.7500	2.42	0.8148	0.4708	0.7947	0.6992
3s-guardian1000	0.5484	1.90	0.5968	0.6016	0.7820	0.7811
3s-reuters1000	0.8667	2.33	0.8583	0.4311	0.7491	0.6094
bibtex	0.4081	20.32	0.0930	0.5572	0.9325	0.9312
birds	0.5385	6.21	0.2439	0.5399	0.7133	0.7996
bookmarks	0.5977	34.28	0.0734	0.4316	0.8530	0.8792
CAL500	0.1961	134.45	0.4305	0.4632	0.5227	0.8032
corel16k001	0.7298	46.10	0.0655	0.2894	0.7514	0.8469
Corel5k	0.7000	97.90	0.4745	0.2715	0.5109	0.8919
delicious	0.4145	482.55	0.0766	0.3419	0.7661	0.8948
emotions	0.3167	1.83	0.2306	0.7680	0.8604	0.8704
enron	0.2281	11.95	0.0655	0.6899	0.6293	0.9109
EukaryoteGO	0.2111	1.01	0.0233	0.8699	0.9900	0.9698
EukaryotePseAAC	0.6744	2.91	0.0156	0.5259	0.8165	0.8974
Eurlex-dc	0.2483	9.65	0.0467	0.7929	0.7388	0.9794
Eurlex-sm	0.1943	7.45	0.1278	0.7934	0.8039	0.9809
foodtruck	0.2439	3.17	0.3782	0.7604	0.7379	0.8119
genbase	0.0000	0.81	0.0149	0.9828	0.6667	0.9803
GnegativeGO	0.1500	0.70	0.1446	0.8842	0.8739	0.9432
GnegativePseAAC	0.3571	1.26	0.2839	0.7408	0.7386	0.8799
GpositivePseAAC	0.3846	0.67	0.1731	0.7660	0.8522	0.8537
HumanGO	0.2958	0.75	0.0360	0.8270	0.9668	0.9683
HumanPseAAC	0.7363	2.80	0.0760	0.4846	0.8375	0.8525
Image	0.4850	1.11	0.1258	0.7080	0.8839	0.8430
IMDB-ECC-F	0.6300	7.06	0.1970	0.4834	0.8104	0.8320
IMDB-F	0.6260	7.25	0.1982	0.4866	0.7900	0.8320
LLOG-F	0.7705	13.47	0.1804	0.3549	0.4656	0.8577
mediamill	0.1817	16.93	0.0237	0.6738	0.8252	0.9421
medical	0.1633	3.26	0.0660	0.8591	0.5400	0.9481
Music	0.2667	2.10	0.2880	0.7699	0.8633	0.8472
OHSUMED-F	0.3640	4.26	0.1417	0.6739	0.8450	0.8817
PlantGO	0.1837	0.43	0.0204	0.8889	0.9748	0.9787
PlantPseAAC	0.7551	2.92	0.2645	0.4849	0.7663	0.7919
rcv1subset1	0.5317	14.13	0.0867	0.5326	0.8778	0.9330
REUTERS-K500-EX2	0.4950	6.65	0.0414	0.6085	0.7237	0.9511
scene	0.2946	0.59	0.0871	0.8243	0.9509	0.9485
sider_CDK_ECFP4	0.1268	21.66	0.1454	0.8228	0.6846	0.7863
sider_MordredDesc	0.0775	21.71	0.1476	0.8312	0.6665	0.7847
sider_RDKit_desc	0.0915	21.58	0.1416	0.8292	0.7186	0.7918
SLASHDOT-F	0.5488	2.93	0.0115	0.6007	0.6932	0.8867
Stackex_chemistry	0.7471	30.87	0.2747	0.3320	0.7872	0.8920
Stackex_chess	0.6190	53.52	0.1448	0.3584	0.4739	0.8817
Stackex_coffee	0.7391	62.22	0.2935	0.3068	0.2377	0.6668
Stackex_cooking	0.5169	66.28	0.0979	0.4350	0.8142	0.9105
Stackex_cs	0.5206	39.92	0.1601	0.4478	0.8258	0.9321
Stackex_philosophy	0.5754	41.11	0.1175	0.4214	0.6255	0.8995
tmc2007-500	0.3000	3.21	0.0809	0.7485	0.9020	0.9287
tox21_CDK_ECFP4	0.6301	4.41	0.0783	0.5370	0.7519	0.7403
tox21_RDKit_desc	0.6336	4.61	0.1189	0.5232	0.7793	0.7442
VirusGO	0.0476	0.33	0.0476	0.9603	0.8125	0.9675
VirusPseAAC	0.6667	1.19	0.0238	0.6127	0.5682	0.8198
Water-quality	0.3019	9.28	0.3115	0.6807	0.7028	0.7056
Yahoo_Arts	0.6475	6.30	0.4953	0.5007	0.8684	0.8289
Yahoo_Business	0.1078	1.77	0.1239	0.9021	0.7893	0.9621
Yahoo_Computers	0.4353	3.53	0.3936	0.6570	0.8174	0.9093
Yahoo_Education	0.5927	3.49	0.2919	0.5646	0.7931	0.9210
Yahoo_Entertainment	0.5428	2.77	0.0779	0.6201	0.8825	0.8935
Yahoo_Health	0.3442	2.73	0.1833	0.7378	0.7629	0.9475
Yahoo_Recreation	0.5051	3.58	0.4835	0.6108	0.9031	0.8658
Yahoo_Reference	0.4035	2.57	0.0682	0.6891	0.7216	0.9344
Yahoo_Science	0.5879	5.69	0.0906	0.5410	0.8589	0.8837
Yahoo_Social	0.5438	4.59	0.0677	0.5837	0.7531	0.8940
yeast	0.2686	6.39	0.3045	0.7255	0.8165	0.8261
Yelp	0.2592	1.52	0.2828	0.8171	0.8000	0.8215

Table 63: Detailed results for CLR(US+RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3964	1.94	0.0291	0.7157	0.9452	0.9058
3s-bbc1000	0.7500	2.03	0.6204	0.5273	0.6636	0.6522
3s-guardian1000	0.7419	2.26	0.5081	0.4978	0.5486	0.6451
3s-reuters1000	0.8333	2.10	0.8333	0.4606	0.7148	0.6117
bibtex	0.3811	18.68	0.1658	0.5759	0.9318	0.9348
birds	0.5385	5.87	0.2390	0.5689	0.7385	0.8081
bookmarks	0.6633	42.96	0.1140	0.3707	0.8582	0.8366
CAL500	0.3922	134.67	0.4536	0.4168	0.5226	0.7827
corel16k001	0.9158	58.63	0.3098	0.1330	0.7452	0.7545
Corel5k	0.8120	99.12	0.4214	0.2077	0.4974	0.8780
delicious	0.6333	572.58	0.2379	0.1571	0.7734	0.7833
emotions	0.3167	1.55	0.1736	0.8105	0.8404	0.8662
enron	0.3860	13.12	0.1096	0.5915	0.6146	0.8797
EukaryoteGO	0.1905	0.53	0.0016	0.8846	0.9938	0.9923
EukaryotePseAAC	0.8739	5.51	0.0392	0.3220	0.7227	0.7679
Eurlex-dc	0.2576	9.98	0.0385	0.7817	0.7362	0.9782
Eurlex-sm	0.1922	8.10	0.0269	0.7875	0.8024	0.9788
foodtruck	0.3659	3.29	0.3491	0.7155	0.6759	0.7907
genbase	0.0000	0.66	0.0149	0.9844	0.6667	0.9803
GnegativeGO	0.1357	0.56	0.1196	0.8961	0.8703	0.9577
GnegativePseAAC	0.3500	1.05	0.1625	0.7548	0.7135	0.8800
GpositivePseAAC	0.3269	0.62	0.1346	0.7965	0.8490	0.8473
HumanGO	0.2412	0.68	0.0464	0.8559	0.9724	0.9735
HumanPseAAC	0.7621	3.65	0.2191	0.4276	0.7117	0.7580
Image	0.3650	1.05	0.2296	0.7551	0.8379	0.8321
IMDB-ECC-F	0.8672	10.78	0.1831	0.2896	0.6814	0.7013
IMDB-F	0.8124	10.98	0.1841	0.3115	0.6609	0.7023
LLOG-F	0.7623	12.90	0.1828	0.3530	0.4623	0.8598
mediamill	0.5658	31.58	0.1556	0.3811	0.8132	0.8429
medical	0.1837	3.35	0.0700	0.8572	0.5273	0.9441
Music	0.2667	2.18	0.2949	0.7611	0.8600	0.8505
OHSUMED-F	0.5334	5.41	0.0743	0.5591	0.8434	0.8322
PlantGO	0.2041	0.36	0.0102	0.8912	0.9809	0.9854
PlantPseAAC	0.6939	2.83	0.3707	0.4952	0.6602	0.7707
rcv1subset1	0.5183	12.52	0.1406	0.5493	0.8684	0.9371
REUTERS-K500-EX2	0.5133	6.34	0.0474	0.6093	0.7149	0.9522
scene	0.2863	0.56	0.1048	0.8321	0.9291	0.9300
sider_CDK_ECFP4	0.1338	22.68	0.2107	0.7966	0.5992	0.7458
sider_MordredDesc	0.1620	22.96	0.2570	0.7592	0.5981	0.7144
sider_RDKit_desc	0.1901	22.61	0.2514	0.7584	0.5672	0.7198
SLASHDOT-F	0.5963	3.63	0.3659	0.5357	0.6564	0.8538
Stackex_chemistry	0.7213	30.81	0.0841	0.3174	0.7737	0.8876
Stackex_chess	0.6786	52.98	0.1494	0.3582	0.4644	0.8817
Stackex_coffee	0.7391	62.04	0.2935	0.3026	0.2183	0.6642
Stackex_cooking	0.5845	66.17	0.1071	0.3937	0.8135	0.9075
Stackex_cs	0.6039	39.52	0.1037	0.3977	0.8211	0.9273
Stackex_philosophy	0.6181	42.24	0.1424	0.3785	0.6150	0.8942
tmc2007-500	0.4832	3.91	0.1314	0.6317	0.8891	0.8977
tox21_CDK_ECFP4	0.5925	4.93	0.0755	0.5244	0.6712	0.7099
tox21_RDKit_desc	0.6062	5.17	0.1254	0.5055	0.7118	0.7064
VirusGO	0.0476	0.29	0.0476	0.9683	0.8094	0.9687
VirusPseAAC	0.5238	1.14	0.0238	0.6722	0.6451	0.8459
Water-quality	0.3774	9.71	0.4139	0.6286	0.6648	0.6683
Yahoo_Arts	0.6248	6.73	0.2893	0.4542	0.7442	0.7984
Yahoo_Business	0.1551	2.04	0.0724	0.8627	0.7267	0.9487
Yahoo_Computers	0.4161	3.89	0.3090	0.6598	0.7389	0.8939
Yahoo_Education	0.6800	4.21	0.6049	0.5121	0.7174	0.8949
Yahoo_Entertainment	0.4666	3.30	0.2796	0.6295	0.8494	0.8743
Yahoo_Health	0.2932	2.61	0.1113	0.7696	0.6851	0.9434
Yahoo_Recreation	0.4754	4.53	0.4302	0.6096	0.8501	0.8276
Yahoo_Reference	0.5915	3.50	0.0712	0.5425	0.6691	0.9034
Yahoo_Science	0.5770	6.51	0.0728	0.5110	0.7943	0.8622
Yahoo_Social	0.5371	4.59	0.0757	0.5811	0.7538	0.8945
yeast	0.4587	9.73	0.3997	0.5215	0.6730	0.5849
Yelp	0.3151	1.60	0.3303	0.7895	0.7757	0.8034

Table 64: Detailed results for TSCCM(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4533	3.80	0.3506	0.6371	0.9830	0.9837
3s-bbc1000	0.5556	2.17	0.5972	0.5880	0.9439	0.9455
3s-guardian1000	0.6129	2.00	0.4758	0.5796	0.8581	0.8697
3s-reuters1000	0.6333	1.97	0.5667	0.5483	0.9195	0.9250
bibtex	0.5135	72.56	0.5684	0.3828	0.9884	0.9896
birds	0.4359	8.15	0.5338	0.5299	0.8328	0.9361
bookmarks	0.7189	100.42	0.7259	0.2732	0.9953	0.9955
CAL500	0.7843	150.39	0.6524	0.3049	0.7161	0.8561
corel16k001	0.8395	109.80	0.8326	0.1356	0.9794	0.9805
Corel5k	0.8140	164.05	0.8683	0.1677	0.6725	0.9933
delicious	0.9014	769.99	0.4609	0.0796	0.7391	0.7298
emotions	0.4000	2.70	0.4556	0.6721	0.8162	0.8239
enron	0.4854	24.79	0.4246	0.5074	0.8038	0.9636
EukaryoteGO	0.2178	1.57	0.1042	0.8438	0.9931	0.9946
EukaryotePseAAC	0.7375	6.99	0.6601	0.3653	0.9685	0.9587
Eurlex-dc	0.3968	65.16	0.3631	0.6034	0.7585	0.9990
Eurlex-sm	0.2811	37.42	0.4002	0.6358	0.8286	0.9980
foodtruck	0.3659	4.22	0.3837	0.6725	0.7621	0.8747
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0429	0.21	0.0357	0.9679	0.8743	0.9994
GnegativePseAAC	0.5143	1.53	0.3571	0.6629	0.8040	0.9426
GpositivePseAAC	0.5192	1.17	0.3654	0.6538	0.8374	0.8480
HumanGO	0.2862	2.17	0.2152	0.7712	0.9817	0.9849
HumanPseAAC	0.6945	4.62	0.6293	0.4465	0.9457	0.9327
Image	0.4250	1.31	0.3267	0.7120	0.9133	0.9057
IMDB-ECC-F	0.7511	12.92	0.7082	0.3210	0.9373	0.9441
IMDB-F	0.7399	13.12	0.7003	0.3283	0.9391	0.9460
LLOG-F	0.8361	30.57	0.7452	0.2255	0.5799	0.9790
mediamill	0.2587	57.09	0.3992	0.5441	0.9779	0.9849
medical	0.1429	5.80	0.1582	0.8322	0.5531	0.9975
Music	0.3833	2.63	0.3486	0.7053	0.8685	0.8692
OHSUMED-F	0.5650	9.02	0.4921	0.4844	0.9542	0.9588
PlantGO	0.3646	2.09	0.2882	0.7201	0.9805	0.9825
PlantPseAAC	0.7653	3.79	0.6531	0.4096	0.8959	0.9009
rcv1subset1	0.7383	57.60	0.7846	0.2404	0.9294	0.9894
REUTERS-K500-EX2	0.6220	34.17	0.5611	0.4188	0.7791	0.9932
scene	0.4440	1.24	0.2376	0.7085	0.9173	0.9159
sider_CDK_ECFP4	0.4577	21.88	0.3025	0.7132	0.5948	0.7332
sider_MordredDesc	0.3028	21.94	0.3005	0.7434	0.6231	0.7504
sider_RDKit_desc	0.5000	22.39	0.3002	0.7126	0.6376	0.7480
SLASHDOT-F	0.5212	7.25	0.4881	0.5270	0.7591	0.9870
Stackex_chemistry	0.7853	103.39	0.8304	0.1627	0.9116	0.9919
Stackex_chess	0.7321	130.38	0.7533	0.2011	0.5451	0.9935
Stackex_coffee	0.8696	78.83	0.9167	0.0862	0.2555	0.9850
Stackex_cooking	0.6734	217.66	0.7104	0.2366	0.9205	0.9957
Stackex_cs	0.7226	151.73	0.7577	0.2344	0.8916	0.9939
Stackex_philosophy	0.6960	128.58	0.7300	0.2304	0.7451	0.9940
tmc2007-500	0.3696	6.08	0.3049	0.6653	0.9509	0.9626
tox21_CDK_ECFP4	0.6336	6.16	0.6052	0.4644	0.8941	0.8971
tox21_RDKit_desc	0.6267	5.76	0.5062	0.4801	0.8287	0.8255
VirusGO	0.0476	0.43	0.0635	0.9524	0.8272	0.9937
VirusPseAAC	0.5238	1.76	0.4048	0.6067	0.7025	0.9008
Water-quality	0.5189	10.27	0.4493	0.5863	0.7124	0.7161
Yahoo_Arts	0.6609	13.11	0.7023	0.3640	0.9462	0.9852
Yahoo_Business	0.1479	3.41	0.1791	0.8516	0.8584	0.9953
Yahoo_Computers	0.4185	7.35	0.4886	0.5647	0.8990	0.9876
Yahoo_Education	0.7224	10.31	0.7579	0.3993	0.9032	0.9943
Yahoo_Entertainment	0.6347	4.91	0.6564	0.5024	0.9940	0.9946
Yahoo_Health	0.3474	7.89	0.3975	0.6337	0.8342	0.9868
Yahoo_Recreation	0.5448	7.07	0.5632	0.5289	0.9923	0.9926
Yahoo_Reference	0.4421	5.70	0.4069	0.6161	0.8087	0.9872
Yahoo_Science	0.7014	14.79	0.6812	0.3691	0.9642	0.9900
Yahoo_Social	0.3787	7.97	0.4097	0.6389	0.9205	0.9900
yeast	0.4587	7.31	0.3966	0.6429	0.7877	0.8402
Yelp	0.1555	1.23	0.1397	0.8958	0.9230	0.9340

Table 65: Detailed results for TSCCM(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3363	1.49	0.0810	0.7676	0.9343	0.9291
3s-bbc1000	0.6389	2.14	0.5093	0.5490	0.6809	0.6676
3s-guardian1000	0.7097	1.97	0.5323	0.5323	0.6807	0.7118
3s-reuters1000	0.8333	2.20	0.7333	0.4389	0.7051	0.6026
bibtex	0.6527	42.79	0.2356	0.3290	0.8234	0.8214
birds	0.5897	5.41	0.1752	0.5177	0.6877	0.7926
bookmarks	0.7394	68.35	0.2562	0.2878	0.7512	0.7171
CAL500	0.3137	133.18	0.4103	0.4122	0.5407	0.7685
corel16k001	0.9840	76.77	0.4325	0.0745	0.6641	0.6486
Corel5k	0.9960	175.17	0.2716	0.0346	0.4173	0.6959
delicious	0.8819	769.98	0.4647	0.0868	0.7399	0.7308
emotions	0.2667	1.72	0.1514	0.7980	0.8476	0.8617
enron	0.3860	20.94	0.2249	0.5115	0.5857	0.7938
EukaryoteGO	0.3372	2.06	0.0155	0.7536	0.9081	0.9247
EukaryotePseAAC	0.8005	4.36	0.0655	0.3972	0.7158	0.8096
Eurlex-dc	0.8964	97.93	0.6932	0.1947	0.6138	0.8385
Eurlex-sm	0.4140	37.19	0.1128	0.5234	0.6840	0.8765
foodtruck	0.3415	3.20	0.2220	0.7305	0.6631	0.7969
genbase	0.2239	2.51	0.1828	0.8101	0.6296	0.9276
GnegativeGO	0.1071	0.45	0.0821	0.9207	0.8428	0.9558
GnegativePseAAC	0.2071	0.60	0.0339	0.8588	0.7467	0.9319
GpositivePseAAC	0.2885	0.52	0.1346	0.8221	0.9213	0.8961
HumanGO	0.3633	1.87	0.0774	0.7373	0.8759	0.8909
HumanPseAAC	0.6945	3.11	0.1664	0.5003	0.6823	0.7872
Image	0.2900	0.86	0.0721	0.8114	0.8824	0.8684
IMDB-ECC-F	0.6675	7.62	0.2088	0.4486	0.6601	0.8018
IMDB-F	0.6705	8.02	0.2217	0.4402	0.6491	0.7948
LLOG-F	0.8033	15.41	0.2120	0.3156	0.4248	0.8327
mediamill	0.6779	41.92	0.2118	0.3006	0.7161	0.7767
medical	0.4286	5.07	0.2557	0.6366	0.4900	0.9142
Music	0.2667	2.05	0.2125	0.7870	0.8416	0.8387
OHSUMED-F	0.4716	4.84	0.1458	0.5998	0.8227	0.8507
PlantGO	0.5918	2.40	0.1726	0.5877	0.9246	0.8221
PlantPseAAC	0.6020	2.20	0.2202	0.5778	0.7741	0.8327
rcv1subset1	0.7747	57.62	0.7828	0.2780	0.9445	0.9869
REUTERS-K500-EX2	0.7083	14.75	0.0690	0.3908	0.5853	0.8783
scene	0.2116	0.43	0.0716	0.8750	0.9405	0.9472
sider_CDK_ECFP4	0.1479	19.42	0.1321	0.8112	0.5791	0.7809
sider_MordredDesc	0.2254	21.68	0.2781	0.7055	0.5520	0.6632
sider_RDKit_desc	0.2254	21.60	0.2633	0.7169	0.5618	0.6769
SLASHDOT-F	0.4090	2.73	0.0158	0.6800	0.6385	0.8966
Stackex_chemistry	0.9756	68.01	0.3429	0.0857	0.5920	0.7195
Stackex_chess	1.0000	96.35	0.2877	0.0545	0.3274	0.7211
Stackex_coffee	0.7826	60.70	0.2962	0.2385	0.2090	0.6654
Stackex_cooking	0.7024	217.64	0.7209	0.2408	0.9379	0.9957
Stackex_cs	0.9719	116.47	0.2375	0.0669	0.5832	0.7078
Stackex_philosophy	0.9774	91.30	0.2731	0.0719	0.4482	0.7284
tmc2007-500	0.3364	3.68	0.1158	0.7054	0.8947	0.9062
tox21_CDK_ECFP4	0.5377	4.49	0.0983	0.5583	0.6662	0.7197
tox21_RDKit_desc	0.5993	5.13	0.1994	0.5010	0.6533	0.6785
VirusGO	0.2381	0.76	0.0079	0.8484	0.7295	0.9038
VirusPseAAC	0.1905	0.62	0.0000	0.8683	0.6161	0.9126
Water-quality	0.3585	9.34	0.3462	0.6511	0.6483	0.6717
Yahoo_Arts	0.5714	6.98	0.3626	0.5168	0.6870	0.7820
Yahoo_Business	0.1203	2.81	0.1453	0.8726	0.6404	0.9302
Yahoo_Computers	0.4659	5.83	0.4563	0.5777	0.6376	0.8408
Yahoo_Education	0.6484	5.49	0.5676	0.4867	0.6243	0.8620
Yahoo_Entertainment	0.6771	4.39	0.3419	0.4801	0.7037	0.8109
Yahoo_Health	0.4332	4.66	0.3506	0.6504	0.6036	0.8972
Yahoo_Recreation	0.5791	5.80	0.5031	0.5238	0.7132	0.7618
Yahoo_Reference	0.5803	5.35	0.3588	0.5337	0.6292	0.8566
Yahoo_Science	0.7745	11.74	0.4543	0.3453	0.6460	0.7371
Yahoo_Social	0.5503	7.21	0.4053	0.5400	0.5943	0.8306
yeast	0.2810	7.14	0.2537	0.7022	0.6861	0.7780
Yelp	0.2283	1.47	0.1625	0.8382	0.7938	0.8331

Table 66: Detailed results for TSPCCM(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4528	3.80	0.3506	0.6378	0.9830	0.9837
3s-bbc1000	0.5556	2.17	0.5972	0.5880	0.9439	0.9455
3s-guardian1000	0.6129	2.00	0.4758	0.5796	0.8581	0.8697
3s-reuters1000	0.6333	1.97	0.5667	0.5483	0.9195	0.9250
bibtex	0.5149	72.56	0.5680	0.3827	0.9884	0.9896
birds	0.4359	8.15	0.5338	0.5299	0.8328	0.9361
bookmarks	0.7231	100.42	0.7259	0.2717	0.9953	0.9955
CAL500	0.7647	150.39	0.6576	0.2947	0.7159	0.8560
corel16k001	0.8453	109.80	0.8326	0.1344	0.9794	0.9805
Corel5k	0.8100	164.04	0.8671	0.1683	0.6725	0.9933
delicious	0.5693	886.77	0.7055	0.2083	0.9830	0.9892
emotions	0.4000	2.70	0.4556	0.6721	0.8162	0.8239
enron	0.4971	24.81	0.4251	0.5045	0.8037	0.9636
EukaryoteGO	0.2178	1.57	0.1042	0.8438	0.9931	0.9946
EukaryotePseAAC	0.7362	6.99	0.6601	0.3660	0.9685	0.9587
Eurlex-dc	0.3968	65.16	0.3631	0.6033	0.7585	0.9990
Eurlex-sm	0.2822	37.42	0.4003	0.6355	0.8286	0.9980
foodtruck	0.5122	4.32	0.3280	0.6269	0.7631	0.8709
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0429	0.21	0.0357	0.9679	0.8743	0.9994
GnegativePseAAC	0.5143	1.54	0.3571	0.6617	0.8040	0.9425
GpositivePseAAC	0.5192	1.17	0.3654	0.6538	0.8374	0.8480
HumanGO	0.2926	2.17	0.2152	0.7686	0.9815	0.9848
HumanPseAAC	0.6945	4.62	0.6293	0.4466	0.9457	0.9326
Image	0.4250	1.31	0.3267	0.7120	0.9133	0.9057
IMDB-ECC-F	0.7535	12.93	0.7085	0.3194	0.9373	0.9441
IMDB-F	0.7381	13.12	0.7002	0.3287	0.9390	0.9460
LLOG-F	0.8361	30.58	0.7452	0.2242	0.5799	0.9790
mediamill	0.2468	57.08	0.3992	0.5483	0.9779	0.9849
medical	0.1429	5.80	0.1582	0.8322	0.5531	0.9975
Music	0.3833	2.63	0.3486	0.7053	0.8679	0.8687
OHSUMED-F	0.5657	9.02	0.4921	0.4841	0.9542	0.9588
PlantGO	0.3646	2.09	0.2882	0.7201	0.9805	0.9825
PlantPseAAC	0.7755	3.82	0.6531	0.4019	0.8960	0.9008
rcv1subset1	0.7400	57.60	0.7846	0.2401	0.9294	0.9894
REUTERS-K500-EX2	0.6186	34.18	0.5611	0.4198	0.7791	0.9932
scene	0.4440	1.24	0.2376	0.7085	0.9173	0.9159
sider_CDK_ECFP4	0.4507	21.91	0.3026	0.7122	0.5942	0.7332
sider_MordredDesc	0.3028	21.93	0.3008	0.7439	0.6232	0.7504
sider_RDKit_desc	0.4789	22.30	0.2973	0.7136	0.6381	0.7488
SLASHDOT-F	0.5212	7.25	0.4881	0.5270	0.7591	0.9870
Stackex_chemistry	0.7867	103.39	0.8304	0.1619	0.9116	0.9919
Stackex_chess	0.7321	130.38	0.7533	0.2010	0.5451	0.9935
Stackex_coffee	0.8696	78.83	0.9167	0.0862	0.2555	0.9850
Stackex_cooking	0.6773	217.67	0.7104	0.2356	0.9205	0.9957
Stackex_cs	0.7237	151.73	0.7578	0.2341	0.8916	0.9939
Stackex_philosophy	0.6935	128.58	0.7300	0.2311	0.7451	0.9940
tmc2007-500	0.3710	6.09	0.3065	0.6632	0.9508	0.9626
tox21_CDK_ECFP4	0.6336	6.16	0.6052	0.4644	0.8941	0.8971
tox21_RDKit_desc	0.6336	5.74	0.5045	0.4819	0.8289	0.8259
VirusGO	0.0476	0.43	0.0635	0.9524	0.8272	0.9937
VirusPseAAC	0.5238	1.76	0.4048	0.6067	0.7025	0.9008
Water-quality	0.5189	10.35	0.4634	0.5824	0.7107	0.7141
Yahoo_Arts	0.6609	13.10	0.7023	0.3640	0.9462	0.9852
Yahoo_Business	0.1479	3.41	0.1791	0.8516	0.8584	0.9953
Yahoo_Computers	0.4150	7.32	0.5097	0.5962	0.8979	0.9667
Yahoo_Education	0.7224	10.31	0.7579	0.3993	0.9032	0.9943
Yahoo_Entertainment	0.6347	4.91	0.6564	0.5024	0.9940	0.9946
Yahoo_Health	0.3474	7.89	0.3975	0.6337	0.8342	0.9868
Yahoo_Recreation	0.5448	7.07	0.5632	0.5289	0.9923	0.9926
Yahoo_Reference	0.4421	5.70	0.4069	0.6161	0.8087	0.9872
Yahoo_Science	0.7014	14.79	0.6820	0.3695	0.9642	0.9900
Yahoo_Social	0.5531	8.96	0.5947	0.4865	0.9113	0.9718
yeast	0.4421	7.33	0.3900	0.6468	0.7889	0.8406
Yelp	0.1555	1.23	0.1388	0.8960	0.9231	0.9341

Table 67: Detailed results for TSPCCM(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3036	1.30	0.0718	0.7923	0.9408	0.9378
3s-bbc1000	0.6667	2.06	0.5417	0.5485	0.6779	0.6842
3s-guardian1000	0.6774	1.97	0.4677	0.5315	0.6663	0.7086
3s-reuters1000	0.8333	2.30	0.6917	0.4350	0.6818	0.5963
bibtex	0.4203	22.77	0.1213	0.5197	0.8810	0.9116
birds	0.5897	5.36	0.1752	0.5235	0.7017	0.7984
bookmarks	0.7402	68.46	0.2567	0.2871	0.7512	0.7166
CAL500	0.2549	129.41	0.3920	0.4212	0.5413	0.7698
corel16k001	0.6957	40.18	0.0922	0.3253	0.7640	0.8641
Corel5k	0.6420	100.04	0.3982	0.3202	0.5163	0.8916
delicious	0.5757	886.77	0.7157	0.2112	0.9662	0.9973
emotions	0.2833	1.67	0.1500	0.7988	0.8529	0.8620
enron	0.3977	21.29	0.2189	0.5084	0.5962	0.7927
EukaryoteGO	0.3140	2.01	0.0144	0.7709	0.9387	0.9262
EukaryotePseAAC	0.8018	4.27	0.0507	0.4000	0.7273	0.8145
Eurlex-dc	0.3843	65.15	0.3533	0.6282	0.7652	0.9948
Eurlex-sm	0.4140	37.21	0.1128	0.5240	0.6875	0.8764
foodtruck	0.3171	3.34	0.2503	0.7398	0.6502	0.7952
genbase	0.1194	2.48	0.1791	0.8480	0.6667	0.9265
GnegativeGO	0.1071	0.45	0.0821	0.9207	0.8420	0.9558
GnegativePseAAC	0.2143	0.64	0.0321	0.8512	0.7458	0.9314
GpositivePseAAC	0.3077	0.52	0.1346	0.8157	0.9267	0.9013
HumanGO	0.3698	1.86	0.0748	0.7351	0.8761	0.8915
HumanPseAAC	0.6977	3.05	0.1696	0.4999	0.6857	0.7903
Image	0.2950	0.87	0.0771	0.8081	0.8821	0.8679
IMDB-ECC-F	0.6661	7.45	0.2008	0.4554	0.6681	0.8073
IMDB-F	0.7139	13.11	0.7072	0.3318	0.9468	0.9315
LLOG-F	0.7787	14.91	0.2264	0.3493	0.4550	0.8393
mediamill	0.6793	43.58	0.2204	0.3056	0.7175	0.7712
medical	0.3878	4.98	0.2455	0.6683	0.5113	0.9141
Music	0.2500	2.03	0.2125	0.7884	0.8442	0.8425
OHSUMED-F	0.4365	4.48	0.1242	0.6294	0.8308	0.8633
PlantGO	0.5408	2.37	0.1811	0.6103	0.9318	0.8246
PlantPseAAC	0.6224	2.12	0.2202	0.5760	0.7824	0.8411
rcv1subset1	0.7240	57.59	0.7966	0.2311	0.9161	0.9885
REUTERS-K500-EX2	0.4917	9.04	0.0593	0.5980	0.6936	0.9313
scene	0.2116	0.43	0.0716	0.8750	0.9404	0.9472
sider_CDK_ECFP4	0.1338	19.46	0.1275	0.8205	0.5875	0.7843
sider_MordredDesc	0.2394	21.68	0.2797	0.7027	0.5514	0.6609
sider_RDKit_desc	0.2254	21.68	0.2724	0.7127	0.5619	0.6719
SLASHDOT-F	0.3747	2.32	0.0152	0.7158	0.6704	0.9139
Stackex_chemistry	0.6221	34.73	0.1693	0.3946	0.7577	0.8773
Stackex_chess	0.5774	64.80	0.1616	0.3440	0.4604	0.8462
Stackex_coffee	0.7826	60.26	0.2630	0.2638	0.1983	0.6829
Stackex_cooking	0.5990	102.76	0.1384	0.3792	0.7804	0.8589
Stackex_cs	0.4729	50.09	0.1302	0.4858	0.7858	0.9104
Stackex_philosophy	0.5854	58.82	0.1503	0.3953	0.5877	0.8475
tmc2007-500	0.3140	3.40	0.0897	0.7275	0.9018	0.9160
tox21_CDK_ECFP4	0.5308	4.42	0.0877	0.5698	0.6705	0.7249
tox21_RDKit_desc	0.6164	5.13	0.1967	0.4943	0.6525	0.6792
VirusGO	0.1429	0.71	0.0079	0.8841	0.7260	0.9105
VirusPseAAC	0.1905	0.62	0.0000	0.8683	0.6161	0.9126
Water-quality	0.3396	9.22	0.3272	0.6648	0.6657	0.6885
Yahoo_Arts	0.5554	6.90	0.3550	0.5267	0.6942	0.7845
Yahoo_Business	0.1212	2.79	0.1448	0.8733	0.6369	0.9304
Yahoo_Computers	0.4586	5.79	0.4477	0.5839	0.6397	0.8426
Yahoo_Education	0.6326	5.29	0.5436	0.5104	0.6179	0.8675
Yahoo_Entertainment	0.6583	4.33	0.3357	0.4919	0.7009	0.8140
Yahoo_Health	0.4235	4.60	0.3460	0.6578	0.6028	0.8986
Yahoo_Recreation	0.5713	5.70	0.4958	0.5319	0.7220	0.7657
Yahoo_Reference	0.5666	5.25	0.3603	0.5425	0.6318	0.8589
Yahoo_Science	0.7605	11.48	0.4363	0.3583	0.6548	0.7418
Yahoo_Social	0.5305	7.02	0.3841	0.5576	0.5863	0.8334
yeast	0.2975	7.14	0.2565	0.7002	0.6881	0.7798
Yelp	0.2233	1.45	0.1530	0.8431	0.7970	0.8348

Table 68: Detailed results for TSVM(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4098	3.73	0.3548	0.6625	0.9833	0.9839
3s-bbc1000	0.5000	2.11	0.5417	0.6157	0.9459	0.9463
3s-guardian1000	0.5484	1.90	0.4355	0.6145	0.8598	0.8729
3s-reuters1000	0.5667	1.93	0.5667	0.5733	0.9219	0.9272
bibtex	0.4378	72.48	0.5652	0.4151	0.9884	0.9897
birds	0.4615	8.15	0.5440	0.5222	0.8325	0.9356
bookmarks	0.6522	95.64	0.6741	0.3205	0.9908	0.9916
CAL500	0.1765	150.39	0.6385	0.3744	0.7159	0.8562
corel16k001	0.7865	109.78	0.8314	0.1526	0.9794	0.9805
Corel5k	0.7560	164.04	0.8688	0.1807	0.6725	0.9933
delicious	0.3418	886.75	0.7050	0.2546	0.9830	0.9892
emotions	0.3833	2.72	0.4236	0.6735	0.8195	0.8265
enron	0.2456	24.67	0.4126	0.5847	0.8040	0.9643
EukaryoteGO	0.2139	1.57	0.1035	0.8448	0.9930	0.9947
EukaryotePseAAC	0.6976	6.94	0.6601	0.3876	0.9685	0.9590
Eurlex-dc	0.3544	65.06	0.3625	0.6278	0.7585	0.9990
Eurlex-sm	0.2212	37.34	0.3974	0.6616	0.8287	0.9980
foodtruck	0.3415	4.22	0.3762	0.6894	0.7627	0.8749
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0429	0.21	0.0357	0.9679	0.8744	0.9994
GnegativePseAAC	0.4571	1.46	0.3518	0.6909	0.8049	0.9443
GpositivePseAAC	0.5192	1.13	0.3269	0.6603	0.8329	0.8506
HumanGO	0.2765	2.14	0.2111	0.7779	0.9813	0.9852
HumanPseAAC	0.7106	4.62	0.6261	0.4412	0.9452	0.9327
Image	0.3900	1.28	0.3329	0.7286	0.9130	0.9061
IMDB-ECC-F	0.7083	12.89	0.7063	0.3387	0.9374	0.9443
IMDB-F	0.6950	13.08	0.6979	0.3469	0.9390	0.9462
LLOG-F	0.8197	30.53	0.7473	0.2295	0.5800	0.9791
mediamill	0.1454	57.03	0.3978	0.5798	0.9780	0.9850
medical	0.1531	5.80	0.1582	0.8316	0.5531	0.9975
Music	0.3667	2.73	0.3569	0.6947	0.8687	0.8680
OHSUMED-F	0.4702	8.90	0.4864	0.5317	0.9546	0.9594
PlantGO	0.3333	2.05	0.2882	0.7366	0.9809	0.9830
PlantPseAAC	0.8367	3.98	0.6633	0.3623	0.8952	0.9001
rcv1subset1	0.6400	57.56	0.7821	0.2691	0.9294	0.9895
REUTERS-K500-EX2	0.5670	34.12	0.5603	0.4443	0.7791	0.9932
scene	0.3817	1.16	0.2199	0.7407	0.9168	0.9191
sider_CDK_ECFP4	0.1408	21.75	0.2392	0.8076	0.6038	0.7772
sider_MordredDesc	0.0775	21.79	0.2604	0.8125	0.6283	0.7771
sider_RDKit_desc	0.0845	22.32	0.2496	0.8055	0.6431	0.7837
SLASHDOT-F	0.4974	7.22	0.4854	0.5380	0.7592	0.9872
Stackex_chemistry	0.7695	103.38	0.8313	0.1740	0.9116	0.9919
Stackex_chess	0.6845	130.35	0.7533	0.2244	0.5451	0.9935
Stackex_coffee	0.8696	78.83	0.9167	0.0886	0.2555	0.9850
Stackex_cooking	0.6261	217.60	0.7099	0.2581	0.9205	0.9957
Stackex_cs	0.6631	151.68	0.7566	0.2546	0.8917	0.9939
Stackex_philosophy	0.6608	128.53	0.7267	0.2466	0.7451	0.9941
tmc2007-500	0.2944	6.00	0.3030	0.6974	0.9514	0.9634
tox21_CDK_ECFP4	0.6233	6.16	0.6094	0.4621	0.8938	0.8972
tox21_RDKit_desc	0.5822	5.75	0.5147	0.4941	0.8292	0.8272
VirusGO	0.0952	0.43	0.0635	0.9405	0.8272	0.9933
VirusPseAAC	0.5714	1.81	0.4048	0.5869	0.7042	0.9021
Water-quality	0.3868	10.23	0.4318	0.6352	0.7190	0.7285
Yahoo_Arts	0.6355	13.07	0.7031	0.3774	0.9463	0.9852
Yahoo_Business	0.1203	3.38	0.1805	0.8648	0.8583	0.9953
Yahoo_Computers	0.4064	7.32	0.4974	0.5716	0.8990	0.9877
Yahoo_Education	0.7091	10.30	0.7527	0.4059	0.9032	0.9943
Yahoo_Entertainment	0.6119	4.89	0.6545	0.5134	0.9941	0.9946
Yahoo_Health	0.3246	7.85	0.3981	0.6449	0.8342	0.9868
Yahoo_Recreation	0.5269	7.06	0.5649	0.5390	0.9923	0.9926
Yahoo_Reference	0.4284	5.67	0.4044	0.6249	0.8086	0.9872
Yahoo_Science	0.6750	14.74	0.6765	0.3843	0.9642	0.9900
Yahoo_Social	0.5338	8.94	0.5726	0.5030	0.9184	0.9962
yeast	0.3182	7.29	0.3769	0.6842	0.7891	0.8477
Yelp	0.1047	1.20	0.1328	0.9151	0.9256	0.9374

Table 69: Detailed results for TSVM(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3218	1.38	0.0762	0.7792	0.9381	0.9341
3s-bbc1000	0.5833	2.00	0.4722	0.5863	0.6924	0.6876
3s-guardian1000	0.6774	1.94	0.4677	0.5419	0.6773	0.7208
3s-reuters1000	0.8333	2.23	0.7000	0.4361	0.6867	0.5938
bibtex	0.4230	23.17	0.1200	0.5172	0.8809	0.9098
birds	0.5897	5.28	0.1752	0.5260	0.6997	0.7970
bookmarks	0.7402	68.46	0.2258	0.2871	0.7512	0.7166
CAL500	0.2745	131.12	0.3882	0.4262	0.5445	0.7699
corel16k001	0.6659	40.81	0.0818	0.3337	0.7604	0.8630
Corel5k	0.6200	101.36	0.4017	0.3217	0.5055	0.8899
delicious	0.3380	886.76	0.7130	0.2337	0.9966	0.9681
emotions	0.2833	1.68	0.1472	0.7947	0.8510	0.8634
enron	0.4035	21.47	0.2215	0.5024	0.5860	0.7905
EukaryoteGO	0.3333	2.09	0.0141	0.7552	0.9391	0.9234
EukaryotePseAAC	0.7851	4.25	0.0485	0.4076	0.7238	0.8142
Eurlex-dc	0.3479	65.04	0.3680	0.6398	0.7768	0.9826
Eurlex-sm	0.2325	37.31	0.3595	0.6256	0.8041	0.9828
foodtruck	0.3659	3.20	0.2473	0.7351	0.6630	0.7983
genbase	0.3881	2.99	0.2023	0.7158	0.6501	0.9111
GnegativeGO	0.1357	0.48	0.0893	0.9064	0.8435	0.9555
GnegativePseAAC	0.2143	0.64	0.0321	0.8500	0.7470	0.9309
GpositivePseAAC	0.2885	0.52	0.1346	0.8221	0.9156	0.8961
HumanGO	0.3730	1.86	0.0742	0.7337	0.8737	0.8911
HumanPseAAC	0.6849	3.03	0.1660	0.5091	0.6850	0.7918
Image	0.2950	0.88	0.0783	0.8071	0.8850	0.8698
IMDB-ECC-F	0.6612	7.38	0.2026	0.4589	0.6671	0.8085
IMDB-F	0.6561	7.69	0.2103	0.4569	0.6571	0.8047
LLOG-F	0.7623	15.00	0.2284	0.3524	0.4542	0.8392
mediamill	0.6648	42.61	0.2171	0.3132	0.7203	0.7753
medical	0.3878	5.07	0.2455	0.6664	0.5144	0.9127
Music	0.2500	2.02	0.2111	0.7874	0.8472	0.8470
OHSUMED-F	0.4350	4.48	0.1250	0.6301	0.8315	0.8635
PlantGO	0.5918	2.45	0.1726	0.5846	0.9265	0.8187
PlantPseAAC	0.6122	2.12	0.2202	0.5796	0.7782	0.8400
rcv1subset1	0.6589	57.51	0.7365	0.2240	0.9537	0.9894
REUTERS-K500-EX2	0.4917	9.12	0.0559	0.5993	0.7012	0.9303
scene	0.2199	0.45	0.0716	0.8694	0.9381	0.9455
sider_CDK_ECFP4	0.1338	19.44	0.1311	0.8213	0.5845	0.7845
sider_MordredDesc	0.2394	21.73	0.2799	0.7028	0.5526	0.6611
sider_RDKit_desc	0.2254	21.66	0.2713	0.7145	0.5608	0.6732
SLASHDOT-F	0.3641	2.37	0.0125	0.7215	0.6756	0.9112
Stackex_chemistry	0.6236	35.05	0.1715	0.3954	0.7639	0.8766
Stackex_chess	0.5774	65.10	0.1561	0.3435	0.4603	0.8450
Stackex_coffee	0.7826	60.17	0.2678	0.2621	0.2044	0.6827
Stackex_cooking	0.5990	102.67	0.1665	0.3788	0.7804	0.8590
Stackex_cs	0.4697	50.82	0.1262	0.4854	0.7896	0.9091
Stackex_philosophy	0.5930	58.97	0.1481	0.3933	0.5906	0.8471
tmc2007-500	0.2916	3.35	0.0860	0.7400	0.9038	0.9181
tox21_CDK_ECFP4	0.5103	4.42	0.0797	0.5748	0.6760	0.7277
tox21_RDKit_desc	0.6130	5.12	0.1990	0.4950	0.6521	0.6789
VirusGO	0.1905	0.76	0.0079	0.8603	0.7424	0.9034
VirusPseAAC	0.1905	0.62	0.0000	0.8683	0.6161	0.9126
Water-quality	0.3491	9.23	0.3302	0.6570	0.6584	0.6838
Yahoo_Arts	0.5607	6.91	0.3558	0.5222	0.6940	0.7842
Yahoo_Business	0.1221	2.79	0.1457	0.8727	0.6372	0.9303
Yahoo_Computers	0.4618	5.79	0.4495	0.5820	0.6389	0.8425
Yahoo_Education	0.6401	5.32	0.5548	0.5045	0.6193	0.8668
Yahoo_Entertainment	0.6661	4.34	0.3358	0.4879	0.7008	0.8135
Yahoo_Health	0.4245	4.61	0.3487	0.6570	0.6017	0.8984
Yahoo_Recreation	0.5853	5.72	0.4941	0.5247	0.7205	0.7651
Yahoo_Reference	0.5679	5.24	0.3616	0.5421	0.6326	0.8592
Yahoo_Science	0.7621	11.48	0.4359	0.3579	0.6543	0.7416
Yahoo_Social	0.5322	7.02	0.3831	0.5562	0.5864	0.8333
yeast	0.2934	7.10	0.2586	0.6991	0.6906	0.7828
Yelp	0.2134	1.42	0.1594	0.8488	0.8015	0.8404

Table 70: Detailed results for LP(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3290	1.46	0.0855	0.7721	0.5888	0.5954
3s-bbc1000	0.6667	2.50	0.6065	0.5208	0.5319	0.5337
3s-guardian1000	0.5806	2.10	0.5484	0.5849	0.4980	0.5290
3s-reuters1000	0.8333	2.23	0.8000	0.4400	0.4923	0.5264
bibtex	0.8608	89.84	0.6618	0.1577	0.8983	0.8494
birds	0.9487	9.82	0.9744	0.2462	0.8947	1.0000
bookmarks	0.9143	120.03	0.3525	0.1029	0.9284	0.8929
CAL500	0.8235	167.75	0.2558	0.1617	0.7984	0.6863
corel16k001	0.9964	110.06	0.1762	0.0348	0.8859	0.8270
Corel5k	0.9880	318.23	0.5829	0.0255	0.6359	0.5890
delicious	0.9975	906.20	0.1903	0.0242	0.9758	0.9853
emotions	0.2667	1.70	0.1667	0.7991	0.7307	0.7395
enron	0.5614	29.40	0.5029	0.4266	0.6033	0.6911
EukaryoteGO	0.3282	2.14	0.0197	0.7578	0.7113	0.8462
EukaryotePseAAC	0.9138	9.33	0.7937	0.2386	0.9455	0.9473
Eurlex-dc	0.8971	143.20	0.8851	0.1188	0.7380	0.9573
Eurlex-sm	0.8114	104.78	0.6992	0.1297	0.7813	0.8211
foodtruck	0.3415	2.85	0.3039	0.7336	0.5688	0.7508
genbase	0.6418	3.72	0.4328	0.5406	0.5890	0.8528
GnegativeGO	0.1286	0.48	0.1036	0.9080	0.7175	0.8454
GnegativePseAAC	0.1929	0.64	0.0536	0.8609	0.6395	0.8325
GpositivePseAAC	0.3077	0.46	0.0769	0.8237	0.7109	0.7578
HumanGO	0.3408	1.94	0.0796	0.7470	0.6856	0.7774
HumanPseAAC	0.9068	6.57	0.8376	0.2920	0.9620	0.9645
Image	0.2800	0.86	0.0808	0.8141	0.7491	0.7413
IMDB-ECC-F	0.6506	7.42	0.1722	0.4681	0.5178	0.5355
IMDB-F	0.6404	7.71	0.1822	0.4673	0.5167	0.5345
LLOG-F	0.8443	32.66	0.2898	0.2103	0.4266	0.7427
mediamill	0.9905	78.56	1.0000	0.0533	1.0000	1.0000
medical	0.5000	12.51	0.5145	0.4843	0.4501	0.7870
Music	0.2667	2.00	0.1833	0.7922	0.7884	0.7834
OHSUMED-F	0.4286	4.63	0.1590	0.6323	0.5747	0.5795
PlantGO	0.6122	2.50	0.1726	0.5694	0.6190	0.7154
PlantPseAAC	0.6531	2.90	0.2168	0.5187	0.5196	0.6140
rcv1subset1	0.9750	75.65	1.0000	0.0861	0.9312	0.9330
REUTERS-K500-EX2	0.9100	50.60	0.6935	0.1586	0.6671	0.8175
scene	0.2075	0.49	0.0768	0.8725	0.8616	0.8618
sider_CDK_ECFP4	0.5423	20.25	0.4147	0.6894	0.3886	0.4796
sider_MordredDesc	0.5915	24.94	1.0000	0.5511	1.0000	1.0000
sider_RDKit_desc	0.1479	19.62	0.2284	0.7925	0.4076	0.5007
SLASHDOT-F	0.4380	2.87	0.0092	0.6609	0.4372	0.7367
Stackex_chemistry	0.9885	105.20	0.1868	0.0384	0.8374	0.8640
Stackex_chess	1.0000	146.79	0.1117	0.0266	0.5187	0.8913
Stackex_coffee	1.0000	67.00	0.9728	0.0593	0.2410	0.8492
Stackex_cooking	0.9952	265.92	0.0889	0.0247	0.8843	0.9099
Stackex_cs	0.9968	194.57	0.1892	0.0303	0.8485	0.8063
Stackex_philosophy	0.9975	138.88	0.0830	0.0225	0.7117	0.9143
tmc2007-500	0.2290	2.66	0.0520	0.8114	0.6173	0.6795
tox21_CDK_ECFP4	0.5377	4.45	0.1549	0.5792	0.5394	0.5785
tox21_RDKit_desc	0.5377	4.40	0.1523	0.5825	0.5759	0.6311
VirusGO	0.2381	1.05	0.0675	0.8058	0.5159	0.7727
VirusPseAAC	0.2381	0.76	0.0000	0.8270	0.5825	0.7995
Water-quality	0.3491	9.45	0.2304	0.6559	0.5235	0.6173
Yahoo_Arts	0.6929	8.62	0.5431	0.4245	0.7561	0.8089
Yahoo_Business	0.1275	3.29	0.1856	0.8646	0.7268	0.9102
Yahoo_Computers	0.4707	6.63	0.5372	0.5700	0.8002	0.9085
Yahoo_Education	0.6708	6.48	0.5830	0.4771	0.7593	0.8686
Yahoo_Entertainment	0.7133	4.75	0.4183	0.4509	0.7817	0.8030
Yahoo_Health	0.5255	5.59	0.4518	0.5936	0.6961	0.8834
Yahoo_Recreation	0.6999	6.54	0.6240	0.4376	0.7221	0.7518
Yahoo_Reference	0.5928	6.16	0.4224	0.5142	0.7097	0.9143
Yahoo_Science	0.8491	14.32	0.5882	0.2863	0.8863	0.9122
Yahoo_Social	0.5710	8.34	0.4371	0.5171	0.8794	0.9622
yeast	0.3512	6.76	0.3743	0.6886	0.7783	0.8226
Yelp	0.2173	1.40	0.1749	0.8486	0.4694	0.4791

Table 71: Detailed results for LP(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2495	0.77	0.0364	0.8383	0.9750	0.9764
3s-bbc1000	0.7500	2.53	0.7569	0.4618	0.6180	0.6091
3s-guardian1000	0.4839	2.00	0.5645	0.6358	0.4809	0.6517
3s-reuters1000	0.9000	2.73	0.8667	0.3647	0.4807	0.4662
bibtex	0.9095	95.81	0.5552	0.1185	0.8587	0.8250
birds	0.6154	8.03	0.2584	0.4178	0.5023	0.6886
bookmarks	0.9194	120.82	0.1656	0.0973	0.9308	0.8764
CAL500	0.8235	167.67	0.2543	0.1617	0.7795	0.6861
corel16k001	0.9964	109.87	0.1762	0.0348	0.8854	0.8270
Corel5k	0.9880	317.54	0.5822	0.0255	0.6360	0.5954
delicious	0.9975	906.13	0.1901	0.0242	0.9785	0.9853
emotions	0.2000	1.58	0.1292	0.8406	0.8647	0.8852
enron	0.5848	31.18	0.6018	0.2902	0.5554	0.6215
EukaryoteGO	0.2036	0.50	0.0021	0.8833	0.9877	0.9912
EukaryotePseAAC	0.5122	2.18	0.0118	0.6495	0.7584	0.9167
Eurlex-dc	0.8991	155.08	0.8816	0.1119	0.7099	0.8906
Eurlex-sm	0.7669	122.45	0.5573	0.1574	0.7414	0.7198
foodtruck	0.2439	3.20	0.3538	0.7590	0.4008	0.7708
genbase	0.0000	0.63	0.0112	0.9869	0.6296	0.9875
GnegativeGO	0.0286	0.10	0.0071	0.9827	0.8689	0.9962
GnegativePseAAC	0.2786	0.64	0.1304	0.8289	0.7726	0.9492
GpositivePseAAC	0.2500	0.42	0.1346	0.8494	0.9350	0.9260
HumanGO	0.1833	0.56	0.0204	0.8908	0.9678	0.9781
HumanPseAAC	0.6206	2.48	0.0648	0.5622	0.6948	0.8417
Image	0.2250	0.66	0.0554	0.8589	0.8876	0.8858
IMDB-ECC-F	0.6387	7.48	0.1834	0.4705	0.6514	0.8130
IMDB-F	0.6343	7.57	0.1885	0.4784	0.6381	0.8134
LLOG-F	0.9426	40.15	0.4875	0.0967	0.4605	0.6444
mediamill	0.9945	86.37	0.2950	0.0608	0.7939	0.7266
medical	0.5714	11.35	0.5536	0.4610	0.4265	0.7252
Music	0.2333	1.92	0.1958	0.8114	0.8715	0.8747
OHSUMED-F	0.5894	5.63	0.2110	0.5337	0.8327	0.8349
PlantGO	0.2188	0.44	0.0365	0.8767	0.9650	0.9693
PlantPseAAC	0.6531	2.27	0.1505	0.5576	0.7774	0.8427
rcv1subset1	0.9833	65.81	0.3725	0.0503	0.6939	0.6038
REUTERS-K500-EX2	0.9313	55.94	0.8404	0.1162	0.7244	0.7664
scene	0.2324	0.46	0.0685	0.8648	0.9396	0.9467
sider_CDK_ECFP4	0.0915	19.29	0.0982	0.8427	0.4600	0.8017
sider_MordredDesc	0.0986	19.30	0.1006	0.8411	0.4788	0.8022
sider_RDKit_desc	0.1338	19.27	0.1010	0.8353	0.4754	0.8013
SLASHDOT-F	0.4180	2.40	0.0198	0.6901	0.6775	0.9186
Stackex_chemistry	0.9856	105.28	0.1440	0.0382	0.8328	0.8667
Stackex_chess	1.0000	146.95	0.1114	0.0266	0.5121	0.8916
Stackex_coffee	1.0000	65.96	0.3158	0.0692	0.2342	0.8434
Stackex_cooking	0.9981	266.73	0.0903	0.0235	0.8795	0.9075
Stackex_cs	0.9989	194.59	0.1898	0.0296	0.8288	0.8059
Stackex_philosophy	1.0000	139.04	0.0888	0.0216	0.6900	0.9119
tmc2007-500	0.2818	3.07	0.0657	0.7785	0.9267	0.9449
tox21_CDK_ECFP4	0.5171	4.30	0.0659	0.5862	0.6477	0.7270
tox21_RDKit_desc	0.5171	4.28	0.0762	0.5863	0.6568	0.7299
VirusGO	0.0952	0.71	0.0635	0.9050	0.7609	0.9418
VirusPseAAC	0.4762	1.00	0.0000	0.7040	0.6284	0.8510
Water-quality	0.4811	10.58	0.3202	0.5906	0.3585	0.6018
Yahoo_Arts	0.5113	5.20	0.3302	0.5818	0.7127	0.8450
Yahoo_Business	0.1319	2.25	0.1561	0.8749	0.6759	0.9525
Yahoo_Computers	0.4161	3.86	0.3629	0.6666	0.6361	0.8930
Yahoo_Education	0.5312	4.07	0.3034	0.6003	0.5254	0.8890
Yahoo_Entertainment	0.3912	2.64	0.0738	0.6973	0.7578	0.9016
Yahoo_Health	0.4452	3.53	0.2962	0.6556	0.5420	0.9249
Yahoo_Recreation	0.5214	3.93	0.3777	0.5948	0.7817	0.8508
Yahoo_Reference	0.4857	3.29	0.1071	0.6220	0.5168	0.9086
Yahoo_Science	0.6268	10.81	0.4517	0.4692	0.6512	0.7572
Yahoo_Social	0.3556	4.66	0.2023	0.7172	0.5634	0.8596
yeast	0.2603	6.17	0.2259	0.7501	0.7291	0.8418
Yelp	0.0957	1.14	0.1369	0.9227	0.8720	0.8948

Table 72: Detailed results for LP(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4419	3.98	0.3387	0.6373	0.9718	0.9732
3s-bbc1000	0.7778	2.83	0.6273	0.4439	0.7077	0.7181
3s-guardian1000	0.7742	2.81	0.5081	0.4449	0.6927	0.7080
3s-reuters1000	0.8000	2.37	0.6833	0.4506	0.7612	0.7441
bibtex	0.8986	98.49	0.8923	0.1165	0.9190	0.9171
birds	0.5641	6.67	0.3544	0.5079	0.7670	0.8603
bookmarks	0.9158	126.96	0.8956	0.1012	0.9510	0.9441
CAL500	0.8235	168.04	0.2883	0.1628	0.8327	0.6957
corel16k001	0.9927	116.28	0.9659	0.0345	0.9317	0.9136
Corel5k	0.9640	294.62	0.8084	0.0704	0.6461	0.7064
delicious	0.9975	913.43	0.6470	0.0229	0.9810	0.9901
emotions	0.4000	2.27	0.3208	0.7231	0.8159	0.8210
enron	0.5731	29.09	0.6275	0.3807	0.6329	0.7327
EukaryoteGO	0.1959	1.69	0.1151	0.8464	0.9918	0.9943
EukaryotePseAAC	0.7220	7.39	0.5723	0.3854	0.9174	0.9316
Eurlex-dc	0.8738	146.90	0.8741	0.1367	0.7500	0.9794
Eurlex-sm	0.7204	106.29	0.7278	0.2235	0.7774	0.8362
foodtruck	0.2439	3.20	0.3140	0.7593	0.6703	0.8260
genbase	0.0000	0.49	0.0075	0.9932	0.6667	1.0000
GnegativeGO	0.0214	0.11	0.0179	0.9833	0.8744	0.9995
GnegativePseAAC	0.4643	1.31	0.3375	0.6957	0.8101	0.9484
GpositivePseAAC	0.4423	0.90	0.2692	0.7179	0.9067	0.9088
HumanGO	0.2444	1.58	0.1586	0.8096	0.9786	0.9850
HumanPseAAC	0.6817	4.82	0.5069	0.4515	0.8614	0.8821
Image	0.4250	1.27	0.2517	0.7157	0.8674	0.8686
IMDB-ECC-F	0.7113	11.30	0.5251	0.3709	0.8402	0.8697
IMDB-F	0.7089	11.54	0.5211	0.3732	0.8353	0.8672
LLOG-F	0.9508	40.27	0.9218	0.0807	0.5002	0.8200
mediamill	0.9900	86.50	0.9356	0.0538	0.8599	0.7971
medical	0.5408	15.87	0.5408	0.4897	0.4522	0.8361
Music	0.4000	2.33	0.3690	0.7214	0.8253	0.8254
OHSUMED-F	0.6188	9.43	0.4875	0.4336	0.8502	0.8710
PlantGO	0.2292	0.86	0.1094	0.8522	0.9837	0.9860
PlantPseAAC	0.6939	3.44	0.5459	0.4630	0.8783	0.8846
rcv1subset1	0.9733	78.19	0.9238	0.0768	0.7805	0.7569
REUTERS-K500-EX2	0.8711	60.33	0.8507	0.1589	0.7166	0.9294
scene	0.4025	1.45	0.2873	0.7050	0.9227	0.9252
sider_CDK_ECFP4	0.1690	19.93	0.2022	0.8002	0.5680	0.7749
sider_MordredDesc	0.1972	20.19	0.1923	0.7926	0.5529	0.7723
sider_RDKit_desc	0.1620	19.89	0.1627	0.8261	0.5935	0.7960
SLASHDOT-F	0.5344	7.06	0.4308	0.5210	0.7178	0.9520
Stackex_chemistry	0.9582	110.86	0.9047	0.0490	0.8750	0.9478
Stackex_chess	0.9881	157.60	0.9543	0.0236	0.5237	0.9490
Stackex_coffee	0.9130	77.96	0.9710	0.0704	0.2519	0.9445
Stackex_cooking	0.9903	267.37	0.9822	0.0198	0.9063	0.9581
Stackex_cs	0.9827	192.81	0.9135	0.0420	0.8545	0.8724
Stackex_philosophy	0.9899	153.77	0.9654	0.0225	0.7170	0.9649
tmc2007-500	0.3888	6.16	0.2717	0.6402	0.8969	0.9265
tox21_CDK_ECFP4	0.5479	5.42	0.3818	0.5330	0.7470	0.7753
tox21_RDKit_desc	0.5445	5.30	0.3742	0.5263	0.7531	0.7836
VirusGO	0.0952	0.67	0.1111	0.9127	0.8228	0.9913
VirusPseAAC	0.5238	1.71	0.3690	0.6230	0.6067	0.8172
Water-quality	0.3679	9.64	0.4044	0.6301	0.6418	0.6858
Yahoo_Arts	0.6862	10.64	0.5291	0.4053	0.8338	0.8880
Yahoo_Business	0.1230	3.44	0.1708	0.8591	0.8336	0.9859
Yahoo_Computers	0.4811	6.84	0.4472	0.5700	0.8315	0.9449
Yahoo_Education	0.6625	8.50	0.5206	0.4546	0.7597	0.9269
Yahoo_Entertainment	0.5114	4.40	0.4175	0.5748	0.9236	0.9354
Yahoo_Health	0.3757	5.96	0.3470	0.6621	0.8024	0.9697
Yahoo_Recreation	0.5869	6.45	0.4652	0.5142	0.9060	0.9141
Yahoo_Reference	0.5031	5.48	0.3926	0.5796	0.7617	0.9621
Yahoo_Science	0.7434	15.74	0.6534	0.3357	0.8278	0.8548
Yahoo_Social	0.3993	7.34	0.3787	0.6309	0.7993	0.9429
yeast	0.3636	7.19	0.3620	0.6747	0.6909	0.7994
Yelp	0.1336	1.30	0.1717	0.8919	0.8687	0.8911

Table 73: Detailed results for LP(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3060	1.55	0.1046	0.7834	0.9692	0.9715
3s-bbc1000	0.6389	1.92	0.6111	0.5731	0.7218	0.7018
3s-guardian1000	0.5806	2.03	0.4758	0.5903	0.5440	0.6558
3s-reuters1000	0.9000	1.90	0.8000	0.4378	0.6871	0.6478
bibtex	0.8757	96.81	0.8271	0.1414	0.8830	0.8647
birds	0.5128	5.79	0.2273	0.5711	0.7290	0.8272
bookmarks	0.7457	60.09	0.1611	0.2861	0.7735	0.8069
CAL500	0.8235	167.35	0.2630	0.1627	0.8179	0.6917
corel16k001	0.9949	113.03	0.8944	0.0319	0.8920	0.8431
Corel5k	0.9540	313.74	0.7088	0.0466	0.6450	0.6266
delicious	0.9975	913.26	0.6386	0.0229	0.9810	0.9898
emotions	0.2667	1.88	0.1819	0.7904	0.8143	0.8326
enron	0.5614	29.54	0.5865	0.3662	0.5832	0.6647
EukaryoteGO	0.2023	0.87	0.0351	0.8720	0.9852	0.9916
EukaryotePseAAC	0.6474	3.89	0.1617	0.5279	0.8407	0.8971
Eurlex-dc	0.6172	43.76	0.1572	0.4381	0.6500	0.9157
Eurlex-sm	0.4786	25.82	0.4224	0.5104	0.7154	0.9302
foodtruck	0.1951	3.29	0.2810	0.8103	0.6586	0.8281
genbase	0.0000	0.22	0.0000	0.9975	0.6667	1.0000
GnegativeGO	0.0214	0.10	0.0143	0.9857	0.8741	0.9991
GnegativePseAAC	0.3929	1.14	0.2482	0.7363	0.7392	0.9030
GpositivePseAAC	0.3846	0.69	0.2308	0.7644	0.8206	0.8384
HumanGO	0.1961	0.92	0.0622	0.8661	0.9633	0.9779
HumanPseAAC	0.6688	3.06	0.1528	0.5168	0.7442	0.8259
Image	0.3650	1.05	0.1354	0.7610	0.8045	0.8078
IMDB-ECC-F	0.6399	7.40	0.1784	0.4710	0.6398	0.8109
IMDB-F	0.6358	7.51	0.1936	0.4767	0.6492	0.8125
LLOG-F	0.8607	36.86	0.7758	0.1690	0.4907	0.7558
mediamill	0.1501	17.09	0.0245	0.7015	0.8029	0.9447
medical	0.4592	14.36	0.4830	0.5427	0.4708	0.8346
Music	0.3333	2.33	0.2444	0.7391	0.7666	0.7889
OHSUMED-F	0.3877	4.78	0.1623	0.6613	0.8624	0.8990
PlantGO	0.2292	0.64	0.0365	0.8621	0.9762	0.9785
PlantPseAAC	0.8163	3.65	0.3427	0.4002	0.6722	0.7230
rcv1subset1	0.6500	27.69	0.1923	0.3504	0.7418	0.8526
REUTERS-K500-EX2	0.8522	58.43	0.7881	0.1837	0.6992	0.8887
scene	0.3320	0.71	0.1317	0.7985	0.9052	0.9166
sider_CDK_ECFP4	0.1127	18.94	0.1182	0.8399	0.5731	0.7998
sider_MordredDesc	0.0915	19.30	0.1186	0.8462	0.5673	0.7992
sider_RDKit_desc	0.0845	19.33	0.1231	0.8454	0.5692	0.7966
SLASHDOT-F	0.4206	3.03	0.1177	0.6744	0.6912	0.9330
Stackex_chemistry	0.9496	107.52	0.7673	0.0539	0.8541	0.9185
Stackex_chess	0.9821	151.64	0.9600	0.0306	0.5188	0.9267
Stackex_coffee	0.9565	73.04	0.9855	0.0544	0.2334	0.8538
Stackex_cooking	0.9894	272.07	0.9726	0.0194	0.8921	0.9326
Stackex_cs	0.9751	193.78	0.8513	0.0391	0.8396	0.8339
Stackex_philosophy	0.9874	150.82	0.9485	0.0251	0.6924	0.9395
tmc2007-500	0.2843	3.50	0.0971	0.7636	0.9139	0.9433
tox21_CDK_ECFP4	0.5274	4.51	0.1846	0.5742	0.6788	0.7390
tox21_RDKit_desc	0.5308	4.48	0.1915	0.5748	0.6959	0.7533
VirusGO	0.0952	0.48	0.0556	0.9341	0.8138	0.9798
VirusPseAAC	0.2857	0.67	0.0476	0.8286	0.6644	0.9038
Water-quality	0.2830	8.97	0.2704	0.6896	0.6740	0.7182
Yahoo_Arts	0.6395	5.71	0.3764	0.4991	0.6907	0.8272
Yahoo_Business	0.1319	2.23	0.1516	0.8788	0.6668	0.9472
Yahoo_Computers	0.4530	4.23	0.4012	0.6295	0.6434	0.8850
Yahoo_Education	0.6359	4.01	0.2680	0.5260	0.6457	0.9020
Yahoo_Entertainment	0.5727	3.44	0.0928	0.5812	0.7055	0.8644
Yahoo_Health	0.4886	3.58	0.3086	0.6416	0.5948	0.9251
Yahoo_Recreation	0.6383	4.67	0.4912	0.5095	0.8179	0.8115
Yahoo_Reference	0.4832	3.37	0.1255	0.6202	0.6343	0.9120
Yahoo_Science	0.7030	7.29	0.1402	0.4409	0.7177	0.8430
Yahoo_Social	0.4101	3.75	0.1665	0.6794	0.6754	0.9113
yeast	0.3306	6.90	0.2904	0.7039	0.6266	0.7925
Yelp	0.1047	1.19	0.1153	0.9176	0.8775	0.9138

Table 74: Detailed results for ELP(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3128	1.46	0.0948	0.7824	0.9681	0.9704
3s-bbc1000	0.4722	1.61	0.4236	0.6764	0.7552	0.7684
3s-guardian1000	0.4839	1.45	0.3306	0.6817	0.6647	0.7767
3s-reuters1000	0.7667	1.57	0.6500	0.5317	0.7731	0.7059
bibtex	0.8486	94.17	0.7518	0.1571	0.9520	0.8807
birds	0.4615	6.10	0.2279	0.5717	0.6959	0.8065
bookmarks	0.8986	126.07	0.8264	0.1170	0.9559	0.9211
CAL500	0.9412	151.57	0.8566	0.2179	0.7827	0.8625
corel16k001	0.9840	119.71	0.8424	0.0444	0.9106	0.8417
Corel5k	0.9440	170.37	0.6063	0.0711	0.6394	0.9298
delicious	0.9956	923.03	0.9922	0.0217	0.9807	0.9772
emotions	0.2500	1.77	0.1472	0.8090	0.8294	0.8463
enron	0.5789	29.68	0.2269	0.3989	0.6388	0.7273
EukaryoteGO	0.1905	0.72	0.0267	0.8844	0.9882	0.9936
EukaryotePseAAC	0.5766	2.67	0.0539	0.6018	0.8322	0.9120
Eurlex-dc	0.8624	139.27	0.8158	0.1563	0.7550	0.9796
Eurlex-sm	0.6455	74.44	0.6465	0.2811	0.7964	0.9121
foodtruck	0.2439	3.05	0.3039	0.7666	0.6602	0.8175
genbase	0.0000	0.22	0.0000	0.9975	0.6667	1.0000
GnegativeGO	0.0214	0.11	0.0143	0.9845	0.8740	0.9991
GnegativePseAAC	0.4571	1.14	0.2464	0.7099	0.7400	0.9004
GpositivePseAAC	0.3654	0.69	0.1923	0.7724	0.8039	0.8248
HumanGO	0.2026	0.94	0.0651	0.8661	0.9639	0.9783
HumanPseAAC	0.6688	2.95	0.1454	0.5170	0.7242	0.8217
Image	0.3750	1.00	0.1279	0.7652	0.8008	0.8030
IMDB-ECC-F	0.6452	8.57	0.2540	0.4606	0.7306	0.8208
IMDB-F	0.6397	8.74	0.2531	0.4640	0.7300	0.8226
LLOG-F	0.9098	36.52	0.5263	0.1730	0.4931	0.7407
mediamill	0.7328	78.44	0.7113	0.1745	0.8786	0.7753
medical	0.3673	16.26	0.3333	0.6126	0.5256	0.8817
Music	0.3000	2.23	0.2000	0.7475	0.7777	0.7952
OHSUMED-F	0.3869	4.61	0.1568	0.6614	0.8494	0.8918
PlantGO	0.2083	0.84	0.0625	0.8574	0.9757	0.9786
PlantPseAAC	0.7755	3.80	0.3835	0.4190	0.6263	0.6963
rcv1subset1	0.9117	63.41	0.6610	0.0861	0.8359	0.7819
REUTERS-K500-EX2	0.8814	59.67	0.7149	0.1737	0.7234	0.8905
scene	0.3320	0.72	0.1618	0.7967	0.9017	0.9135
sider_CDK_ECFP4	0.0845	18.82	0.1065	0.8496	0.5810	0.8070
sider_MordredDesc	0.0704	19.17	0.1149	0.8532	0.5765	0.8001
sider_RDKit_desc	0.0775	19.16	0.1230	0.8461	0.5796	0.7993
SLASHDOT-F	0.3915	3.16	0.1168	0.6904	0.6832	0.9261
Stackex_chemistry	0.9798	113.91	0.9171	0.0459	0.8583	0.8857
Stackex_chess	0.9940	156.90	0.9301	0.0285	0.5251	0.9180
Stackex_coffee	0.9130	81.70	0.8478	0.0849	0.2562	0.8512
Stackex_cooking	0.9700	259.57	0.9305	0.0388	0.9054	0.9625
Stackex_cs	0.9372	179.25	0.8220	0.0642	0.8517	0.9060
Stackex_philosophy	0.9874	153.59	0.9428	0.0343	0.7217	0.9391
tmc2007-500	0.2734	3.30	0.0880	0.7718	0.9129	0.9431
tox21_CDK_ECFP4	0.5205	4.51	0.1535	0.5829	0.6697	0.7394
tox21_RDKit_desc	0.5411	4.57	0.1609	0.5681	0.6817	0.7477
VirusGO	0.0476	0.38	0.0476	0.9563	0.8168	0.9818
VirusPseAAC	0.4286	1.05	0.0476	0.7254	0.6529	0.8827
Water-quality	0.3208	8.89	0.2565	0.6913	0.6702	0.7220
Yahoo_Arts	0.5621	6.04	0.3445	0.5507	0.7510	0.8474
Yahoo_Business	0.1007	2.28	0.1226	0.8991	0.7791	0.9716
Yahoo_Computers	0.3920	4.45	0.3470	0.6755	0.7544	0.9112
Yahoo_Education	0.5661	4.91	0.3151	0.5678	0.7223	0.9025
Yahoo_Entertainment	0.4218	2.95	0.1298	0.6728	0.8691	0.9068
Yahoo_Health	0.3094	3.54	0.1909	0.7518	0.7617	0.9539
Yahoo_Recreation	0.4949	4.18	0.3927	0.6112	0.8278	0.8636
Yahoo_Reference	0.4047	3.05	0.1379	0.6887	0.7160	0.9433
Yahoo_Science	0.6236	9.52	0.2063	0.4842	0.7238	0.8211
Yahoo_Social	0.3210	4.51	0.1052	0.7397	0.7886	0.9296
yeast	0.2231	6.12	0.2279	0.7643	0.7280	0.8494
Yelp	0.0877	1.14	0.1061	0.9256	0.8840	0.9210

Table 75: Detailed results for PS(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3269	1.46	0.0855	0.7733	0.5887	0.5952
3s-bbc1000	0.6944	2.56	0.6204	0.5092	0.5353	0.5331
3s-guardian1000	0.6129	2.13	0.5484	0.5688	0.5041	0.5247
3s-reuters1000	0.8667	2.23	0.8333	0.4250	0.4904	0.5255
bibtex	0.8595	89.38	0.4778	0.1592	0.9007	0.8518
birds	0.8974	9.56	0.9359	0.2756	0.8902	0.9956
bookmarks	0.9143	119.91	0.3487	0.1028	0.9282	0.8926
CAL500	0.8235	167.65	0.2546	0.1617	0.8908	0.6870
corel16k001	0.9964	110.07	0.1762	0.0348	0.8859	0.8270
Corel5k	0.9880	318.28	0.5829	0.0255	0.6360	0.5890
delicious	0.9975	906.21	0.1903	0.0242	0.9758	0.9853
emotions	0.2833	1.72	0.1792	0.7878	0.7313	0.7408
enron	0.5906	29.75	0.4811	0.4143	0.6167	0.6850
EukaryoteGO	0.3282	2.10	0.0153	0.7586	0.6915	0.8452
EukaryotePseAAC	0.7825	5.65	0.3323	0.3997	0.7803	0.8101
Eurlex-dc	0.8965	143.28	0.8843	0.1194	0.7377	0.9559
Eurlex-sm	0.8109	104.99	0.6997	0.1299	0.7813	0.8200
foodtruck	0.4146	2.98	0.3427	0.7027	0.5722	0.7288
genbase	0.6418	3.70	0.4295	0.5429	0.5963	0.8534
GnegativeGO	0.1286	0.46	0.0893	0.9104	0.7173	0.8448
GnegativePseAAC	0.1929	0.67	0.0607	0.8570	0.6597	0.8422
GpositivePseAAC	0.2885	0.40	0.0962	0.8381	0.7133	0.7612
HumanGO	0.3376	1.94	0.0796	0.7480	0.6850	0.7765
HumanPseAAC	0.7138	3.27	0.1692	0.4964	0.6525	0.7289
Image	0.2900	0.89	0.0908	0.8066	0.7487	0.7411
IMDB-ECC-F	0.6505	7.41	0.1700	0.4682	0.5178	0.5352
IMDB-F	0.6418	7.70	0.1831	0.4670	0.5168	0.5341
LLOG-F	0.8443	33.05	0.2940	0.2033	0.4299	0.7413
mediamill	0.9905	78.56	1.0000	0.0533	1.0000	1.0000
medical	0.5000	12.34	0.5145	0.4871	0.4492	0.7891
Music	0.2667	2.03	0.1708	0.7931	0.7834	0.7813
OHSUMED-F	0.4250	4.49	0.1585	0.6374	0.5744	0.5769
PlantGO	0.6224	2.50	0.1726	0.5657	0.6170	0.7146
PlantPseAAC	0.6531	2.63	0.2398	0.5400	0.6210	0.6926
rcv1subset1	0.9750	75.65	1.0000	0.0861	0.9309	0.9325
REUTERS-K500-EX2	0.9083	50.61	0.6927	0.1603	0.6669	0.8178
scene	0.2158	0.50	0.0851	0.8680	0.8586	0.8584
sider_CDK_ECFP4	0.1338	19.11	0.1268	0.8291	0.4072	0.5272
sider_MordredDesc	0.5915	24.94	1.0000	0.5511	1.0000	1.0000
sider_RDKit_desc	0.0915	19.25	0.1226	0.8430	0.4226	0.6126
SLASHDOT-F	0.4301	2.79	0.0099	0.6690	0.4363	0.7339
Stackex_chemistry	0.9899	105.14	0.1917	0.0380	0.8373	0.8633
Stackex_chess	0.9940	145.87	0.1097	0.0286	0.5182	0.8934
Stackex_coffee	1.0000	67.00	0.9728	0.0593	0.2413	0.8490
Stackex_cooking	0.9952	265.92	0.0889	0.0247	0.8843	0.9099
Stackex_cs	0.9968	194.57	0.1901	0.0303	0.8485	0.8063
Stackex_philosophy	0.9975	138.84	0.0835	0.0225	0.7117	0.9144
tmc2007-500	0.2294	2.64	0.0508	0.8114	0.6165	0.6777
tox21_CDK_ECFP4	0.5274	4.42	0.1419	0.5865	0.5420	0.5762
tox21_RDKit_desc	0.5171	4.34	0.1345	0.5879	0.5825	0.6346
VirusGO	0.2857	0.95	0.0476	0.8003	0.5107	0.7715
VirusPseAAC	0.2857	0.86	0.0000	0.7968	0.5759	0.8024
Water-quality	0.3302	9.47	0.2607	0.6483	0.5096	0.5609
Yahoo_Arts	0.6956	8.48	0.5370	0.4258	0.7516	0.8049
Yahoo_Business	0.1266	3.26	0.1836	0.8655	0.7167	0.9051
Yahoo_Computers	0.4699	6.62	0.5332	0.5701	0.7898	0.9031
Yahoo_Education	0.6725	6.46	0.5812	0.4761	0.7260	0.8669
Yahoo_Entertainment	0.7125	4.75	0.4186	0.4511	0.7806	0.8020
Yahoo_Health	0.5223	5.58	0.4486	0.5954	0.6954	0.8825
Yahoo_Recreation	0.7030	6.55	0.6254	0.4355	0.7177	0.7492
Yahoo_Reference	0.5878	6.08	0.4109	0.5174	0.7048	0.9110
Yahoo_Science	0.8476	14.20	0.5828	0.2884	0.8844	0.9099
Yahoo_Social	0.5685	8.32	0.4346	0.5190	0.8787	0.9617
yeast	0.2603	6.66	0.2990	0.7034	0.5392	0.7417
Yelp	0.2173	1.40	0.1749	0.8486	0.4694	0.4791

Table 76: Detailed results for PS(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3584	0.58	0.0250	0.8889	0.6425	0.6441
3s-bbc1000	0.7500	2.72	0.8056	0.4361	0.6054	0.5765
3s-guardian1000	0.5806	1.97	0.5323	0.5796	0.5810	0.6522
3s-reuters1000	0.9000	2.87	0.8250	0.3592	0.4706	0.4449
bibtex	0.9230	87.66	0.4878	0.2932	0.7261	0.6900
birds	0.5897	6.72	0.2287	0.4791	0.6805	0.7598
bookmarks	0.9299	98.30	0.6354	0.4352	0.6043	0.5861
CAL500	0.8235	167.67	0.2543	0.1617	0.7795	0.6861
corel16k001	0.9964	89.48	0.1449	0.5667	0.5874	0.5460
Corel5k	0.9800	318.43	0.6200	0.0296	0.6378	0.6047
delicious	0.9975	906.34	0.1897	0.0241	0.9783	0.9851
emotions	0.2000	1.58	0.1208	0.8425	0.8675	0.8866
enron	0.5965	28.23	0.5819	0.8858	0.3688	0.4025
EukaryoteGO	0.1997	0.47	0.0019	0.8871	0.9895	0.9921
EukaryotePseAAC	0.5521	2.62	0.0232	0.6055	0.7133	0.9005
Eurlex-dc	0.9741	155.50	0.8135	0.1710	0.5891	0.7114
Eurlex-sm	0.7623	93.61	0.4202	0.6145	0.4493	0.4465
foodtruck	0.2439	3.37	0.3565	0.7513	0.3950	0.7507
genbase	0.0000	0.99	0.0224	0.9800	0.6437	0.9749
GnegativeGO	0.0286	0.09	0.0071	0.9839	0.8675	0.9959
GnegativePseAAC	0.2571	0.63	0.1250	0.8385	0.7740	0.9506
GpositivePseAAC	0.2308	0.40	0.1346	0.8590	0.9327	0.9264
HumanGO	0.1736	0.51	0.0178	0.8996	0.9707	0.9808
HumanPseAAC	0.6174	2.46	0.0568	0.5650	0.7062	0.8429
Image	0.3650	0.94	0.0733	0.7748	0.8266	0.8160
IMDB-ECC-F	0.6381	7.94	0.2155	0.4588	0.6145	0.8014
IMDB-F	0.6493	8.86	0.2485	0.4537	0.5973	0.7698
LLOG-F	0.9590	41.06	0.4850	0.0764	0.4577	0.6241
mediamill	0.9929	85.45	0.3023	0.0593	0.8071	0.7239
medical	0.5000	10.17	0.4592	0.5219	0.4197	0.7315
Music	0.6833	3.42	0.3407	0.5157	0.8688	0.5554
OHSUMED-F	0.5987	5.69	0.2670	0.5362	0.7599	0.7792
PlantGO	0.3958	1.81	0.0972	0.7132	0.8484	0.7811
PlantPseAAC	0.6327	2.22	0.1607	0.5721	0.7639	0.8418
rcv1subset1	0.9867	56.24	0.6007	0.4752	0.5116	0.4526
REUTERS-K500-EX2	0.8986	35.65	0.5262	0.5510	0.3231	0.4005
scene	0.1784	0.35	0.0705	0.8988	0.9606	0.9674
sider_CDK_ECFP4	0.1690	20.25	0.1797	0.7966	0.5265	0.7114
sider_MordredDesc	0.2394	20.17	0.2079	0.7694	0.5261	0.6943
sider_RDKit_desc	0.1056	19.20	0.1100	0.8456	0.5309	0.7974
SLASHDOT-F	0.9497	6.98	0.4528	0.3659	0.3552	0.4606
Stackex_chemistry	0.9726	84.73	0.1366	0.4307	0.5318	0.5729
Stackex_chess	1.0000	150.05	0.1240	0.0236	0.5130	0.8855
Stackex_coffee	1.0000	66.91	0.9728	0.0593	0.2344	0.8523
Stackex_cooking	0.9971	224.95	0.0775	0.3670	0.6274	0.6559
Stackex_cs	0.9989	167.20	0.1671	0.4050	0.5995	0.5921
Stackex_philosophy	0.9899	101.92	0.2303	0.6235	0.3746	0.4985
tmc2007-500	0.4392	2.88	0.0660	0.9744	0.6338	0.6483
tox21_CDK_ECFP4	0.5925	4.66	0.2724	0.5397	0.6279	0.7152
tox21_RDKit_desc	0.5856	3.55	0.0568	0.8455	0.5019	0.5249
VirusGO	0.5238	1.67	0.5159	0.6177	0.6389	0.6444
VirusPseAAC	0.7143	1.33	0.0238	0.5730	0.5516	0.7598
Water-quality	0.3679	9.88	0.2685	0.6446	0.6109	0.6125
Yahoo_Arts	0.6569	7.19	0.2302	0.4524	0.7223	0.7881
Yahoo_Business	0.1319	2.36	0.0422	0.9673	0.3702	0.6763
Yahoo_Computers	0.4185	3.18	0.0633	0.7918	0.5022	0.6644
Yahoo_Education	0.9443	11.51	0.1887	0.7344	0.1194	0.0849
Yahoo_Entertainment	0.7824	8.09	0.2096	0.2820	0.5556	0.6762
Yahoo_Health	0.6927	4.28	0.2971	0.6507	0.3183	0.6637
Yahoo_Recreation	0.9065	8.28	0.7768	0.2223	0.7980	0.6866
Yahoo_Reference	0.4956	5.66	0.2814	0.5466	0.5827	0.8461
Yahoo_Science	0.9285	17.71	0.7217	0.1660	0.5594	0.5905
Yahoo_Social	0.4794	3.72	0.0737	0.8426	0.3535	0.5499
yeast	0.5165	7.99	0.3717	0.6003	0.6384	0.6227
Yelp	0.1067	1.16	0.1589	0.9157	0.8773	0.8882

Table 77: Detailed results for PS(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6950	4.97	0.0528	0.4437	0.9413	0.8113
3s-bbc1000	0.8056	2.56	0.6898	0.4566	0.7225	0.6108
3s-guardian1000	0.5806	2.06	0.4839	0.5930	0.6997	0.6755
3s-reuters1000	0.7667	2.70	0.6583	0.4378	0.6103	0.5541
bibtex	0.9014	97.72	0.7018	0.1215	0.8941	0.8427
birds	0.6154	6.46	0.4652	0.5143	0.7987	0.9059
bookmarks	0.9207	122.47	0.4017	0.0987	0.9013	0.8697
CAL500	0.8235	167.98	0.8751	0.1675	0.8129	0.7035
corel16k001	0.9964	110.31	0.2730	0.0344	0.9492	0.8283
Corel5k	0.9820	316.74	0.5865	0.0293	0.6534	0.6022
delicious	0.9975	908.01	0.3037	0.0239	0.9820	0.9863
emotions	0.3667	2.25	0.3222	0.7210	0.8325	0.8358
enron	0.5205	29.99	0.6279	0.3944	0.6027	0.6784
EukaryoteGO	0.2062	1.15	0.0638	0.8619	0.9599	0.9860
EukaryotePseAAC	0.6885	5.44	0.3493	0.4670	0.8393	0.8897
Eurlex-dc	0.8784	142.44	0.7521	0.1361	0.7309	0.9385
Eurlex-sm	0.7333	112.91	0.5321	0.2023	0.7522	0.7615
foodtruck	0.2927	2.93	0.3499	0.7559	0.7352	0.8553
genbase	0.0000	0.49	0.0075	0.9932	0.6667	0.9999
GnegativeGO	0.0214	0.11	0.0179	0.9833	0.8740	0.9993
GnegativePseAAC	0.4357	1.26	0.3232	0.7160	0.8058	0.9469
GpositivePseAAC	0.4423	0.90	0.2692	0.7179	0.9033	0.9050
HumanGO	0.2283	1.28	0.1120	0.8306	0.9579	0.9755
HumanPseAAC	0.7106	4.93	0.5305	0.4296	0.8456	0.8686
Image	0.3900	1.25	0.2279	0.7321	0.8424	0.8467
IMDB-ECC-F	0.6356	7.54	0.1827	0.4749	0.7568	0.8128
IMDB-F	0.6174	7.66	0.2004	0.4826	0.7435	0.8140
LLOG-F	0.9590	40.52	0.9501	0.0861	0.4839	0.8101
mediamill	0.9895	86.69	0.7913	0.0570	0.8360	0.7362
medical	0.5306	12.42	0.5357	0.5029	0.4568	0.8108
Music	0.4167	2.47	0.3704	0.7050	0.8181	0.8157
OHSUMED-F	0.5384	6.62	0.1886	0.5090	0.8153	0.8076
PlantGO	0.2500	0.65	0.0573	0.8528	0.9817	0.9828
PlantPseAAC	0.7347	3.61	0.5204	0.4444	0.8515	0.8673
rcv1subset1	0.9600	70.20	0.6623	0.0745	0.7429	0.6794
REUTERS-K500-EX2	0.8729	54.05	0.8257	0.1605	0.6521	0.8356
scene	0.3942	1.18	0.2241	0.7319	0.9020	0.9074
sider_CDK_ECFP4	0.1479	20.81	0.2638	0.8000	0.5908	0.7725
sider_MordredDesc	0.1620	22.24	0.4288	0.7514	0.6513	0.7952
sider_RDKit_desc	0.1831	22.20	0.3885	0.7578	0.6450	0.7823
SLASHDOT-F	0.6349	4.22	0.0727	0.5147	0.6615	0.8463
Stackex_chemistry	0.9582	103.85	0.4174	0.0528	0.8491	0.8840
Stackex_chess	0.9940	147.29	0.8067	0.0290	0.5233	0.9223
Stackex_coffee	1.0000	76.78	1.0000	0.0379	0.2505	0.8932
Stackex_cooking	0.9952	266.29	0.3475	0.0223	0.8908	0.9124
Stackex_cs	0.9946	194.39	0.6354	0.0323	0.8459	0.8157
Stackex_philosophy	0.9925	139.46	0.4195	0.0246	0.6993	0.9245
tmc2007-500	0.3503	4.62	0.1359	0.6864	0.8162	0.8959
tox21_CDK_ECFP4	0.5890	4.94	0.2238	0.5367	0.6743	0.7385
tox21_RDKit_desc	0.5616	5.21	0.3482	0.5341	0.7152	0.7557
VirusGO	0.0952	0.76	0.1349	0.9063	0.8243	0.9937
VirusPseAAC	0.4286	1.14	0.2024	0.7286	0.6789	0.8767
Water-quality	0.3302	9.53	0.4112	0.6353	0.6851	0.7187
Yahoo_Arts	0.6328	6.82	0.3760	0.4955	0.6660	0.8073
Yahoo_Business	0.1159	2.60	0.1316	0.8808	0.6129	0.9346
Yahoo_Computers	0.4386	4.86	0.3615	0.6328	0.6227	0.8695
Yahoo_Education	0.5952	5.20	0.3723	0.5409	0.5907	0.8751
Yahoo_Entertainment	0.5522	3.41	0.1067	0.5882	0.8446	0.8731
Yahoo_Health	0.3529	3.67	0.2672	0.7057	0.6831	0.9271
Yahoo_Recreation	0.5830	4.59	0.4833	0.5473	0.8164	0.8345
Yahoo_Reference	0.4682	4.09	0.1848	0.6202	0.6321	0.9050
Yahoo_Science	0.6952	12.33	0.5252	0.3975	0.6386	0.7511
Yahoo_Social	0.3589	5.55	0.2209	0.7000	0.5871	0.8397
yeast	0.3595	6.88	0.3603	0.6929	0.6807	0.7980
Yelp	0.2622	1.47	0.2518	0.8244	0.7693	0.8240

Table 78: Detailed results for PS(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6859	4.95	0.0542	0.4227	0.9601	0.8137
3s-bbc1000	0.6667	2.00	0.5972	0.5461	0.7127	0.7054
3s-guardian1000	0.5161	1.94	0.4032	0.6167	0.6137	0.6997
3s-reuters1000	0.8667	1.90	0.8333	0.4489	0.6894	0.6318
bibtex	0.8676	96.21	0.8124	0.1440	0.8787	0.8632
birds	0.4872	5.38	0.1757	0.5801	0.7506	0.8474
bookmarks	0.9393	128.13	0.9395	0.0834	0.9992	0.9851
CAL500	0.8235	167.27	0.2564	0.1629	0.8139	0.6920
corel16k001	0.9935	118.15	0.9789	0.0347	0.9873	0.9814
Corel5k	0.9720	316.79	0.6912	0.0380	0.6441	0.6145
delicious	0.9975	919.40	0.9951	0.0221	0.9936	0.9987
emotions	0.3000	1.92	0.1722	0.7818	0.8237	0.8385
enron	0.5146	29.94	0.5883	0.3804	0.5915	0.6708
EukaryoteGO	0.1943	0.85	0.0337	0.8769	0.9855	0.9915
EukaryotePseAAC	0.6461	3.74	0.1377	0.5297	0.8151	0.8905
Eurlex-dc	0.9953	141.17	0.9974	0.0640	0.7591	0.9972
Eurlex-sm	0.7742	77.98	0.9937	0.1607	0.8292	0.9914
foodtruck	0.2683	3.24	0.3095	0.7495	0.6335	0.8023
genbase	0.0000	0.49	0.0075	0.9932	0.6667	0.9999
GnegativeGO	0.0143	0.09	0.0071	0.9893	0.8741	0.9990
GnegativePseAAC	0.4214	1.09	0.2286	0.7253	0.7446	0.9047
GpositivePseAAC	0.3654	0.65	0.2308	0.7756	0.8170	0.8353
HumanGO	0.1929	0.86	0.0563	0.8704	0.9599	0.9771
HumanPseAAC	0.6624	3.01	0.1351	0.5191	0.7086	0.8184
Image	0.3850	1.06	0.1279	0.7502	0.8068	0.8109
IMDB-ECC-F	0.6113	7.53	0.1584	0.4822	0.7582	0.8283
IMDB-F	0.5999	7.69	0.1848	0.4997	0.7236	0.8057
LLOG-F	0.8934	37.75	0.7245	0.1453	0.4591	0.7176
mediamill	0.9905	81.61	0.9811	0.0524	0.9991	0.9602
medical	0.4694	14.50	0.4881	0.5398	0.4553	0.8163
Music	0.2667	2.13	0.1898	0.7772	0.7919	0.8103
OHSUMED-F	0.5250	6.60	0.1728	0.4840	0.8284	0.7926
PlantGO	0.2347	0.63	0.0357	0.8559	0.9766	0.9775
PlantPseAAC	0.7959	3.65	0.3350	0.4183	0.6490	0.7073
rcv1subset1	0.9386	70.21	0.6736	0.0506	0.7543	0.6865
REUTERS-K500-EX2	0.8433	55.97	0.7707	0.1914	0.6879	0.8841
scene	0.3195	0.68	0.1276	0.8088	0.8999	0.9127
sider_CDK_ECFP4	0.1549	20.37	0.2517	0.8029	0.6152	0.7772
sider_MordredDesc	0.1197	20.35	0.2203	0.8087	0.5525	0.7608
sider_RDKit_desc	0.0986	20.04	0.2080	0.8186	0.5612	0.7703
SLASHDOT-F	0.4248	3.24	0.1086	0.6755	0.6861	0.9279
Stackex_chemistry	0.9626	108.46	0.7540	0.0476	0.8460	0.9009
Stackex_chess	0.9881	150.33	0.9511	0.0260	0.5192	0.9265
Stackex_coffee	0.9130	75.26	0.9601	0.0659	0.2364	0.8887
Stackex_cooking	0.9923	273.52	0.9666	0.0181	0.8871	0.9262
Stackex_cs	0.9870	195.08	0.8324	0.0308	0.8388	0.8200
Stackex_philosophy	0.9925	150.38	0.9228	0.0231	0.6920	0.9385
tmc2007-500	0.3645	4.63	0.1378	0.6797	0.8329	0.8745
tox21_CDK_ECFP4	0.5308	4.44	0.1997	0.5780	0.6691	0.7396
tox21_RDKit_desc	0.4966	4.39	0.1456	0.5911	0.7032	0.7589
VirusGO	0.0476	0.43	0.0556	0.9524	0.7983	0.9727
VirusPseAAC	0.4762	1.05	0.0476	0.7095	0.6403	0.8717
Water-quality	0.3113	9.42	0.2714	0.6722	0.6316	0.6874
Yahoo_Arts	0.6379	6.82	0.3658	0.4882	0.6694	0.8278
Yahoo_Business	0.1311	2.60	0.1273	0.8720	0.6260	0.9482
Yahoo_Computers	0.4505	4.86	0.3416	0.6341	0.6263	0.8787
Yahoo_Education	0.6094	5.22	0.3587	0.5207	0.5843	0.8590
Yahoo_Entertainment	0.5369	3.42	0.1219	0.5679	0.8603	0.8892
Yahoo_Health	0.3653	3.68	0.2555	0.7209	0.6690	0.9165
Yahoo_Recreation	0.5734	4.61	0.4838	0.5693	0.8244	0.8559
Yahoo_Reference	0.4573	4.09	0.1730	0.6236	0.6108	0.8948
Yahoo_Science	0.6906	12.34	0.5217	0.3888	0.6239	0.7651
Yahoo_Social	0.3637	5.57	0.2189	0.6866	0.5885	0.8511
yeast	0.2975	6.75	0.2593	0.7109	0.6385	0.8001
Yelp	0.1107	1.15	0.1121	0.9182	0.8806	0.9168

Table 79: Detailed results for PPT(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3285	1.45	0.0850	0.7730	0.5888	0.5954
3s-bbc1000	0.6389	2.44	0.5648	0.5393	0.5341	0.5349
3s-guardian1000	0.5806	2.06	0.5161	0.5876	0.4974	0.5284
3s-reuters1000	0.8333	2.20	0.8000	0.4417	0.4911	0.5253
bibtex	0.8608	89.85	0.6618	0.1577	0.8983	0.8494
birds	0.6923	7.44	0.6667	0.4404	0.8733	0.9786
bookmarks	0.9143	120.03	0.3525	0.1029	0.9284	0.8929
CAL500	0.8235	167.65	0.2546	0.1617	0.8908	0.6870
corel16k001	0.9964	110.06	0.1762	0.0348	0.8859	0.8270
Corel5k	0.9880	318.23	0.5829	0.0255	0.6359	0.5890
delicious	0.9975	906.20	0.1903	0.0242	0.9758	0.9853
emotions	0.2833	1.72	0.2125	0.7871	0.7523	0.7560
enron	0.5906	29.69	0.4825	0.4184	0.6097	0.6858
EukaryoteGO	0.3282	2.14	0.0197	0.7578	0.7113	0.8462
EukaryotePseAAC	0.7876	5.83	0.3573	0.3916	0.7829	0.8101
Eurlex-dc	0.8955	143.08	0.8827	0.1204	0.7380	0.9565
Eurlex-sm	0.8114	105.13	0.6977	0.1295	0.7811	0.8187
foodtruck	0.3171	2.93	0.3122	0.7466	0.5929	0.7479
genbase	0.6418	3.72	0.4328	0.5406	0.5957	0.8533
GnegativeGO	0.1286	0.48	0.1036	0.9080	0.7175	0.8454
GnegativePseAAC	0.2000	0.69	0.0607	0.8532	0.6579	0.8419
GpositivePseAAC	0.3077	0.42	0.0769	0.8285	0.7122	0.7643
HumanGO	0.3408	1.94	0.0796	0.7470	0.6856	0.7774
HumanPseAAC	0.7267	3.39	0.1885	0.4844	0.6497	0.7249
Image	0.2850	0.89	0.0908	0.8083	0.7484	0.7430
IMDB-ECC-F	0.6506	7.42	0.1722	0.4681	0.5178	0.5355
IMDB-F	0.6404	7.71	0.1822	0.4673	0.5167	0.5345
LLOG-F	0.8443	32.65	0.2898	0.2104	0.4266	0.7427
mediamill	0.9905	78.56	1.0000	0.0533	1.0000	1.0000
medical	0.5000	12.51	0.5145	0.4843	0.4501	0.7870
Music	0.2500	2.08	0.1958	0.7924	0.7870	0.7937
OHSUMED-F	0.4286	4.63	0.1590	0.6323	0.5747	0.5795
PlantGO	0.6122	2.50	0.1726	0.5694	0.6190	0.7154
PlantPseAAC	0.6531	2.69	0.2168	0.5358	0.5976	0.6746
rcv1subset1	0.9750	76.95	1.0000	0.0850	0.9297	0.9224
REUTERS-K500-EX2	0.8983	50.58	0.6933	0.1657	0.6674	0.8177
scene	0.2158	0.50	0.0768	0.8682	0.8606	0.8595
sider_CDK_ECFP4	0.5493	20.27	0.4187	0.6877	0.4107	0.4797
sider_MordredDesc	0.5915	24.94	1.0000	0.5511	1.0000	1.0000
sider_RDKit_desc	0.0986	19.62	0.1611	0.8132	0.4252	0.4918
SLASHDOT-F	0.4380	2.87	0.0092	0.6609	0.4372	0.7367
Stackex_chemistry	0.9885	105.24	0.2067	0.0381	0.8372	0.8637
Stackex_chess	0.9940	145.87	0.1097	0.0286	0.5185	0.8933
Stackex_coffee	1.0000	67.00	0.9728	0.0593	0.2410	0.8492
Stackex_cooking	0.9932	265.22	0.0875	0.0262	0.8843	0.9106
Stackex_cs	0.9968	194.41	0.1902	0.0302	0.8485	0.8063
Stackex_philosophy	0.9950	138.58	0.0828	0.0233	0.7117	0.9152
tmc2007-500	0.2290	2.66	0.0520	0.8114	0.6173	0.6795
tox21_CDK_ECFP4	0.5377	4.45	0.1549	0.5792	0.5394	0.5785
tox21_RDKit_desc	0.5342	4.42	0.1587	0.5811	0.5778	0.6318
VirusGO	0.2381	1.05	0.0675	0.8058	0.5159	0.7727
VirusPseAAC	0.2857	0.76	0.0000	0.8071	0.5806	0.8054
Water-quality	0.2925	9.63	0.2233	0.6671	0.5418	0.6299
Yahoo_Arts	0.6876	8.39	0.5335	0.4308	0.7522	0.8051
Yahoo_Business	0.1266	3.24	0.1830	0.8662	0.7214	0.9071
Yahoo_Computers	0.4659	6.58	0.5289	0.5729	0.7954	0.9050
Yahoo_Education	0.6650	6.44	0.5847	0.4800	0.7424	0.8663
Yahoo_Entertainment	0.7117	4.71	0.4098	0.4530	0.7798	0.8012
Yahoo_Health	0.5223	5.58	0.4510	0.5952	0.6956	0.8826
Yahoo_Recreation	0.6968	6.52	0.6206	0.4407	0.7160	0.7478
Yahoo_Reference	0.5878	6.08	0.4128	0.5185	0.7046	0.9108
Yahoo_Science	0.8491	14.18	0.5813	0.2878	0.8844	0.9098
Yahoo_Social	0.5677	8.29	0.4329	0.5200	0.8791	0.9618
yeast	0.2562	6.55	0.2939	0.7113	0.5691	0.7468
Yelp	0.2173	1.40	0.1749	0.8486	0.4694	0.4791

Table 80: Detailed results for PPT(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2785	0.75	0.0380	0.8435	0.8951	0.8969
3s-bbc1000	0.7500	2.75	0.7708	0.4467	0.4857	0.5258
3s-guardian1000	0.5806	2.00	0.6290	0.5919	0.4849	0.6369
3s-reuters1000	0.9000	2.77	0.8250	0.3606	0.4253	0.4624
bibtex	0.9081	92.41	0.5697	0.1839	0.8132	0.7855
birds	0.6667	7.51	0.2618	0.4231	0.5776	0.7170
bookmarks	0.9333	99.99	0.6471	0.4151	0.6196	0.5991
CAL500	0.8235	167.67	0.2543	0.1617	0.7795	0.6861
corel16k001	0.9956	107.67	0.1795	0.0881	0.8546	0.7956
Corel5k	0.9800	312.37	0.5806	0.0299	0.6377	0.6078
delicious	0.9975	906.65	0.2100	0.0242	0.9789	0.9847
emotions	0.2167	1.65	0.1417	0.8311	0.8635	0.8844
enron	0.4971	33.26	0.6048	0.2965	0.5734	0.6259
EukaryoteGO	0.1856	0.67	0.0110	0.8858	0.9829	0.9899
EukaryotePseAAC	0.5985	3.01	0.0389	0.5690	0.7255	0.8720
Eurlex-dc	0.9736	150.48	0.7895	0.1787	0.5944	0.7170
Eurlex-sm	0.7773	130.70	0.5787	0.1692	0.6987	0.6590
foodtruck	0.2439	3.44	0.3606	0.7512	0.3982	0.7305
genbase	0.0597	1.28	0.0672	0.9362	0.6567	0.9524
GnegativeGO	0.0214	0.09	0.0071	0.9875	0.8674	0.9961
GnegativePseAAC	0.2857	0.65	0.1304	0.8254	0.7721	0.9490
GpositivePseAAC	0.2500	0.40	0.1154	0.8526	0.9363	0.9291
HumanGO	0.2090	0.70	0.0217	0.8708	0.9589	0.9740
HumanPseAAC	0.6174	2.43	0.0536	0.5667	0.6833	0.8423
Image	0.3400	0.84	0.0542	0.7964	0.8361	0.8302
IMDB-ECC-F	0.9392	19.98	0.3552	0.1472	0.6612	0.3764
IMDB-F	0.9315	17.81	0.5232	0.1900	0.6115	0.5378
LLOG-F	0.9262	37.69	0.4481	0.1839	0.4235	0.5882
mediamill	0.9945	86.09	0.2950	0.0611	0.7933	0.7274
medical	0.5204	10.84	0.4796	0.4981	0.4225	0.7270
Music	0.2333	1.90	0.1875	0.8147	0.8753	0.8763
OHSUMED-F	0.5118	5.03	0.1753	0.5924	0.8338	0.8471
PlantGO	0.2812	0.70	0.0260	0.8333	0.9429	0.9508
PlantPseAAC	0.6429	2.33	0.1709	0.5599	0.7832	0.8418
rcv1subset1	0.9717	66.22	0.3705	0.0536	0.6984	0.6044
REUTERS-K500-EX2	0.9296	54.67	0.8058	0.1312	0.6313	0.7801
scene	0.1867	0.43	0.0851	0.8885	0.9407	0.9431
sider_CDK_ECFP4	0.0986	19.26	0.0992	0.8394	0.5185	0.7964
sider_MordredDesc	0.0915	19.34	0.0984	0.8387	0.5307	0.7965
sider_RDKit_desc	0.1056	19.36	0.1070	0.8376	0.5199	0.7943
SLASHDOT-F	0.8783	7.85	0.5877	0.2512	0.4755	0.6774
Stackex_chemistry	0.9870	101.44	0.2147	0.1110	0.7750	0.7994
Stackex_chess	1.0000	146.44	0.1447	0.0269	0.5191	0.8944
Stackex_coffee	1.0000	67.04	0.9728	0.0593	0.2315	0.8492
Stackex_cooking	0.9981	257.36	0.0880	0.1154	0.8089	0.8330
Stackex_cs	0.9989	187.27	0.1827	0.1362	0.7588	0.7381
Stackex_philosophy	1.0000	133.04	0.2980	0.1261	0.6347	0.8312
tmc2007-500	0.3017	2.85	0.0654	0.8207	0.8761	0.8908
tox21_CDK_ECFP4	0.5240	3.97	0.0899	0.6882	0.5915	0.6543
tox21_RDKit_desc	0.5068	4.27	0.0852	0.5930	0.6653	0.7242
VirusGO	0.1429	0.71	0.1111	0.8772	0.7578	0.9137
VirusPseAAC	0.3333	0.76	0.0000	0.7913	0.6638	0.9080
Water-quality	0.3208	9.78	0.2136	0.6542	0.6399	0.6615
Yahoo_Arts	0.5300	4.84	0.3243	0.6125	0.6986	0.8052
Yahoo_Business	0.1319	2.71	0.1479	0.8894	0.4292	0.8659
Yahoo_Computers	0.4153	3.61	0.3412	0.7061	0.6073	0.8293
Yahoo_Education	0.5844	3.50	0.0800	0.7094	0.4393	0.6842
Yahoo_Entertainment	0.5271	3.17	0.1002	0.6239	0.6715	0.8366
Yahoo_Health	0.5288	2.83	0.0547	0.8397	0.3971	0.6321
Yahoo_Recreation	0.5214	3.85	0.3668	0.5953	0.7789	0.8509
Yahoo_Reference	0.5741	5.25	0.2970	0.5093	0.4232	0.8024
Yahoo_Science	0.6314	10.82	0.4089	0.4681	0.6245	0.7453
Yahoo_Social	0.9827	11.75	0.4485	0.6768	0.1510	0.1128
yeast	0.2769	6.27	0.2327	0.7416	0.7118	0.8189
Yelp	0.1256	1.18	0.1759	0.9060	0.8762	0.8857

Table 81: Detailed results for PPT(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5539	3.91	0.1444	0.5638	0.9020	0.8712
3s-bbc1000	0.7222	2.69	0.6551	0.4721	0.6860	0.6671
3s-guardian1000	0.7419	2.61	0.4839	0.4852	0.6681	0.6652
3s-reuters1000	0.8667	2.17	0.6667	0.4328	0.7526	0.7308
bibtex	0.8932	97.58	0.8636	0.1254	0.9059	0.8963
birds	0.6667	6.97	0.4673	0.4648	0.7902	0.8965
bookmarks	0.9143	124.55	0.7915	0.1018	0.9276	0.9155
CAL500	0.8235	167.98	0.8751	0.1675	0.8129	0.7035
corel16k001	0.9956	110.78	0.3912	0.0339	0.9251	0.8345
Corel5k	0.9840	315.93	0.6417	0.0357	0.6479	0.6152
delicious	0.9975	910.58	0.4422	0.0235	0.9797	0.9877
emotions	0.3500	2.08	0.2472	0.7549	0.8228	0.8313
enron	0.6316	30.22	0.6735	0.3476	0.6265	0.6985
EukaryoteGO	0.2088	1.56	0.1032	0.8477	0.9916	0.9940
EukaryotePseAAC	0.7246	7.44	0.5778	0.3842	0.9203	0.9330
Eurlex-dc	0.8753	146.07	0.8694	0.1368	0.7461	0.9711
Eurlex-sm	0.7183	105.42	0.7349	0.2225	0.7722	0.8331
foodtruck	0.3659	3.32	0.3271	0.7073	0.7302	0.8485
genbase	0.0000	0.49	0.0075	0.9932	0.6667	1.0000
GnegativeGO	0.0214	0.11	0.0179	0.9833	0.8744	0.9995
GnegativePseAAC	0.4571	1.43	0.3518	0.6892	0.8117	0.9494
GpositivePseAAC	0.4615	0.92	0.2692	0.7083	0.8976	0.9016
HumanGO	0.2379	1.50	0.1484	0.8159	0.9777	0.9843
HumanPseAAC	0.6817	4.96	0.5289	0.4456	0.8700	0.8862
Image	0.4250	1.27	0.2517	0.7157	0.8686	0.8698
IMDB-ECC-F	0.6506	8.29	0.2445	0.4566	0.6335	0.7845
IMDB-F	0.6379	8.49	0.2508	0.4613	0.6258	0.7863
LLOG-F	0.9180	38.19	0.9078	0.1194	0.5274	0.8744
mediamill	0.9895	86.56	0.9387	0.0542	0.8661	0.7991
medical	0.5306	15.61	0.5306	0.4983	0.4730	0.8616
Music	0.3833	2.33	0.3662	0.7244	0.8303	0.8316
OHSUMED-F	0.5477	8.02	0.3399	0.4875	0.7584	0.8171
PlantGO	0.2292	0.86	0.1094	0.8522	0.9838	0.9859
PlantPseAAC	0.7347	3.70	0.5714	0.4362	0.8757	0.8842
rcv1subset1	0.9733	75.16	0.8847	0.0766	0.7623	0.7476
REUTERS-K500-EX2	0.8625	57.06	0.8380	0.1687	0.7228	0.9198
scene	0.4066	1.49	0.2998	0.7003	0.9202	0.9232
sider_CDK_ECFP4	0.3099	20.24	0.3169	0.7484	0.5610	0.7481
sider_MordredDesc	0.3239	20.44	0.3278	0.7454	0.5482	0.7351
sider_RDKit_desc	0.3028	20.32	0.3141	0.7543	0.5457	0.7491
SLASHDOT-F	0.5767	4.85	0.1663	0.5410	0.6333	0.8482
Stackex_chemistry	0.9539	105.70	0.6988	0.0505	0.8613	0.9161
Stackex_chess	0.9881	156.14	0.9727	0.0250	0.5325	0.9490
Stackex_coffee	1.0000	73.87	1.0000	0.0417	0.2575	0.9801
Stackex_cooking	0.9913	268.61	0.6949	0.0186	0.8809	0.9251
Stackex_cs	0.9924	193.85	0.8055	0.0362	0.8416	0.8375
Stackex_philosophy	0.9975	146.40	0.9300	0.0206	0.7041	0.9460
tmc2007-500	0.3874	6.12	0.2642	0.6433	0.8932	0.9248
tox21_CDK_ECFP4	0.5582	5.24	0.3915	0.5342	0.7764	0.7959
tox21_RDKit_desc	0.5582	5.50	0.4107	0.5196	0.7708	0.7937
VirusGO	0.0952	0.76	0.1349	0.9063	0.8207	0.9905
VirusPseAAC	0.6190	1.76	0.2500	0.5675	0.5958	0.8236
Water-quality	0.3774	9.92	0.4025	0.6248	0.6849	0.7118
Yahoo_Arts	0.6409	9.39	0.4833	0.4503	0.8113	0.8744
Yahoo_Business	0.1346	3.14	0.1475	0.8612	0.7268	0.9528
Yahoo_Computers	0.4434	5.90	0.4044	0.6091	0.7340	0.8995
Yahoo_Education	0.6276	7.06	0.4634	0.4961	0.7139	0.9003
Yahoo_Entertainment	0.4886	3.52	0.2171	0.6173	0.8456	0.8901
Yahoo_Health	0.3605	4.96	0.2976	0.6895	0.7418	0.9384
Yahoo_Recreation	0.5627	5.40	0.4489	0.5491	0.8150	0.8585
Yahoo_Reference	0.4633	4.79	0.2847	0.6169	0.6769	0.9259
Yahoo_Science	0.7403	14.57	0.5889	0.3519	0.7996	0.8317
Yahoo_Social	0.3787	6.16	0.2831	0.6704	0.7052	0.8944
yeast	0.4008	6.99	0.3860	0.6764	0.7287	0.8173
Yelp	0.1645	1.31	0.1760	0.8792	0.8253	0.8609

Table 82: Detailed results for PPT(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5707	3.95	0.1889	0.5437	0.9074	0.8939
3s-bbc1000	0.6111	1.94	0.5139	0.5720	0.7271	0.7186
3s-guardian1000	0.6452	1.94	0.4032	0.5745	0.5845	0.6849
3s-reuters1000	0.9000	2.03	0.8333	0.4283	0.6632	0.6182
bibtex	0.8635	96.58	0.8136	0.1448	0.8854	0.8682
birds	0.5128	5.67	0.1942	0.5452	0.7049	0.8142
bookmarks	0.9633	124.54	0.8341	0.0947	0.9131	0.9361
CAL500	0.8235	167.33	0.2613	0.1631	0.8092	0.6916
corel16k001	0.9935	118.34	0.9800	0.0348	0.9885	0.9822
Corel5k	0.9720	315.57	0.7014	0.0386	0.6437	0.6149
delicious	0.9975	919.53	0.9953	0.0221	0.9941	0.9989
emotions	0.2667	1.85	0.1958	0.7947	0.8224	0.8427
enron	0.4737	27.46	0.5542	0.4171	0.5811	0.7023
EukaryoteGO	0.1982	0.73	0.0242	0.8770	0.9851	0.9916
EukaryotePseAAC	0.6525	3.67	0.1316	0.5235	0.8213	0.8920
Eurlex-dc	0.9938	141.12	0.9957	0.0653	0.7590	0.9972
Eurlex-sm	0.7742	77.91	0.9923	0.1612	0.8301	0.9921
foodtruck	0.2683	3.05	0.3221	0.7602	0.6363	0.8033
genbase	0.0000	0.49	0.0075	0.9932	0.6667	0.9999
GnegativeGO	0.0143	0.10	0.0071	0.9889	0.8739	0.9992
GnegativePseAAC	0.3714	1.04	0.2054	0.7504	0.7418	0.9020
GpositivePseAAC	0.3654	0.69	0.2308	0.7692	0.8100	0.8235
HumanGO	0.1961	0.80	0.0521	0.8721	0.9625	0.9776
HumanPseAAC	0.6817	3.10	0.1666	0.5131	0.7102	0.8151
Image	0.3650	1.01	0.1142	0.7652	0.8042	0.8080
IMDB-ECC-F	0.6846	8.29	0.2376	0.4828	0.6602	0.8100
IMDB-F	0.6460	8.48	0.2941	0.4514	0.6166	0.7630
LLOG-F	0.8852	37.61	0.7041	0.1548	0.4614	0.7239
mediamill	0.9905	81.62	0.9809	0.0524	0.9979	0.9599
medical	0.4796	14.68	0.4830	0.5315	0.4630	0.8220
Music	0.2500	2.15	0.1787	0.7801	0.7784	0.7976
OHSUMED-F	0.5303	8.02	0.3528	0.5295	0.7943	0.8355
PlantGO	0.2245	0.59	0.0255	0.8632	0.9793	0.9788
PlantPseAAC	0.8163	3.45	0.3282	0.4171	0.6568	0.7181
rcv1subset1	0.9935	75.17	0.8608	0.0606	0.7807	0.7582
REUTERS-K500-EX2	0.8583	56.75	0.7825	0.1841	0.6897	0.8859
scene	0.3195	0.74	0.1317	0.8003	0.8996	0.9131
sider_CDK_ECFP4	0.1408	19.53	0.1937	0.7993	0.5558	0.7587
sider_MordredDesc	0.1831	19.74	0.1959	0.8105	0.5671	0.7507
sider_RDKit_desc	0.1338	19.67	0.1782	0.8118	0.5582	0.7601
SLASHDOT-F	0.4274	3.04	0.1022	0.6777	0.6907	0.9310
Stackex_chemistry	0.9555	108.45	0.7365	0.0521	0.8470	0.9040
Stackex_chess	0.9881	152.70	0.9678	0.0245	0.5173	0.9172
Stackex_coffee	0.9130	72.43	0.9746	0.0628	0.2359	0.8889
Stackex_cooking	0.9913	272.54	0.9686	0.0182	0.8877	0.9281
Stackex_cs	0.9805	193.58	0.8350	0.0365	0.8364	0.8273
Stackex_philosophy	0.9899	149.61	0.9384	0.0237	0.6957	0.9406
tmc2007-500	0.4126	6.17	0.2943	0.6532	0.9382	0.9420
tox21_CDK_ECFP4	0.5205	4.48	0.1914	0.5770	0.6545	0.7270
tox21_RDKit_desc	0.5171	4.47	0.1721	0.5861	0.6946	0.7543
VirusGO	0.0952	0.52	0.0556	0.9262	0.8001	0.9743
VirusPseAAC	0.5238	1.00	0.0476	0.6937	0.6379	0.8713
Water-quality	0.2830	9.34	0.2464	0.6847	0.6376	0.6975
Yahoo_Arts	0.6688	9.38	0.5163	0.4669	0.8519	0.8497
Yahoo_Business	0.1283	3.96	0.3156	0.8461	0.8643	0.9970
Yahoo_Computers	0.4289	5.92	0.4442	0.6104	0.7701	0.9359
Yahoo_Education	0.6308	7.10	0.4400	0.4745	0.7000	0.9318
Yahoo_Entertainment	0.5058	3.50	0.1967	0.6147	0.8212	0.9154
Yahoo_Health	0.3924	4.94	0.2807	0.7016	0.7648	0.9516
Yahoo_Recreation	0.5535	5.43	0.4338	0.5604	0.7977	0.8943
Yahoo_Reference	0.5009	4.80	0.3021	0.6486	0.6862	0.9441
Yahoo_Science	0.7817	14.60	0.6200	0.3972	0.7848	0.8754
Yahoo_Social	0.3635	6.18	0.2619	0.6820	0.7263	0.8987
yeast	0.2934	6.74	0.2755	0.7119	0.6558	0.8052
Yelp	0.0967	1.15	0.1088	0.9240	0.8867	0.9212

Table 83: Detailed results for PPT-n(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3301	1.46	0.0855	0.7716	0.5887	0.5952
3s-bbc1000	0.6944	2.56	0.6204	0.5092	0.5353	0.5331
3s-guardian1000	0.6129	2.10	0.5161	0.5715	0.5061	0.5267
3s-reuters1000	0.8667	2.23	0.8333	0.4250	0.4913	0.5251
bibtex	0.8432	87.50	0.7469	0.1697	0.9145	0.8613
birds	0.8974	9.56	0.9359	0.2760	0.8917	0.9970
bookmarks	0.9150	120.43	0.7318	0.1026	0.9280	0.8920
CAL500	0.8235	167.65	0.2546	0.1617	0.8908	0.6870
corel16k001	0.9964	110.07	0.1762	0.0348	0.8859	0.8270
Corel5k	0.9880	318.28	0.5829	0.0255	0.6360	0.5890
delicious	0.9975	906.22	0.1903	0.0242	0.9758	0.9853
emotions	0.3167	1.73	0.1875	0.7760	0.7337	0.7381
enron	0.5731	28.04	0.4254	0.4397	0.6251	0.7060
EukaryoteGO	0.3282	2.11	0.0153	0.7583	0.6910	0.8451
EukaryotePseAAC	0.7915	5.79	0.3465	0.3928	0.7806	0.8100
Eurlex-dc	0.8955	143.09	0.8832	0.1202	0.7378	0.9561
Eurlex-sm	0.8093	104.61	0.6997	0.1312	0.7815	0.8217
foodtruck	0.4390	3.41	0.3283	0.6786	0.5741	0.7232
genbase	0.6418	3.70	0.4295	0.5429	0.5963	0.8534
GnegativeGO	0.1286	0.46	0.0893	0.9104	0.7173	0.8448
GnegativePseAAC	0.1929	0.67	0.0607	0.8570	0.6597	0.8422
GpositivePseAAC	0.2885	0.40	0.0962	0.8381	0.7133	0.7612
HumanGO	0.3408	1.94	0.0792	0.7469	0.6337	0.7740
HumanPseAAC	0.6945	3.04	0.1451	0.5137	0.6271	0.7174
Image	0.2850	0.88	0.0896	0.8083	0.7492	0.7416
IMDB-ECC-F	0.6517	7.41	0.1705	0.4673	0.5176	0.5341
IMDB-F	0.6418	7.73	0.1814	0.4667	0.5167	0.5330
LLOG-F	0.8279	33.41	0.2968	0.2144	0.4285	0.7397
mediamill	0.9905	78.56	1.0000	0.0533	1.0000	1.0000
medical	0.5000	12.34	0.5145	0.4871	0.4492	0.7891
Music	0.2500	2.03	0.1792	0.7956	0.7695	0.7716
OHSUMED-F	0.4487	4.52	0.1454	0.6250	0.5741	0.5703
PlantGO	0.6224	2.51	0.1726	0.5625	0.6158	0.7142
PlantPseAAC	0.6327	2.63	0.2372	0.5448	0.6165	0.6842
rcv1subset1	0.9750	75.75	1.0000	0.0860	0.9308	0.9314
REUTERS-K500-EX2	0.9033	50.08	0.6915	0.1632	0.6664	0.8341
scene	0.2116	0.51	0.0809	0.8689	0.8603	0.8596
sider_CDK_ECFP4	0.1620	19.71	0.1997	0.8023	0.4091	0.5162
sider_MordredDesc	0.5915	24.94	1.0000	0.5511	1.0000	1.0000
sider_RDKit_desc	0.1901	19.57	0.1279	0.8102	0.4203	0.5796
SLASHDOT-F	0.4354	2.76	0.0125	0.6667	0.4398	0.7336
Stackex_chemistry	0.9899	105.12	0.1929	0.0376	0.8373	0.8633
Stackex_chess	0.9940	145.87	0.1103	0.0286	0.5184	0.8935
Stackex_coffee	1.0000	66.78	0.9583	0.0593	0.2413	0.8503
Stackex_cooking	0.9952	265.60	0.0900	0.0249	0.8843	0.9099
Stackex_cs	0.9978	194.58	0.1898	0.0300	0.8483	0.8059
Stackex_philosophy	0.9975	138.82	0.0834	0.0225	0.7117	0.9144
tmc2007-500	0.2329	2.65	0.0514	0.8097	0.6144	0.6746
tox21_CDK_ECFP4	0.5274	4.53	0.1566	0.5815	0.5310	0.5554
tox21_RDKit_desc	0.5342	4.51	0.1580	0.5788	0.5793	0.6156
VirusGO	0.2381	0.95	0.0476	0.8122	0.5159	0.7699
VirusPseAAC	0.2857	0.86	0.0000	0.8008	0.5805	0.8024
Water-quality	0.4434	10.15	0.4001	0.5545	0.5155	0.5320
Yahoo_Arts	0.6916	8.49	0.5339	0.4271	0.7379	0.7985
Yahoo_Business	0.1257	3.24	0.1822	0.8665	0.7141	0.9036
Yahoo_Computers	0.4683	6.60	0.5337	0.5715	0.7971	0.9057
Yahoo_Education	0.6717	6.47	0.5849	0.4763	0.7178	0.8623
Yahoo_Entertainment	0.7109	4.73	0.4120	0.4522	0.7751	0.7982
Yahoo_Health	0.5223	5.57	0.4502	0.5953	0.6955	0.8823
Yahoo_Recreation	0.6991	6.53	0.6190	0.4390	0.7144	0.7470
Yahoo_Reference	0.5890	6.07	0.4099	0.5175	0.6968	0.9062
Yahoo_Science	0.8460	14.17	0.5794	0.2906	0.8834	0.9086
Yahoo_Social	0.5693	8.28	0.4315	0.5190	0.8772	0.9609
yeast	0.2603	6.63	0.2973	0.7054	0.5474	0.7323
Yelp	0.2173	1.40	0.1749	0.8486	0.4694	0.4791

Table 84: Detailed results for PPT-n(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2832	0.75	0.0359	0.8414	0.9016	0.9028
3s-bbc1000	0.7500	2.64	0.7569	0.4590	0.5209	0.5546
3s-guardian1000	0.5806	2.10	0.5161	0.5769	0.5446	0.6703
3s-reuters1000	0.9000	2.80	0.8667	0.3583	0.4479	0.4586
bibtex	0.9027	90.32	0.6007	0.2507	0.7797	0.7525
birds	0.6667	6.54	0.2355	0.4703	0.6957	0.7710
bookmarks	0.9332	105.78	0.1820	0.3305	0.6836	0.6604
CAL500	0.8235	167.67	0.2543	0.1617	0.7795	0.6861
corel16k001	0.9964	109.88	0.1760	0.0348	0.8845	0.8270
Corel5k	0.9880	317.78	0.5663	0.0256	0.6391	0.5949
delicious	0.9975	906.29	0.1988	0.0242	0.9773	0.9851
emotions	0.2167	1.62	0.1375	0.8328	0.8651	0.8860
enron	0.6082	27.44	0.5295	0.6128	0.4819	0.5349
EukaryoteGO	0.2448	1.20	0.0345	0.8440	0.9569	0.9407
EukaryotePseAAC	0.5084	2.17	0.0115	0.6520	0.7694	0.9177
Eurlex-dc	0.9814	172.30	0.8605	0.0663	0.6985	0.8257
Eurlex-sm	0.7638	118.02	0.5298	0.2203	0.7066	0.6851
foodtruck	0.2439	3.24	0.3553	0.7534	0.4322	0.7536
genbase	0.0000	0.66	0.0149	0.9837	0.6667	0.9898
GnegativeGO	0.0786	0.21	0.0500	0.9496	0.8686	0.9941
GnegativePseAAC	0.2643	0.65	0.1321	0.8331	0.7716	0.9503
GpositivePseAAC	0.2308	0.40	0.1346	0.8590	0.9349	0.9270
HumanGO	0.1994	0.56	0.0186	0.8833	0.9715	0.9795
HumanPseAAC	0.6206	2.53	0.0773	0.5609	0.6818	0.8391
Image	0.3300	0.85	0.0546	0.7971	0.8353	0.8286
IMDB-ECC-F	0.6756	8.93	0.2407	0.4335	0.6204	0.7351
IMDB-F	0.6336	8.18	0.1923	0.4648	0.6100	0.7721
LLOG-F	0.9426	39.07	0.4727	0.1566	0.4400	0.5949
mediamill	0.9945	85.05	0.2955	0.0620	0.8056	0.7327
medical	0.5102	10.80	0.4643	0.5071	0.4176	0.7265
Music	0.2500	1.98	0.1764	0.8020	0.8518	0.8506
OHSUMED-F	0.5786	5.34	0.1990	0.5500	0.8327	0.8344
PlantGO	0.2188	0.43	0.0260	0.8800	0.9669	0.9699
PlantPseAAC	0.6327	2.31	0.1607	0.5622	0.7797	0.8359
rcv1subset1	0.9833	66.02	0.3770	0.0503	0.6972	0.6022
REUTERS-K500-EX2	0.8557	48.39	0.7265	0.2185	0.6119	0.7748
scene	0.1784	0.37	0.0705	0.8962	0.9536	0.9597
sider_CDK_ECFP4	0.2389	21.34	0.2591	0.7581	0.5987	0.7592
sider_MordredDesc	0.1045	23.14	0.5269	0.7072	0.7207	0.8133
sider_RDKit_desc	0.1408	19.64	0.1404	0.8041	0.5603	0.7640
SLASHDOT-F	0.8889	7.38	0.5534	0.2816	0.4670	0.6574
Stackex_chemistry	0.9813	100.68	0.1717	0.1285	0.7655	0.7938
Stackex_chess	1.0000	146.91	0.1114	0.0266	0.5126	0.8914
Stackex_coffee	0.9565	65.39	0.9438	0.0743	0.2390	0.8662
Stackex_cooking	0.9981	256.53	0.0880	0.1133	0.8105	0.8359
Stackex_cs	0.9978	186.82	0.1825	0.1226	0.7699	0.7412
Stackex_philosophy	0.9975	135.21	0.2886	0.0717	0.6675	0.8666
tmc2007-500	0.3014	2.86	0.0650	0.8138	0.8808	0.8944
tox21_CDK_ECFP4	0.5205	3.90	0.0630	0.6536	0.6358	0.6699
tox21_RDKit_desc	0.5274	3.92	0.0709	0.6950	0.6150	0.6614
VirusGO	0.1429	0.81	0.1111	0.8717	0.7465	0.9125
VirusPseAAC	0.4762	0.90	0.0000	0.7198	0.6421	0.8902
Water-quality	0.3019	9.51	0.2386	0.6497	0.6615	0.6447
Yahoo_Arts	0.5447	4.85	0.3309	0.6176	0.6721	0.7784
Yahoo_Business	0.1604	2.84	0.1575	0.8441	0.4591	0.9269
Yahoo_Computers	0.4129	3.01	0.2645	0.8462	0.4326	0.5661
Yahoo_Education	0.5586	4.26	0.3097	0.5884	0.6132	0.8924
Yahoo_Entertainment	0.4855	3.88	0.1093	0.5987	0.6943	0.8698
Yahoo_Health	0.4528	3.55	0.2925	0.6533	0.6052	0.9142
Yahoo_Recreation	0.5284	3.89	0.3737	0.5909	0.7837	0.8515
Yahoo_Reference	0.5878	5.52	0.2970	0.5005	0.4276	0.7980
Yahoo_Science	0.6299	10.69	0.4043	0.4703	0.6710	0.7559
Yahoo_Social	0.3663	4.83	0.2030	0.7086	0.5710	0.8513
yeast	0.2603	6.29	0.2365	0.7458	0.7152	0.8338
Yelp	0.1057	1.16	0.1576	0.9163	0.8771	0.8882

Table 85: Detailed results for PPT-n(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5545	3.87	0.1460	0.5640	0.9029	0.8721
3s-bbc1000	0.7222	2.61	0.6273	0.4805	0.6912	0.6736
3s-guardian1000	0.5806	2.06	0.3387	0.5909	0.7292	0.7264
3s-reuters1000	0.7667	2.23	0.6500	0.4772	0.7719	0.7352
bibtex	0.8905	96.40	0.8527	0.1280	0.9024	0.8971
birds	0.5385	5.56	0.4087	0.5710	0.8177	0.9239
bookmarks	0.9155	125.12	0.8040	0.0995	0.9251	0.9133
CAL500	0.8235	167.98	0.8751	0.1675	0.8129	0.7035
corel16k001	0.9956	110.88	0.3802	0.0343	0.9230	0.8340
Corel5k	0.9700	316.44	0.6367	0.0378	0.6486	0.6158
delicious	0.9975	910.34	0.4305	0.0235	0.9805	0.9875
emotions	0.3833	2.28	0.3097	0.7265	0.7963	0.8019
enron	0.6433	31.38	0.7108	0.3269	0.6389	0.6894
EukaryoteGO	0.2049	1.54	0.0987	0.8508	0.9917	0.9942
EukaryotePseAAC	0.7272	7.80	0.6083	0.3714	0.9240	0.9367
Eurlex-dc	0.8738	145.57	0.8705	0.1362	0.7450	0.9724
Eurlex-sm	0.7199	106.81	0.7270	0.2190	0.7689	0.8267
foodtruck	0.3659	3.10	0.3453	0.7236	0.7149	0.8518
genbase	0.0000	0.49	0.0075	0.9932	0.6667	1.0000
GnegativeGO	0.0214	0.11	0.0179	0.9833	0.8744	0.9995
GnegativePseAAC	0.4500	1.31	0.3375	0.7035	0.8114	0.9497
GpositivePseAAC	0.4423	0.90	0.2692	0.7179	0.9070	0.9088
HumanGO	0.2315	1.50	0.1479	0.8216	0.9790	0.9851
HumanPseAAC	0.6977	4.93	0.5513	0.4388	0.8720	0.8898
Image	0.3950	1.29	0.2554	0.7232	0.8624	0.8659
IMDB-ECC-F	0.6553	8.24	0.2436	0.4551	0.6307	0.7852
IMDB-F	0.6418	8.50	0.2560	0.4593	0.6249	0.7859
LLOG-F	0.9590	41.61	0.9419	0.0813	0.5002	0.8244
mediamill	0.9893	86.56	0.9395	0.0539	0.8674	0.8014
medical	0.5204	15.73	0.5357	0.5029	0.4894	0.8614
Music	0.4167	2.47	0.3704	0.7050	0.8179	0.8152
OHSUMED-F	0.5370	7.71	0.3075	0.5008	0.7494	0.8154
PlantGO	0.2292	0.80	0.0781	0.8565	0.9845	0.9863
PlantPseAAC	0.7347	3.79	0.5663	0.4375	0.8768	0.8881
rcv1subset1	0.9667	75.31	0.8985	0.0781	0.7679	0.7398
REUTERS-K500-EX2	0.8814	57.73	0.8447	0.1584	0.7180	0.9159
scene	0.3900	1.41	0.2842	0.7151	0.9271	0.9321
sider_CDK_ECFP4	0.1690	22.41	0.4996	0.7389	0.6442	0.7685
sider_MordredDesc	0.2042	22.62	0.5511	0.7156	0.6663	0.7798
sider_RDKit_desc	0.1690	22.48	0.4660	0.7430	0.6580	0.7819
SLASHDOT-F	0.5741	4.61	0.1631	0.5442	0.6471	0.8517
Stackex_chemistry	0.9582	108.04	0.7050	0.0466	0.8511	0.9034
Stackex_chess	0.9881	154.59	0.9789	0.0249	0.5233	0.9376
Stackex_coffee	0.9565	75.48	0.9855	0.0535	0.2590	0.9979
Stackex_cooking	0.9874	266.23	0.8140	0.0214	0.8899	0.9300
Stackex_cs	0.9870	193.58	0.8105	0.0389	0.8417	0.8371
Stackex_philosophy	0.9874	149.46	0.9465	0.0233	0.7056	0.9448
tmc2007-500	0.3874	6.11	0.2615	0.6447	0.8913	0.9234
tox21_CDK_ECFP4	0.5514	5.08	0.3552	0.5459	0.7735	0.7997
tox21_RDKit_desc	0.5959	5.32	0.3875	0.5200	0.7588	0.7839
VirusGO	0.1429	0.62	0.1111	0.9024	0.8212	0.9853
VirusPseAAC	0.4286	1.24	0.2500	0.7071	0.6192	0.8556
Water-quality	0.3679	10.08	0.4545	0.6232	0.6791	0.7064
Yahoo_Arts	0.6168	8.83	0.4525	0.4738	0.7851	0.8583
Yahoo_Business	0.1292	3.20	0.1540	0.8628	0.7241	0.9502
Yahoo_Computers	0.4458	5.75	0.4062	0.6160	0.7424	0.9033
Yahoo_Education	0.6326	7.47	0.4726	0.4926	0.7427	0.9036
Yahoo_Entertainment	0.4957	3.71	0.2266	0.6068	0.8198	0.8831
Yahoo_Health	0.3409	4.73	0.2713	0.7017	0.7312	0.9373
Yahoo_Recreation	0.5588	5.42	0.4651	0.5517	0.8062	0.8510
Yahoo_Reference	0.4857	5.00	0.2962	0.6022	0.6519	0.9258
Yahoo_Science	0.7092	14.45	0.5778	0.3665	0.7603	0.8295
Yahoo_Social	0.3969	6.37	0.2934	0.6577	0.6714	0.8940
yeast	0.3554	7.12	0.3760	0.6860	0.6946	0.8020
Yelp	0.1645	1.31	0.1760	0.8792	0.8253	0.8609

Table 86: Detailed results for PPT-n(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5684	3.91	0.1440	0.5611	0.8854	0.8915
3s-bbc1000	0.5833	1.61	0.5694	0.6137	0.7573	0.7480
3s-guardian1000	0.6129	1.97	0.4677	0.5831	0.5997	0.6858
3s-reuters1000	0.9000	2.13	0.8000	0.4156	0.5966	0.5760
bibtex	0.8676	96.23	0.8201	0.1441	0.8823	0.8656
birds	0.4615	5.36	0.1777	0.6207	0.7563	0.8378
bookmarks	0.9391	128.07	0.9392	0.0836	0.9992	0.9853
CAL500	0.8235	167.06	0.2559	0.1624	0.8097	0.6903
corel16k001	0.9935	117.98	0.9786	0.0349	0.9900	0.9836
Corel5k	0.9640	316.60	0.6996	0.0408	0.6448	0.6162
delicious	0.9975	919.44	0.9952	0.0221	0.9936	0.9987
emotions	0.2667	1.85	0.1292	0.7974	0.8124	0.8329
enron	0.4971	28.99	0.5821	0.3929	0.6105	0.6942
EukaryoteGO	0.2085	0.74	0.0262	0.8725	0.9850	0.9915
EukaryotePseAAC	0.6448	3.64	0.1250	0.5284	0.8223	0.8925
Eurlex-dc	0.9953	141.23	0.9967	0.0642	0.7588	0.9964
Eurlex-sm	0.7175	106.79	0.7483	0.2150	0.8055	0.8153
foodtruck	0.2927	2.93	0.3081	0.7535	0.6241	0.8063
genbase	0.0000	0.49	0.0075	0.9932	0.6667	0.9998
GnegativeGO	0.0286	0.11	0.0143	0.9821	0.8735	0.9989
GnegativePseAAC	0.4357	1.14	0.2429	0.7142	0.7287	0.8992
GpositivePseAAC	0.3846	0.67	0.2308	0.7660	0.8213	0.8393
HumanGO	0.1672	0.94	0.0574	0.8810	0.9596	0.9770
HumanPseAAC	0.6656	3.03	0.1441	0.5170	0.7001	0.8151
Image	0.3650	1.00	0.1154	0.7680	0.8037	0.8074
IMDB-ECC-F	0.6563	8.26	0.2199	0.4762	0.6067	0.8313
IMDB-F	0.6376	8.53	0.2521	0.4725	0.6192	0.7903
LLOG-F	0.8770	36.50	0.7561	0.1574	0.4490	0.7283
mediamill	0.9905	81.60	0.9809	0.0525	0.9989	0.9602
medical	0.4490	14.88	0.4728	0.5516	0.4625	0.8252
Music	0.3000	2.28	0.2213	0.7424	0.7788	0.7922
OHSUMED-F	0.5134	7.75	0.3517	0.4832	0.7440	0.7923
PlantGO	0.2347	0.88	0.0510	0.8450	0.9768	0.9763
PlantPseAAC	0.7755	3.52	0.3180	0.4300	0.6597	0.7203
rcv1subset1	0.9460	75.34	0.9102	0.0859	0.7582	0.7179
REUTERS-K500-EX2	0.8500	57.01	0.7777	0.1822	0.6975	0.8800
scene	0.2780	0.64	0.1255	0.8262	0.9032	0.9171
sider_CDK_ECFP4	0.1408	20.66	0.2809	0.7929	0.6122	0.7746
sider_MordredDesc	0.1127	19.82	0.2121	0.8118	0.5656	0.7645
sider_RDKit_desc	0.1268	19.85	0.2060	0.8153	0.5833	0.7735
SLASHDOT-F	0.4037	2.93	0.0932	0.6870	0.6884	0.9309
Stackex_chemistry	0.9612	107.77	0.7516	0.0493	0.8504	0.9048
Stackex_chess	0.9762	150.05	0.9642	0.0326	0.5170	0.9263
Stackex_coffee	0.9565	71.30	0.9601	0.0626	0.2370	0.9044
Stackex_cooking	0.9894	271.58	0.9665	0.0195	0.8905	0.9305
Stackex_cs	0.9870	195.30	0.8248	0.0324	0.8393	0.8244
Stackex_philosophy	0.9874	150.33	0.9219	0.0239	0.6906	0.9343
tmc2007-500	0.4367	6.13	0.3026	0.6250	0.8718	0.9520
tox21_CDK_ECFP4	0.5171	4.52	0.1879	0.5848	0.6728	0.7363
tox21_RDKit_desc	0.5377	4.42	0.1502	0.5759	0.7023	0.7542
VirusGO	0.0476	0.48	0.0556	0.9500	0.8065	0.9782
VirusPseAAC	0.4762	1.14	0.0476	0.7048	0.6523	0.8687
Water-quality	0.3302	9.43	0.2686	0.6645	0.6405	0.6836
Yahoo_Arts	0.6036	8.85	0.4431	0.4747	0.7691	0.8343
Yahoo_Business	0.1283	3.96	0.3180	0.8455	0.8644	0.9970
Yahoo_Computers	0.4437	5.79	0.4401	0.6616	0.7876	0.9153
Yahoo_Education	0.6166	7.49	0.4983	0.5162	0.7412	0.9153
Yahoo_Entertainment	0.5311	3.75	0.2566	0.6149	0.8524	0.9182
Yahoo_Health	0.3783	4.77	0.2539	0.7245	0.7483	0.9353
Yahoo_Recreation	0.6002	5.42	0.4503	0.5985	0.8215	0.8928
Yahoo_Reference	0.5188	5.01	0.3198	0.6253	0.6903	0.9626
Yahoo_Science	0.7345	14.44	0.6120	0.3688	0.7788	0.8157
Yahoo_Social	0.4297	6.36	0.2749	0.6430	0.6751	0.9080
yeast	0.2975	6.75	0.2701	0.7092	0.6437	0.8014
Yelp	0.0987	1.14	0.1070	0.9233	0.8834	0.9185

Table 87: Detailed results for PPT-c(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7881	3.04	0.2807	0.4428	0.9664	0.9505
3s-bbc1000	0.7500	3.17	0.8889	0.4153	0.8991	0.8513
3s-guardian1000	0.5484	2.45	0.7097	0.5640	0.9808	0.8915
3s-reuters1000	0.8667	2.50	0.8667	0.4017	1.0000	0.8970
bibtex	0.9108	94.25	0.8150	0.1147	0.9654	0.9481
birds	0.8974	9.49	0.5375	0.2843	0.8815	0.8204
bookmarks	0.9367	126.34	0.8300	0.0890	0.9477	0.9006
CAL500	0.7843	151.57	0.8597	0.2382	0.7963	0.8679
corel16k001	0.9601	119.72	0.8633	0.0578	0.9332	0.8824
Corel5k	0.8640	170.47	0.6649	0.1075	0.6423	0.9349
delicious	0.9894	923.03	0.9976	0.0221	0.9899	0.9923
emotions	0.3333	2.03	0.2125	0.7398	0.8341	0.8348
enron	0.4854	30.02	0.3465	0.4251	0.6697	0.7933
EukaryoteGO	0.6242	3.20	0.1366	0.5694	0.9787	0.9523
EukaryotePseAAC	0.7979	4.60	0.2154	0.4006	0.9164	0.9233
Eurlex-dc	0.9167	140.29	0.8823	0.1066	0.7513	0.9847
Eurlex-sm	0.9080	76.63	0.8750	0.1212	0.7839	0.9188
foodtruck	0.4634	3.68	0.3610	0.6590	0.7133	0.8394
genbase	0.6418	4.25	0.4295	0.5356	0.6257	0.9189
GnegativeGO	0.3929	1.12	0.3857	0.7261	0.7950	0.9308
GnegativePseAAC	0.6214	1.46	0.2357	0.5997	0.7045	0.8506
GpositivePseAAC	0.5769	1.15	0.3654	0.6314	0.7244	0.7410
HumanGO	0.7717	2.84	0.1752	0.4888	0.9660	0.9193
HumanPseAAC	0.7621	3.25	0.2029	0.4645	0.9116	0.8958
Image	0.4550	1.20	0.1883	0.7073	0.8404	0.8266
IMDB-ECC-F	0.6985	9.83	0.4078	0.4155	0.8884	0.9018
IMDB-F	0.6773	10.20	0.4213	0.4211	0.8892	0.9036
LLOG-F	0.9016	36.50	0.6631	0.1796	0.5359	0.8831
mediamill	0.9943	78.45	0.7558	0.1433	1.0000	0.9235
medical	0.6429	19.50	0.5309	0.3894	0.4788	0.7659
Music	0.3333	2.33	0.2412	0.7268	0.8344	0.8070
OHSUMED-F	0.4932	6.11	0.2896	0.5751	0.9216	0.9310
PlantGO	0.6939	2.82	0.2976	0.4961	0.9873	0.9360
PlantPseAAC	0.7653	2.84	0.3452	0.4702	0.9024	0.9036
rcv1subset1	0.8650	63.32	0.7687	0.1139	0.9406	0.7741
REUTERS-K500-EX2	0.9550	59.70	0.8242	0.1202	0.7699	0.9597
scene	0.5228	1.27	0.3963	0.6565	0.8849	0.8447
sider_CDK_ECFP4	0.1197	23.85	0.6260	0.7352	0.8854	0.9216
sider_MordredDesc	0.3239	21.17	0.1862	0.7756	1.0000	0.8302
sider_RDKit_desc	0.1056	23.99	0.6278	0.7292	0.9010	0.9339
SLASHDOT-F	0.6675	4.01	0.1539	0.5022	0.7390	0.9503
Stackex_chemistry	0.9756	113.82	0.9482	0.0461	0.8683	0.8538
Stackex_chess	0.9702	156.89	0.9512	0.0395	0.5358	0.9536
Stackex_coffee	1.0000	81.13	0.8768	0.0786	0.2602	0.8649
Stackex_cooking	0.9440	259.59	0.9295	0.0504	0.9060	0.9602
Stackex_cs	0.8777	179.18	0.8277	0.0956	0.8615	0.9067
Stackex_philosophy	0.9950	153.67	0.9820	0.0263	0.7418	0.9806
tmc2007-500	0.2594	3.92	0.1620	0.7727	0.9513	0.9629
tox21_CDK_ECFP4	0.6130	5.13	0.2992	0.5206	0.8497	0.8361
tox21_RDKit_desc	0.6644	5.16	0.3415	0.4985	0.8605	0.8413
VirusGO	0.4286	1.24	0.0595	0.7090	0.8333	0.9069
VirusPseAAC	0.6190	1.10	0.0476	0.6468	0.6904	0.8864
Water-quality	0.5566	10.64	0.6826	0.5249	0.7759	0.7260
Yahoo_Arts	0.7570	9.85	0.6715	0.3802	0.8907	0.8867
Yahoo_Business	0.1319	3.38	0.1750	0.8613	0.8276	0.9704
Yahoo_Computers	0.4924	6.47	0.5357	0.5515	0.8625	0.9398
Yahoo_Education	0.8612	9.78	0.8889	0.3149	0.8666	0.9218
Yahoo_Entertainment	0.8460	5.11	0.3287	0.3893	0.9235	0.8817
Yahoo_Health	0.5071	5.84	0.4103	0.5880	0.7849	0.9423
Yahoo_Recreation	0.8293	7.89	0.7127	0.3504	0.9058	0.8669
Yahoo_Reference	0.6389	6.14	0.3504	0.4744	0.7805	0.9277
Yahoo_Science	0.8258	13.13	0.3927	0.3169	0.8861	0.8875
Yahoo_Social	0.6246	7.00	0.1627	0.5143	0.7402	0.8842
yeast	0.2686	6.62	0.4510	0.7015	0.8812	0.8554
Yelp	0.2822	1.54	0.2942	0.8045	0.7692	0.8213

Table 88: Detailed results for PPT-c(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3553	1.10	0.0730	0.7770	0.9715	0.9704
3s-bbc1000	0.7778	2.58	0.6829	0.4640	0.6226	0.5565
3s-guardian1000	0.5484	2.10	0.4758	0.6011	0.5995	0.6599
3s-reuters1000	0.8333	2.23	0.7333	0.4381	0.5633	0.5325
bibtex	0.9176	94.12	0.8157	0.1217	0.9666	0.9505
birds	0.5641	6.10	0.3761	0.5166	0.7922	0.8666
bookmarks	0.9636	126.34	0.8331	0.1356	0.9311	0.9310
CAL500	0.6275	151.57	0.8311	0.2446	0.7926	0.8687
corel16k001	0.9906	119.71	0.8940	0.0440	0.9454	0.9038
Corel5k	0.9460	170.53	0.6657	0.0899	0.6408	0.9344
delicious	0.9956	923.03	0.9983	0.0217	0.9912	0.9943
emotions	0.3333	1.72	0.1375	0.7873	0.8389	0.8515
enron	0.6842	31.23	0.2971	0.3432	0.6396	0.7483
EukaryoteGO	0.2062	0.60	0.0106	0.8785	0.9841	0.9872
EukaryotePseAAC	0.5972	3.51	0.1846	0.5721	0.9311	0.9334
Eurlex-dc	0.9938	142.69	0.8447	0.0257	0.7263	0.9340
Eurlex-sm	0.6832	75.01	0.6705	0.2560	0.7831	0.9177
foodtruck	0.2927	4.90	0.3862	0.6819	0.6126	0.7634
genbase	0.0149	0.81	0.0299	0.9790	0.6661	0.9937
GnegativeGO	0.0643	0.16	0.0429	0.9607	0.8600	0.9859
GnegativePseAAC	0.3357	0.73	0.1393	0.7934	0.7726	0.9204
GpositivePseAAC	0.5000	0.98	0.0577	0.6747	0.9309	0.7596
HumanGO	0.2669	0.78	0.0413	0.8422	0.9657	0.9703
HumanPseAAC	0.6013	2.52	0.1635	0.5825	0.8789	0.8881
Image	0.4400	1.03	0.0708	0.7308	0.8085	0.7925
IMDB-ECC-F	0.6811	9.37	0.3716	0.4400	0.9199	0.9109
IMDB-F	0.6835	10.24	0.4352	0.4254	0.9275	0.9451
LLOG-F	0.9590	36.16	0.6510	0.1548	0.5365	0.9086
mediamill	0.7314	78.47	0.7654	0.1670	0.9153	0.9014
medical	0.3367	15.38	0.2330	0.6198	0.4940	0.7890
Music	0.3000	1.92	0.1546	0.7898	0.8524	0.8505
OHSUMED-F	0.4307	5.43	0.2234	0.6326	0.9259	0.9317
PlantGO	0.1771	0.43	0.0104	0.8877	0.9603	0.9599
PlantPseAAC	0.6122	2.31	0.1820	0.5750	0.8448	0.8626
rcv1subset1	0.9000	63.64	0.7146	0.0947	0.8255	0.8365
REUTERS-K500-EX2	0.8935	58.77	0.7064	0.1842	0.7382	0.9220
scene	0.3734	0.69	0.1681	0.7784	0.9230	0.9112
sider_CDK_ECFP4	0.2394	21.36	0.2492	0.7680	0.5794	0.7711
sider_MordredDesc	0.1127	23.16	0.5183	0.7285	0.7087	0.8069
sider_RDKit_desc	0.0986	24.48	0.6622	0.7060	0.8902	0.9288
SLASHDOT-F	0.8069	8.10	0.5064	0.3322	0.5737	0.7854
Stackex_chemistry	0.9899	113.91	0.9362	0.0397	0.8523	0.8681
Stackex_chess	1.0000	156.92	0.9256	0.0316	0.5275	0.9275
Stackex_coffee	1.0000	81.57	0.8986	0.0507	0.2431	0.8341
Stackex_cooking	0.9923	259.66	0.9234	0.0303	0.9028	0.9516
Stackex_cs	0.9599	179.16	0.8324	0.0649	0.8535	0.9034
Stackex_philosophy	0.9975	153.63	0.9385	0.0229	0.6971	0.8948
tmc2007-500	0.2416	3.87	0.1334	0.7904	0.9510	0.9638
tox21_CDK_ECFP4	0.5068	4.73	0.2617	0.5845	0.7902	0.7915
tox21_RDKit_desc	0.5514	4.96	0.2566	0.5597	0.7900	0.7860
VirusGO	0.1429	0.67	0.0556	0.8929	0.7115	0.9085
VirusPseAAC	0.5714	1.14	0.0476	0.6548	0.6284	0.8426
Water-quality	0.5472	11.08	0.7096	0.4826	0.7821	0.6521
Yahoo_Arts	0.5407	7.05	0.3935	0.5550	0.8608	0.8974
Yahoo_Business	0.5134	4.58	0.1476	0.6147	0.6417	0.9048
Yahoo_Computers	0.3968	4.60	0.3306	0.6779	0.8357	0.9431
Yahoo_Education	0.5511	6.08	0.3201	0.5765	0.8375	0.9346
Yahoo_Entertainment	0.4336	3.11	0.1657	0.6717	0.9067	0.9107
Yahoo_Health	0.4093	4.94	0.2730	0.6736	0.7841	0.9486
Yahoo_Recreation	0.5027	4.55	0.3598	0.6135	0.9013	0.8955
Yahoo_Reference	0.4421	4.06	0.1946	0.6432	0.7590	0.9503
Yahoo_Science	0.6034	10.48	0.3048	0.4911	0.8697	0.9078
Yahoo_Social	0.3738	4.65	0.1384	0.7127	0.8290	0.9433
yeast	0.2149	6.16	0.2341	0.7689	0.7721	0.8513
Yelp	0.2622	1.43	0.3120	0.8267	0.8226	0.8345

Table 89: Detailed results for PPT-c(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5539	4.26	0.3084	0.5595	0.9275	0.9082
3s-bbc1000	0.6944	2.67	0.6181	0.4828	0.6404	0.6031
3s-guardian1000	0.6774	2.03	0.4597	0.5608	0.6601	0.6789
3s-reuters1000	0.7667	2.13	0.6500	0.4817	0.7661	0.6736
bibtex	0.8689	94.63	0.8064	0.1370	0.9447	0.9085
birds	0.6154	5.64	0.2933	0.5091	0.7826	0.8771
bookmarks	0.9021	126.32	0.8460	0.1084	0.9517	0.9217
CAL500	0.8039	151.57	0.8704	0.2280	0.7868	0.8653
corel16k001	0.9891	119.75	0.9040	0.0416	0.9496	0.9063
Corel5k	0.9220	170.58	0.6887	0.0847	0.6493	0.9335
delicious	0.9963	923.03	0.9971	0.0217	0.9887	0.9910
emotions	0.3667	2.15	0.3083	0.7418	0.7605	0.7511
enron	0.5731	31.23	0.2804	0.3429	0.6193	0.7379
EukaryoteGO	0.2049	1.45	0.0800	0.8527	0.9851	0.9765
EukaryotePseAAC	0.7156	5.01	0.3114	0.4279	0.8972	0.9021
Eurlex-dc	0.8733	139.78	0.8489	0.1409	0.7511	0.9813
Eurlex-sm	0.7964	75.03	0.6995	0.2156	0.7891	0.9315
foodtruck	0.3902	3.07	0.3753	0.7172	0.6708	0.8231
genbase	0.0000	0.49	0.0075	0.9932	0.6667	0.9957
GnegativeGO	0.0214	0.14	0.0179	0.9821	0.8619	0.9929
GnegativePseAAC	0.5143	1.41	0.3054	0.6571	0.7987	0.8475
GpositivePseAAC	0.4231	0.75	0.1154	0.7388	0.9075	0.8357
HumanGO	0.2894	1.37	0.0923	0.8008	0.9682	0.9511
HumanPseAAC	0.6977	3.80	0.3192	0.4813	0.8387	0.8603
Image	0.5200	1.45	0.2421	0.6591	0.7906	0.7740
IMDB-ECC-F	0.6909	9.88	0.3988	0.4206	0.9000	0.8980
IMDB-F	0.6914	10.04	0.4031	0.4212	0.8954	0.8997
LLOG-F	0.9426	38.56	0.7705	0.1188	0.5083	0.8446
mediamill	0.8451	78.46	0.7369	0.1385	0.8942	0.8510
medical	0.5714	17.82	0.3129	0.4526	0.5057	0.7331
Music	0.4500	2.52	0.2894	0.6784	0.7780	0.7583
OHSUMED-F	0.6023	8.68	0.4106	0.4656	0.8599	0.8754
PlantGO	0.2292	0.81	0.0781	0.8545	0.9842	0.9629
PlantPseAAC	0.7245	3.14	0.2500	0.4787	0.8610	0.8296
rcv1subset1	0.8750	64.03	0.7471	0.0976	0.7975	0.7507
REUTERS-K500-EX2	0.8746	60.20	0.7772	0.1658	0.7327	0.9260
scene	0.3859	1.46	0.2427	0.7124	0.8462	0.8182
sider_CDK_ECFP4	0.1408	20.55	0.2880	0.7914	0.5850	0.7662
sider_MordredDesc	0.1620	20.50	0.2642	0.7934	0.6020	0.7844
sider_RDKit_desc	0.1972	20.54	0.2548	0.7860	0.5879	0.7774
SLASHDOT-F	0.5741	5.43	0.2601	0.5445	0.6997	0.9069
Stackex_chemistry	0.9813	114.02	0.9028	0.0426	0.8663	0.8848
Stackex_chess	0.9940	156.69	0.9025	0.0335	0.5292	0.9072
Stackex_coffee	0.9130	81.57	0.8623	0.0617	0.2425	0.8106
Stackex_cooking	0.9729	259.64	0.9295	0.0361	0.8969	0.9529
Stackex_cs	0.9415	179.31	0.8320	0.0670	0.8459	0.9027
Stackex_philosophy	0.9724	153.56	0.9423	0.0372	0.7116	0.9228
tmc2007-500	0.4010	5.81	0.2258	0.6409	0.8614	0.9088
tox21_CDK_ECFP4	0.5925	5.29	0.3830	0.5210	0.7184	0.7389
tox21_RDKit_desc	0.5890	5.35	0.3836	0.5101	0.6980	0.7233
VirusGO	0.1429	0.43	0.0000	0.9206	0.8068	0.9636
VirusPseAAC	0.5714	1.24	0.0000	0.6389	0.5544	0.8058
Water-quality	0.3491	10.03	0.4382	0.6345	0.6814	0.6998
Yahoo_Arts	0.6782	8.55	0.4422	0.4487	0.8140	0.8640
Yahoo_Business	0.1275	3.02	0.1622	0.8679	0.7764	0.9664
Yahoo_Computers	0.4691	6.00	0.4413	0.6063	0.8111	0.9299
Yahoo_Education	0.7032	7.80	0.5599	0.4339	0.8019	0.9038
Yahoo_Entertainment	0.4965	3.79	0.2351	0.6149	0.8931	0.8982
Yahoo_Health	0.4289	4.91	0.2623	0.6505	0.7789	0.9482
Yahoo_Recreation	0.7108	6.08	0.4378	0.4682	0.8554	0.8688
Yahoo_Reference	0.5243	5.06	0.2879	0.5773	0.7409	0.9376
Yahoo_Science	0.8056	13.23	0.4115	0.3103	0.8053	0.8507
Yahoo_Social	0.4530	6.14	0.1299	0.6405	0.7183	0.8652
yeast	0.3554	7.56	0.3244	0.6689	0.6491	0.7669
Yelp	0.3539	1.54	0.4017	0.7822	0.7634	0.8083

Table 90: Detailed results for PPT-c(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3431	1.11	0.0960	0.7959	0.9721	0.9605
3s-bbc1000	0.7222	2.06	0.4931	0.5222	0.7088	0.6989
3s-guardian1000	0.6452	2.19	0.4597	0.5503	0.5865	0.6602
3s-reuters1000	0.8333	2.20	0.7000	0.4542	0.6483	0.6324
bibtex	0.8649	94.05	0.7761	0.1510	0.9545	0.9164
birds	0.4872	5.49	0.2829	0.5979	0.7856	0.8831
bookmarks	0.9420	126.34	0.8345	0.1219	0.9605	0.9214
CAL500	0.7843	151.57	0.8595	0.2313	0.7880	0.8654
corel16k001	0.9758	119.75	0.9269	0.0471	0.9349	0.9103
Corel5k	0.9000	170.30	0.6654	0.1028	0.6385	0.9343
delicious	0.9963	923.03	0.9987	0.0215	0.9942	0.9953
emotions	0.2667	2.18	0.2069	0.7638	0.7701	0.7892
enron	0.5088	30.13	0.2846	0.4094	0.6444	0.7556
EukaryoteGO	0.2008	0.95	0.0368	0.8711	0.9802	0.9808
EukaryotePseAAC	0.6255	4.35	0.2541	0.5270	0.8906	0.9145
Eurlex-dc	0.9974	140.70	0.8952	0.0638	0.7591	0.9886
Eurlex-sm	0.7989	75.03	0.6881	0.2604	0.8343	0.9327
foodtruck	0.3171	3.32	0.2531	0.7356	0.7408	0.8589
genbase	0.0000	0.49	0.0075	0.9932	0.6649	0.9951
GnegativeGO	0.0214	0.11	0.0054	0.9851	0.8589	0.9885
GnegativePseAAC	0.5429	1.26	0.2304	0.6601	0.6947	0.8393
GpositivePseAAC	0.5577	0.98	0.0385	0.6538	0.8223	0.7202
HumanGO	0.3569	1.10	0.0484	0.7787	0.9513	0.9530
HumanPseAAC	0.7074	3.57	0.2577	0.4822	0.8180	0.8473
Image	0.5100	1.30	0.1254	0.6764	0.7304	0.7236
IMDB-ECC-F	0.6702	9.91	0.4041	0.4541	0.8793	0.9394
IMDB-F	0.7277	10.04	0.4134	0.4675	0.9439	0.8788
LLOG-F	0.9344	36.84	0.6699	0.1517	0.5034	0.8240
mediamill	0.8690	78.47	0.7129	0.1293	0.9385	0.8499
medical	0.5714	17.49	0.2891	0.4589	0.5056	0.7267
Music	0.4167	2.22	0.1815	0.7250	0.7658	0.7763
OHSUMED-F	0.7552	11.16	0.5417	0.3436	0.9666	0.8644
PlantGO	0.2857	0.66	0.0306	0.8335	0.9638	0.9615
PlantPseAAC	0.7755	3.37	0.3095	0.4245	0.7398	0.7683
rcv1subset1	0.8756	64.02	0.7305	0.0983	0.8108	0.7860
REUTERS-K500-EX2	0.8633	59.04	0.7298	0.1834	0.7253	0.9110
scene	0.3776	0.80	0.1691	0.7682	0.8581	0.8571
sider_CDK_ECFP4	0.1690	21.98	0.4366	0.7564	0.6371	0.7803
sider_MordredDesc	0.1197	21.72	0.4112	0.7593	0.6082	0.7650
sider_RDKit_desc	0.1549	21.88	0.4292	0.7625	0.6060	0.7602
SLASHDOT-F	0.4802	3.84	0.1757	0.6415	0.6941	0.9294
Stackex_chemistry	0.9713	113.79	0.9062	0.0515	0.8657	0.8722
Stackex_chess	0.9881	156.74	0.9083	0.0355	0.5268	0.9128
Stackex_coffee	1.0000	81.43	0.8478	0.0470	0.2497	0.8523
Stackex_cooking	0.9681	259.55	0.9185	0.0416	0.9021	0.9447
Stackex_cs	0.9318	179.28	0.8333	0.0732	0.8529	0.9041
Stackex_philosophy	0.9673	153.47	0.9360	0.0401	0.7151	0.9103
tmc2007-500	0.4435	5.83	0.2659	0.6416	0.9000	0.9164
tox21_CDK_ECFP4	0.5411	4.96	0.2960	0.5586	0.7589	0.7740
tox21_RDKit_desc	0.5479	4.87	0.2761	0.5586	0.7684	0.7878
VirusGO	0.0952	0.43	0.0476	0.9325	0.7795	0.9521
VirusPseAAC	0.5238	1.10	0.0000	0.6667	0.5896	0.8248
Water-quality	0.3491	9.65	0.4126	0.6448	0.7118	0.7303
Yahoo_Arts	0.7597	8.64	0.4314	0.3967	0.9411	0.8767
Yahoo_Business	0.1523	3.04	0.1660	0.8901	0.7579	0.9960
Yahoo_Computers	0.4577	6.04	0.4331	0.5943	0.8590	0.9748
Yahoo_Education	0.6818	7.82	0.5933	0.4430	0.8502	0.8797
Yahoo_Entertainment	0.5113	3.79	0.2808	0.6499	0.9303	0.9415
Yahoo_Health	0.4749	4.95	0.2528	0.6376	0.7771	0.9591
Yahoo_Recreation	0.6913	6.11	0.4236	0.4862	0.8946	0.8442
Yahoo_Reference	0.5199	5.05	0.3164	0.5596	0.7671	0.9378
Yahoo_Science	0.8865	13.49	0.4920	0.2545	0.9267	0.8455
Yahoo_Social	0.4874	6.17	0.1496	0.6330	0.7053	0.8847
yeast	0.3017	6.82	0.2828	0.7079	0.6826	0.8076
Yelp	0.3111	1.48	0.3248	0.8053	0.7870	0.8301

Table 91: Detailed results for EPS(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3736	1.95	0.1276	0.7310	0.9578	0.9596
3s-bbc1000	0.8611	2.72	0.7454	0.4149	0.5279	0.5296
3s-guardian1000	0.7742	2.42	0.4597	0.4809	0.5632	0.6337
3s-reuters1000	0.7333	2.50	0.6833	0.4614	0.5480	0.5154
bibtex	0.8811	94.33	0.7755	0.1428	0.9495	0.9086
birds	0.4872	5.74	0.2651	0.5698	0.7593	0.8556
bookmarks	0.9034	126.19	0.9006	0.1091	0.9922	0.9885
CAL500	0.7255	151.57	0.8572	0.2363	0.8908	0.8713
corel16k001	0.9906	119.76	0.8653	0.0435	0.9194	0.8673
Corel5k	0.9420	170.22	0.6286	0.0842	0.6399	0.9314
delicious	0.9963	923.03	0.9958	0.0217	0.9879	0.9895
emotions	0.2167	1.53	0.1611	0.8380	0.8556	0.8798
enron	0.4035	29.88	0.2479	0.4541	0.6617	0.7738
EukaryoteGO	0.1763	0.87	0.0390	0.8880	0.9909	0.9941
EukaryotePseAAC	0.5882	2.94	0.1009	0.5913	0.8716	0.9173
Eurlex-dc	0.8660	139.32	0.8200	0.1535	0.7563	0.9858
Eurlex-sm	0.6413	74.52	0.6586	0.2825	0.7928	0.9218
foodtruck	0.2683	2.73	0.3497	0.7809	0.7304	0.8483
genbase	0.0000	0.49	0.0075	0.9932	0.6667	0.9999
GnegativeGO	0.0143	0.11	0.0179	0.9869	0.8742	0.9993
GnegativePseAAC	0.2643	0.68	0.1089	0.8326	0.8021	0.9534
GpositivePseAAC	0.2885	0.50	0.1538	0.8221	0.8900	0.8883
HumanGO	0.2090	0.93	0.0732	0.8600	0.9771	0.9841
HumanPseAAC	0.5949	2.61	0.1089	0.5780	0.7870	0.8522
Image	0.2700	0.82	0.0979	0.8236	0.8716	0.8731
IMDB-ECC-F	0.6527	9.14	0.3149	0.4545	0.8310	0.8673
IMDB-F	0.6565	9.25	0.3125	0.4541	0.8392	0.8718
LLOG-F	0.9508	36.74	0.5682	0.1623	0.4777	0.7609
mediamill	0.7504	78.44	0.7188	0.1761	0.8779	0.8126
medical	0.3469	15.63	0.3231	0.6290	0.5279	0.9096
Music	0.2333	1.90	0.2514	0.8026	0.8726	0.8736
OHSUMED-F	0.5197	7.02	0.2823	0.5390	0.8249	0.8599
PlantGO	0.2245	0.87	0.0765	0.8547	0.9820	0.9841
PlantPseAAC	0.6327	2.19	0.1607	0.5813	0.7651	0.8304
rcv1subset1	0.9017	63.27	0.6636	0.0946	0.8405	0.8223
REUTERS-K500-EX2	0.8717	59.22	0.7346	0.1723	0.7387	0.9214
scene	0.1867	0.45	0.0716	0.8844	0.9485	0.9545
sider_CDK_ECFP4	0.0986	19.85	0.1703	0.8293	0.6087	0.8092
sider_MordredDesc	0.1056	19.58	0.1515	0.8304	0.5890	0.8047
sider_RDKit_desc	0.0986	20.13	0.1602	0.8262	0.5815	0.7975
SLASHDOT-F	0.5251	4.95	0.2474	0.5745	0.7002	0.9339
Stackex_chemistry	0.9871	113.95	0.9204	0.0416	0.8684	0.9110
Stackex_chess	1.0000	156.77	0.9076	0.0359	0.5297	0.9268
Stackex_coffee	1.0000	81.22	0.8478	0.0590	0.2525	0.8673
Stackex_cooking	0.9671	259.56	0.9365	0.0422	0.9097	0.9709
Stackex_cs	0.9437	179.34	0.8262	0.0669	0.8569	0.9132
Stackex_philosophy	0.9749	153.51	0.9512	0.0378	0.7268	0.9549
tmc2007-500	0.3101	4.39	0.1482	0.7265	0.8996	0.9320
tox21_CDK_ECFP4	0.5034	4.37	0.2100	0.5997	0.7360	0.7753
tox21_RDKit_desc	0.4247	4.07	0.1376	0.6380	0.7285	0.7799
VirusGO	0.0952	0.62	0.0714	0.9167	0.8132	0.9830
VirusPseAAC	0.2857	0.67	0.0000	0.8230	0.6960	0.9156
Water-quality	0.2170	8.80	0.2439	0.7095	0.6902	0.7245
Yahoo_Arts	0.5354	6.60	0.3597	0.5583	0.8125	0.8754
Yahoo_Business	0.1043	2.45	0.1310	0.8966	0.8106	0.9795
Yahoo_Computers	0.4088	4.83	0.3551	0.6609	0.7985	0.9295
Yahoo_Education	0.5777	5.57	0.3451	0.5533	0.7820	0.9159
Yahoo_Entertainment	0.4368	3.01	0.1510	0.6687	0.9004	0.9187
Yahoo_Health	0.3062	3.89	0.1981	0.7522	0.7865	0.9624
Yahoo_Recreation	0.4871	4.31	0.3716	0.6196	0.8766	0.8895
Yahoo_Reference	0.4085	3.47	0.1700	0.6850	0.7493	0.9549
Yahoo_Science	0.6268	10.40	0.2638	0.4726	0.7782	0.8515
Yahoo_Social	0.3226	4.85	0.1206	0.7337	0.8188	0.9398
yeast	0.2149	6.12	0.2457	0.7676	0.7316	0.8446
Yelp	0.1097	1.17	0.1266	0.9159	0.8754	0.9102

Table 92: Detailed results for EPS(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3269	2.50	0.2163	0.7481	0.9852	0.9842
3s-bbc1000	0.7222	2.78	0.6991	0.4782	0.8154	0.7199
3s-guardian1000	0.5806	2.06	0.5484	0.5874	0.7713	0.7751
3s-reuters1000	0.8667	2.17	0.8333	0.4286	0.8261	0.7245
bibtex	0.8514	94.56	0.8667	0.1455	0.9794	0.9770
birds	0.5897	6.74	0.4261	0.4931	0.8263	0.8921
bookmarks	0.9259	126.17	0.8986	0.0904	0.9896	0.9838
CAL500	0.7843	151.57	0.8314	0.2394	0.7998	0.8683
corel16k001	0.9528	119.71	0.9176	0.0550	0.9514	0.9330
Corel5k	0.9100	170.07	0.7848	0.1068	0.6482	0.9545
delicious	0.9882	923.03	0.9977	0.0220	0.9907	0.9933
emotions	0.2667	1.62	0.1639	0.8115	0.8531	0.8690
enron	0.4620	30.68	0.4908	0.4100	0.7173	0.8631
EukaryoteGO	0.3990	4.35	0.3357	0.6553	0.9879	0.9856
EukaryotePseAAC	0.7465	6.21	0.4528	0.4246	0.9334	0.9343
Eurlex-dc	0.8996	140.34	0.8979	0.1143	0.7589	0.9964
Eurlex-sm	0.8997	76.86	0.9155	0.1245	0.8091	0.9656
foodtruck	0.4146	3.29	0.3798	0.7029	0.7688	0.8764
genbase	0.7463	6.19	0.6194	0.4195	0.6667	0.9748
GnegativeGO	0.2357	0.59	0.1714	0.8524	0.8720	0.9872
GnegativePseAAC	0.2143	0.66	0.1179	0.8519	0.8435	0.9787
GpositivePseAAC	0.2885	0.52	0.1154	0.8253	0.9379	0.9498
HumanGO	0.4630	2.86	0.3466	0.6444	0.9770	0.9683
HumanPseAAC	0.6624	3.85	0.4260	0.5060	0.9088	0.9171
Image	0.2750	0.90	0.1321	0.8136	0.9009	0.9007
IMDB-ECC-F	0.6019	9.09	0.2239	0.4459	0.7933	0.8165
IMDB-F	0.6737	9.26	0.2919	0.4430	0.8565	0.8893
LLOG-F	0.9262	38.52	0.8511	0.1223	0.5562	0.9414
mediamill	0.7678	78.45	0.7405	0.1582	0.8999	0.8248
medical	0.7449	19.98	0.5765	0.3561	0.5468	0.9744
Music	0.2500	2.10	0.2037	0.7879	0.8777	0.8704
OHSUMED-F	0.4264	7.73	0.3922	0.5813	0.9526	0.9559
PlantGO	0.6429	3.96	0.5459	0.4828	0.9826	0.9461
PlantPseAAC	0.6224	2.62	0.3844	0.5498	0.9028	0.9015
rcv1subset1	0.8940	63.25	0.6865	0.0919	0.8601	0.8424
REUTERS-K500-EX2	0.9667	60.70	0.9471	0.0847	0.7761	0.9889
scene	0.2116	0.71	0.1307	0.8548	0.9615	0.9676
sider_CDK_ECFP4	0.0915	23.49	0.5009	0.7676	0.8173	0.9021
sider_MordredDesc	0.3028	20.82	0.1638	0.7818	0.8697	0.8047
sider_RDKit_desc	0.1056	23.44	0.5113	0.7652	0.8299	0.9088
SLASHDOT-F	0.4829	6.11	0.3619	0.5797	0.7510	0.9680
Stackex_chemistry	0.9828	113.92	0.9777	0.0405	0.9010	0.9744
Stackex_chess	0.9762	156.97	0.9802	0.0318	0.5439	0.9818
Stackex_coffee	1.0000	81.74	1.0000	0.0344	0.2590	0.9798
Stackex_cooking	0.9382	259.63	0.9592	0.0461	0.9143	0.9850
Stackex_cs	0.8539	179.16	0.9078	0.0906	0.8706	0.9603
Stackex_philosophy	0.9950	153.68	0.9890	0.0241	0.7425	0.9880
tmc2007-500	0.2664	4.99	0.2537	0.7457	0.9655	0.9736
tox21_CDK_ECFP4	0.5377	5.52	0.4623	0.5406	0.8782	0.8811
tox21_RDKit_desc	0.5068	5.37	0.4455	0.5527	0.8810	0.8842
VirusGO	0.2381	1.33	0.2302	0.7899	0.8106	0.9307
VirusPseAAC	0.2381	0.81	0.1667	0.8302	0.7431	0.9249
Water-quality	0.3491	9.77	0.4024	0.6544	0.7533	0.7617
Yahoo_Arts	0.5295	6.60	0.3578	0.5401	0.8294	0.8618
Yahoo_Business	0.1301	4.05	0.2235	0.8446	0.8432	0.9883
Yahoo_Computers	0.3664	4.77	0.3392	0.6771	0.7925	0.9047
Yahoo_Education	0.5539	5.59	0.3340	0.5621	0.7750	0.8997
Yahoo_Entertainment	0.6174	5.17	0.5332	0.5011	0.9639	0.9399
Yahoo_Health	0.3074	3.90	0.2115	0.7677	0.7782	0.9606
Yahoo_Recreation	0.4251	4.29	0.2929	0.5706	0.8186	0.8374
Yahoo_Reference	0.4107	3.45	0.1569	0.6805	0.7290	0.9718
Yahoo_Science	0.5977	10.37	0.1723	0.4650	0.7527	0.7977
Yahoo_Social	0.2501	4.75	0.1072	0.7393	0.8063	0.9205
yeast	0.3719	6.64	0.3553	0.6844	0.8748	0.8596
Yelp	0.2193	1.44	0.2112	0.8449	0.8397	0.8719

Table 93: Detailed results for RAkELo(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4451	2.31	0.2093	0.6916	0.9639	0.9619
3s-bbc1000	0.6111	2.75	0.7130	0.5111	0.9278	0.9235
3s-guardian1000	0.6129	2.45	0.6452	0.5371	0.9353	0.9417
3s-reuters1000	0.8667	2.60	0.8000	0.3967	0.9031	0.8786
bibtex	0.7365	46.95	0.3137	0.3430	0.9510	0.9570
birds	0.5897	5.85	0.2739	0.4933	0.7775	0.8714
bookmarks	0.66453	58.6521	0.2081	0.3640	0.7968	0.8071
CAL500	0.4706	148.33	0.4316	0.3752	0.6573	0.8086
corel16k001	0.7814	97.74	0.7033	0.1998	0.9813	0.9815
Corel5k	0.8219	163.51	0.8663	0.1867	0.6566	0.9855
delicious	0.5696	909.51	0.8872	0.1309	0.9877	1.0000
emotions	0.2333	1.83	0.2194	0.8089	0.8544	0.8741
enron	0.5263	24.23	0.3350	0.4679	0.7085	0.8661
EukaryoteGO	0.4878	5.37	0.4672	0.5789	0.9887	0.9910
EukaryotePseAAC	0.8314	6.99	0.4225	0.3405	0.8421	0.8405
Eurlex-dc	0.7662	76.95	0.4559	0.3144	0.7507	0.9889
Eurlex-sm	0.6589	44.30	0.4225	0.3538	0.8047	0.9671
foodtruck	0.3902	4.00	0.3818	0.6848	0.7806	0.9019
genbase	0.6269	5.96	0.6915	0.4802	0.6667	1.0000
GnegativeGO	0.1786	0.78	0.1929	0.8598	0.8737	0.9969
GnegativePseAAC	0.2000	0.67	0.1036	0.8607	0.8342	0.9716
GpositivePseAAC	0.3077	0.73	0.2308	0.7901	0.9521	0.9545
HumanGO	0.5563	4.07	0.5370	0.5501	0.9767	0.9806
HumanPseAAC	0.7363	4.17	0.4502	0.4533	0.8304	0.8516
Image	0.3150	0.95	0.1633	0.7933	0.9006	0.8990
IMDB-ECC-F	0.7558	13.41	0.7487	0.3094	0.9272	0.9343
IMDB-F	0.6284	11.07	0.4478	0.3550	0.8559	0.8616
LLOG-F	0.8852	26.81	0.6482	0.2009	0.5560	0.9437
mediamill	0.8914	54.32	0.3342	0.2260	0.7836	0.8237
medical	0.4490	17.43	0.4940	0.5138	0.5474	0.9924
Music	0.3000	2.15	0.3042	0.7612	0.8741	0.8696
OHSUMED-F	0.4932	6.84	0.3020	0.5780	0.9220	0.9319
PlantGO	0.6224	3.98	0.6020	0.4933	0.9794	0.9748
PlantPseAAC	0.6429	2.54	0.3810	0.5470	0.8896	0.8987
rcv1subset1	0.8400	62.74	0.9166	0.1554	0.9389	0.9985
REUTERS-K500-EX2	0.6400	31.03	0.5204	0.4187	0.7760	0.9900
scene	0.2075	0.59	0.0996	0.8683	0.9533	0.9598
sider_CDK_ECFP4	0.2817	21.98	0.3018	0.7688	0.6954	0.8084
sider_MordredDesc	0.4718	23.56	0.4884	0.6343	0.6079	0.6243
sider_RDKit_desc	0.5141	22.91	0.4690	0.6400	0.6092	0.6429
SLASHDOT-F	0.4222	6.35	0.4019	0.6064	0.7607	0.9885
Stackex_chemistry	0.7256	87.77	0.6803	0.2394	0.8968	0.9788
Stackex_chess	0.7321	134.60	0.7629	0.1859	0.5342	0.9818
Stackex_coffee	1.0000	81.74	0.9493	0.0451	0.2571	0.9927
Stackex_cooking	0.7179	207.76	0.6607	0.2302	0.9022	0.9804
Stackex_cs	0.5591	133.87	0.5773	0.3728	0.8837	0.9999
Stackex_philosophy	0.6935	124.25	0.6804	0.2422	0.7202	0.9698
tmc2007-500	0.4245	4.39	0.2298	0.6751	0.9327	0.9440
tox21_CDK_ECFP4	0.5719	5.40	0.4227	0.5295	0.8371	0.8515
tox21_RDKit_desc	0.6575	5.45	0.3182	0.4681	0.7128	0.7274
VirusGO	0.2381	1.24	0.2937	0.7963	0.8069	0.9596
VirusPseAAC	0.1905	0.90	0.2143	0.8381	0.7689	0.9515
Water-quality	0.4623	9.66	0.4124	0.6279	0.7350	0.7523
Yahoo_Arts	0.5968	12.00	0.6749	0.4180	0.9556	0.9938
Yahoo_Business	0.1203	3.86	0.2092	0.8540	0.8572	0.9965
Yahoo_Computers	0.4627	8.26	0.5734	0.5208	0.9016	0.9915
Yahoo_Education	0.6758	9.86	0.7042	0.4379	0.8962	0.9852
Yahoo_Entertainment	0.6724	5.31	0.6728	0.4620	0.9835	0.9695
Yahoo_Health	0.4549	7.36	0.4612	0.6089	0.8314	0.9868
Yahoo_Recreation	0.2762	4.11	0.2199	0.7319	0.9628	0.9210
Yahoo_Reference	0.5679	7.35	0.6370	0.5056	0.8136	0.9934
Yahoo_Science	0.8818	17.63	0.8979	0.2225	0.9743	0.9994
Yahoo_Social	0.2761	4.45	0.1380	0.7108	0.8877	0.9812
yeast	0.3512	7.24	0.2853	0.6899	0.7544	0.8244
Yelp	0.2223	1.45	0.2165	0.8425	0.8607	0.8858

Table 94: Detailed results for RAkELo(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9502	9.59	0.9512	0.1805	1.0000	1.0000
3s-bbc1000	0.6389	2.69	0.7130	0.5079	0.9532	0.9455
3s-guardian1000	0.5806	2.45	0.5968	0.5371	0.9204	0.9303
3s-reuters1000	0.8000	2.57	0.7167	0.4256	0.8259	0.8163
bibtex	0.9905	95.55	0.9986	0.0437	1.0000	1.0000
birds	0.3590	7.28	0.5145	0.5719	0.8732	0.9790
bookmarks	0.5809	57.0521	0.2039	0.4008	0.8187	0.8377
CAL500	0.3922	151.12	0.6862	0.4250	0.8464	0.9633
corel16k001	0.9935	119.69	1.0000	0.0348	1.0000	1.0000
Corel5k	0.8260	163.54	0.8929	0.1493	0.6981	0.9985
delicious	0.5736	909.53	0.8862	0.1376	1.0000	1.0000
emotions	0.2667	1.72	0.1931	0.8161	0.9135	0.9143
enron	0.2105	27.57	0.4319	0.5811	0.8315	0.9869
EukaryoteGO	0.6662	7.51	0.7088	0.3828	0.9989	0.9972
EukaryotePseAAC	0.7220	8.08	0.7218	0.3682	0.9876	0.9888
Eurlex-dc	0.7698	116.99	0.7965	0.2225	0.7597	0.9999
Eurlex-sm	0.7121	71.28	0.9512	0.2044	0.8308	0.9999
foodtruck	0.2439	4.39	0.4419	0.7289	0.8760	0.9691
genbase	0.0149	0.22	0.0000	0.9925	0.6667	0.9999
GnegativeGO	0.0429	0.21	0.0286	0.9685	0.8745	0.9992
GnegativePseAAC	0.2857	1.11	0.2393	0.7919	0.8524	0.9814
GpositivePseAAC	0.2308	0.50	0.1731	0.8478	0.9926	0.9793
HumanGO	0.3408	2.19	0.2886	0.7315	0.9852	0.9854
HumanPseAAC	0.6174	4.10	0.5938	0.5051	0.9704	0.9650
Image	0.3050	0.97	0.1613	0.7951	0.8951	0.8965
IMDB-ECC-F	0.8460	14.87	0.9241	0.2248	0.9935	0.9942
IMDB-F	0.6393	11.10	0.4492	0.4285	0.8170	0.8866
LLOG-F	0.9836	38.84	1.0000	0.0734	0.6000	1.0000
mediamill	0.2145	59.08	0.4624	0.5366	0.9904	0.9951
medical	0.1429	6.26	0.1446	0.8419	0.5540	0.9985
Music	0.2833	2.02	0.2704	0.7954	0.9320	0.9253
OHSUMED-F	0.7006	12.17	0.8151	0.3103	0.9955	0.9950
PlantGO	0.2188	1.28	0.1701	0.8308	0.9928	0.9902
PlantPseAAC	0.7245	3.94	0.7296	0.4260	0.9803	0.9788
rcv1subset1	0.9750	64.54	1.0000	0.0894	0.9406	1.0000
REUTERS-K500-EX2	0.8711	53.55	0.8945	0.1618	0.7864	0.9999
scene	0.1743	0.75	0.1452	0.8667	0.9746	0.9778
sider_CDK_ECFP4	0.3451	19.25	0.2086	0.7840	0.5934	0.7765
sider_MordredDesc	0.4014	19.56	0.2245	0.7677	0.5899	0.7769
sider_RDKit_desc	0.3873	19.80	0.2392	0.7668	0.6019	0.7671
SLASHDOT-F	0.9630	13.25	0.9788	0.1199	0.7727	1.0000
Stackex_chemistry	0.8905	111.16	0.9696	0.0808	0.9188	0.9986
Stackex_chess	0.9940	156.94	1.0000	0.0247	0.5507	1.0000
Stackex_coffee	0.7826	76.52	0.8623	0.1631	0.2596	0.9977
Stackex_cooking	0.9932	259.74	0.9995	0.0206	0.9250	1.0000
Stackex_cs	0.5274	133.86	0.5648	0.3795	0.8895	0.9703
Stackex_philosophy	0.9899	153.63	0.9992	0.0230	0.7511	1.0000
tmc2007-500	0.3350	6.58	0.4165	0.6461	0.9795	0.9815
tox21_CDK_ECFP4	0.5616	5.48	0.5341	0.5185	0.9090	0.9090
tox21_RDKit_desc	0.4589	5.50	0.5441	0.5619	0.9196	0.9227
VirusGO	0.0476	0.33	0.0476	0.9643	0.8191	0.9933
VirusPseAAC	0.2857	0.76	0.1667	0.8111	0.7647	0.9434
Water-quality	0.1981	9.48	0.3971	0.7246	0.8279	0.8430
Yahoo_Arts	0.7637	15.36	0.8598	0.2654	0.9615	1.0000
Yahoo_Business	0.1319	4.00	0.2286	0.8462	0.8662	0.9978
Yahoo_Computers	0.4466	8.44	0.5679	0.5241	0.9025	0.9914
Yahoo_Education	0.7847	11.73	0.8318	0.3440	0.9074	0.9985
Yahoo_Entertainment	0.6536	5.20	0.7108	0.4668	0.9956	0.9938
Yahoo_Health	0.4788	9.83	0.5347	0.5410	0.8382	0.9920
Yahoo_Recreation	0.8168	9.83	0.8635	0.3052	0.9999	0.9999
Yahoo_Reference	0.5405	7.08	0.5552	0.5315	0.8132	0.9940
Yahoo_Science	0.8212	17.23	0.8580	0.2557	0.9743	0.9992
Yahoo_Social	0.5932	11.05	0.6197	0.4524	0.9186	0.9940
yeast	0.2149	6.18	0.2637	0.7775	0.8502	0.9040
Yelp	0.0798	1.17	0.1095	0.9278	0.9270	0.9434

Table 95: Detailed results for RAkELo(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3055	2.31	0.2095	0.7650	0.9818	0.9824
3s-bbc1000	0.6944	2.50	0.5139	0.4923	0.6786	0.6756
3s-guardian1000	0.6452	2.29	0.4758	0.5371	0.7123	0.7393
3s-reuters1000	0.8333	2.60	0.7917	0.4069	0.6764	0.6419
bibtex	0.4149	60.89	0.4190	0.4910	0.9828	0.9855
birds	0.3846	5.46	0.2887	0.6458	0.8104	0.9183
bookmarks	0.6228	56.65	0.1816	0.4016	0.8087	0.8226
CAL500	0.4510	149.29	0.4766	0.4179	0.6444	0.8222
corel16k001	0.7967	98.44	0.7032	0.1859	0.9667	0.9690
Corel5k	0.8100	163.53	0.8805	0.1698	0.6731	0.9936
delicious	0.5853	909.53	0.8873	0.1355	1.0000	1.0000
emotions	0.3167	1.95	0.2361	0.7639	0.8187	0.8272
enron	0.3216	23.43	0.4002	0.5634	0.8053	0.9661
EukaryoteGO	0.1817	1.15	0.0786	0.8737	0.9931	0.9950
EukaryotePseAAC	0.6216	4.99	0.3422	0.5065	0.9073	0.9255
Eurlex-dc	0.2644	42.93	0.2139	0.7427	0.7585	0.9990
Eurlex-sm	0.1494	18.95	0.1642	0.8038	0.8271	0.9973
foodtruck	0.3902	3.73	0.3187	0.6835	0.7135	0.8404
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0357	0.14	0.0214	0.9752	0.8746	0.9996
GnegativePseAAC	0.3000	0.81	0.1839	0.7983	0.8144	0.9488
GpositivePseAAC	0.4423	0.96	0.3269	0.7099	0.9095	0.9154
HumanGO	0.2026	1.15	0.0970	0.8558	0.9836	0.9875
HumanPseAAC	0.6206	3.22	0.2837	0.5427	0.8516	0.8794
Image	0.3500	1.05	0.1950	0.7692	0.8600	0.8616
IMDB-ECC-F	0.6878	10.45	0.4363	0.4092	0.8714	0.8918
IMDB-F	0.6739	11.08	0.4747	0.4036	0.8676	0.8910
LLOG-F	0.7623	30.21	0.7818	0.2421	0.5863	0.9845
mediamill	0.1544	35.77	0.1729	0.7121	0.9558	0.9750
medical	0.1735	5.63	0.1335	0.8312	0.5523	0.9973
Music	0.2500	1.95	0.2250	0.7940	0.8690	0.8711
OHSUMED-F	0.3632	6.28	0.2789	0.6470	0.9322	0.9421
PlantGO	0.1979	1.09	0.1337	0.8517	0.9891	0.9887
PlantPseAAC	0.7143	3.29	0.3827	0.4793	0.8200	0.8394
rcv1subset1	0.4583	33.62	0.3174	0.5170	0.9105	0.9733
REUTERS-K500-EX2	0.4811	23.39	0.3899	0.5499	0.7751	0.9898
scene	0.2739	0.73	0.1183	0.8256	0.9265	0.9364
sider_CDK_ECFP4	0.2113	20.89	0.2074	0.8009	0.6109	0.7807
sider_MordredDesc	0.1549	21.18	0.1806	0.8039	0.5841	0.7716
sider_RDKit_desc	0.3310	20.38	0.2120	0.7842	0.5973	0.7693
SLASHDOT-F	0.4259	5.76	0.3558	0.6198	0.7465	0.9769
Stackex_chemistry	0.6700	87.43	0.6604	0.2753	0.9048	0.9856
Stackex_chess	0.7679	138.75	0.8371	0.1583	0.5481	0.9965
Stackex_coffee	0.7826	67.52	0.6984	0.2293	0.2562	0.9867
Stackex_cooking	0.5874	190.92	0.5876	0.3316	0.9187	0.9942
Stackex_cs	0.5460	133.87	0.5645	0.3558	0.8879	0.9910
Stackex_philosophy	0.5905	111.50	0.5648	0.3433	0.7397	0.9888
tmc2007-500	0.2878	4.43	0.1735	0.7449	0.9428	0.9573
tox21_CDK_ECFP4	0.4658	5.12	0.3363	0.5876	0.8185	0.8353
tox21_RDKit_desc	0.4589	4.69	0.2883	0.6068	0.8007	0.8225
VirusGO	0.0476	0.48	0.0635	0.9500	0.8212	0.9905
VirusPseAAC	0.3810	0.76	0.0476	0.7817	0.6999	0.9122
Water-quality	0.2642	9.07	0.3072	0.7013	0.6935	0.7297
Yahoo_Arts	0.4112	6.77	0.3147	0.6248	0.8943	0.9367
Yahoo_Business	0.0945	2.53	0.1180	0.8976	0.8375	0.9882
Yahoo_Computers	0.3526	4.96	0.3242	0.6828	0.8666	0.9678
Yahoo_Education	0.8063	11.11	0.9423	0.3370	0.9075	0.9983
Yahoo_Entertainment	0.3197	2.89	0.2239	0.7370	0.9511	0.9569
Yahoo_Health	0.2367	4.26	0.2121	0.7764	0.8186	0.9807
Yahoo_Recreation	0.3390	4.16	0.2736	0.7096	0.9528	0.9560
Yahoo_Reference	0.3425	3.38	0.2218	0.7293	0.7901	0.9795
Yahoo_Science	0.4215	8.99	0.3267	0.6137	0.9396	0.9662
Yahoo_Social	0.2583	4.43	0.2031	0.7664	0.9039	0.9865
yeast	0.2603	6.91	0.2705	0.7340	0.7062	0.8211
Yelp	0.0987	1.17	0.0992	0.9209	0.9078	0.9321

Table 96: Detailed results for RAkELo(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4398	4.18	0.4186	0.6321	0.9952	0.9948
3s-bbc1000	0.5833	2.42	0.6204	0.5556	0.8537	0.8537
3s-guardian1000	0.4516	1.65	0.3387	0.6860	0.8832	0.8944
3s-reuters1000	0.8000	2.67	0.7333	0.4158	0.8444	0.8418
bibtex	0.4703	78.81	0.6333	0.3801	0.9977	0.9978
birds	0.4872	7.90	0.5718	0.5070	0.8517	0.9534
bookmarks	0.6127	57.70	0.1997	0.3980	0.8168	0.8481
CAL500	0.4314	150.45	0.6104	0.3774	0.7290	0.8757
corel16k001	0.9049	116.28	0.9553	0.0760	0.9986	0.9987
Corel5k	0.8314	163.55	0.8606	0.1622	0.6735	0.9955
delicious	0.5886	909.53	0.8836	0.1235	0.9939	0.9989
emotions	0.2833	1.95	0.2056	0.7897	0.8440	0.8561
enron	0.2339	24.51	0.3998	0.6047	0.8268	0.9838
EukaryoteGO	0.2539	2.39	0.1542	0.8038	0.9961	0.9936
EukaryotePseAAC	0.9665	10.74	0.9659	0.1702	0.9991	0.9992
Eurlex-dc	0.7910	117.00	0.8004	0.2430	0.7496	0.9917
Eurlex-sm	0.7048	71.28	0.9336	0.2089	0.8098	1.0000
foodtruck	0.2683	3.68	0.3920	0.7441	0.8285	0.9361
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0143	0.09	0.0071	0.9899	0.8748	0.9998
GnegativePseAAC	0.3643	1.24	0.2732	0.7509	0.8179	0.9583
GpositivePseAAC	0.3654	0.77	0.2500	0.7628	0.9194	0.9284
HumanGO	0.2669	1.41	0.1225	0.8197	0.9858	0.9861
HumanPseAAC	0.7396	5.23	0.6136	0.4084	0.9307	0.9335
Image	0.3800	1.25	0.2496	0.7342	0.8440	0.8424
IMDB-ECC-F	0.6439	10.44	0.4436	0.4297	0.8500	0.8856
IMDB-F	0.9255	16.02	0.9796	0.1747	0.9980	0.9982
LLOG-F	0.7705	29.92	0.7971	0.2470	0.5961	0.9959
mediamill	0.1544	35.78	0.1616	0.7063	0.9508	0.9717
medical	0.1531	5.22	0.1412	0.8454	0.5547	0.9983
Music	0.3000	2.15	0.2417	0.7610	0.8619	0.8652
OHSUMED-F	0.4214	9.25	0.5153	0.5441	0.9866	0.9875
PlantGO	0.3229	1.72	0.2361	0.7596	0.9861	0.9843
PlantPseAAC	0.8163	4.04	0.6378	0.3792	0.8983	0.9072
rcv1subset1	0.9590	64.56	0.9847	0.0735	0.9300	0.9881
REUTERS-K500-EX2	0.7904	49.28	0.8099	0.2406	0.7857	0.9992
scene	0.3278	0.88	0.1618	0.7898	0.9287	0.9406
sider_CDK_ECFP4	0.2676	20.48	0.2245	0.7883	0.6205	0.7838
sider_MordredDesc	0.2465	21.24	0.2783	0.7717	0.6424	0.7810
sider_RDKit_desc	0.2958	20.60	0.2534	0.7748	0.6537	0.7895
SLASHDOT-F	0.4735	6.87	0.4524	0.5614	0.7594	0.9875
Stackex_chemistry	0.8790	111.89	0.9462	0.0913	0.9193	0.9992
Stackex_chess	0.6488	137.20	0.7967	0.2060	0.5488	0.9978
Stackex_coffee	0.8261	78.96	0.9275	0.0986	0.2590	0.9980
Stackex_cooking	0.9933	259.71	0.9766	0.0000	0.9451	1.0000
Stackex_cs	0.7866	163.20	0.8772	0.1709	0.8969	0.9990
Stackex_philosophy	0.7789	144.50	0.8741	0.1379	0.7503	0.9991
tmc2007-500	0.3713	7.07	0.3992	0.6272	0.9697	0.9730
tox21_CDK_ECFP4	0.5479	5.61	0.5261	0.5205	0.9023	0.9044
tox21_RDKit_desc	0.5103	5.64	0.5018	0.5425	0.8978	0.9041
VirusGO	0.0476	0.48	0.0635	0.9500	0.8256	0.9925
VirusPseAAC	0.4762	1.05	0.1190	0.7111	0.7232	0.9249
Water-quality	0.4245	9.88	0.3988	0.6400	0.7400	0.7588
Yahoo_Arts	0.3522	6.75	0.3209	0.6184	0.8594	0.9513
Yahoo_Business	0.1225	3.97	0.2451	0.8614	0.8595	0.9883
Yahoo_Computers	0.4426	8.44	0.5799	0.5335	0.8880	0.9915
Yahoo_Education	0.7953	11.71	0.8105	0.3417	0.9250	0.9887
Yahoo_Entertainment	0.2961	2.85	0.2103	0.6768	0.9094	0.9167
Yahoo_Health	0.4869	9.83	0.5268	0.5377	0.8366	0.9934
Yahoo_Recreation	0.7931	9.81	0.8730	0.2890	0.9892	1.0000
Yahoo_Reference	0.3096	3.38	0.1910	0.6792	0.7940	0.9069
Yahoo_Science	0.8086	17.22	0.8409	0.2550	0.9983	0.9754
Yahoo_Social	0.6089	11.06	0.6159	0.4389	0.9096	1.0000
yeast	0.3719	7.12	0.3571	0.6734	0.7862	0.8538
Yelp	0.0907	1.18	0.1171	0.9244	0.9309	0.9477

Table 97: Detailed results for RAkELd(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5472	2.85	0.2816	0.6157	0.9710	0.9699
3s-bbc1000	0.6111	2.75	0.7269	0.5181	0.9597	0.9579
3s-guardian1000	0.6452	2.45	0.6452	0.5290	0.9396	0.9456
3s-reuters1000	0.8333	2.47	0.8000	0.4228	0.9494	0.9449
bibtex	0.7378	52.74	0.3672	0.3090	0.9569	0.9611
birds	0.6154	7.72	0.5632	0.4393	0.8177	0.9174
bookmarks	0.6415	56.65	0.1922	0.4220	0.7931	0.8131
CAL500	0.4314	150.86	0.6311	0.3444	0.7509	0.8770
corel16k001	0.8061	97.11	0.7051	0.1838	0.9824	0.9824
Corel5k	0.8408	166.60	0.9477	0.1394	0.6735	0.9738
delicious	0.6015	912.28	0.9033	0.1263	0.9878	0.9971
emotions	0.3500	2.45	0.4083	0.7122	0.8850	0.8915
enron	0.6199	26.82	0.4950	0.3641	0.7621	0.9077
EukaryoteGO	0.5019	5.55	0.4857	0.5649	0.9917	0.9933
EukaryotePseAAC	0.8340	6.97	0.4720	0.3351	0.8983	0.8893
Eurlex-dc	0.7770	79.56	0.4703	0.2997	0.7516	0.9903
Eurlex-sm	0.6817	46.29	0.5511	0.3293	0.8066	0.9720
foodtruck	0.3171	3.83	0.4332	0.7255	0.8402	0.9414
genbase	0.6567	6.03	0.7214	0.4608	0.6667	1.0000
GnegativeGO	0.2286	0.93	0.2429	0.8270	0.8736	0.9977
GnegativePseAAC	0.3143	0.99	0.1893	0.7854	0.8420	0.9778
GpositivePseAAC	0.2885	0.65	0.2308	0.8077	0.9565	0.9612
HumanGO	0.6238	4.39	0.5729	0.5066	0.9825	0.9853
HumanPseAAC	0.8006	4.85	0.5807	0.3889	0.8830	0.8883
Image	0.3550	1.15	0.2608	0.7564	0.9343	0.9293
IMDB-ECC-F	0.8012	14.09	0.8270	0.2688	0.9569	0.9603
IMDB-F	0.8246	14.34	0.7880	0.2915	0.9115	0.9212
LLOG-F	0.8770	27.97	0.6790	0.1965	0.5690	0.9592
mediamill	0.9385	61.17	0.5000	0.1374	0.8381	0.8575
medical	0.4796	17.78	0.5170	0.4945	0.5491	0.9944
Music	0.3333	2.78	0.4222	0.7067	0.9068	0.9067
OHSUMED-F	0.5686	7.81	0.3699	0.5174	0.9404	0.9469
PlantGO	0.6224	4.02	0.6122	0.4891	0.9887	0.9836
PlantPseAAC	0.6224	2.78	0.4396	0.5526	0.9346	0.9360
rcv1subset1	0.8333	63.50	0.9324	0.1480	0.9396	0.9990
REUTERS-K500-EX2	0.6833	32.40	0.5352	0.3859	0.7778	0.9915
scene	0.3734	0.81	0.1504	0.7802	0.9714	0.9717
sider_CDK_ECFP4	0.3803	23.41	0.5308	0.7004	0.7679	0.8435
sider_MordredDesc	0.5070	23.68	0.6991	0.6159	0.7497	0.7813
sider_RDKit_desc	0.4296	23.47	0.6336	0.6354	0.7159	0.7420
SLASHDOT-F	0.4670	6.87	0.4389	0.5714	0.7634	0.9910
Stackex_chemistry	0.7471	90.30	0.7079	0.2233	0.9026	0.9840
Stackex_chess	0.7798	136.96	0.7829	0.1714	0.5387	0.9873
Stackex_coffee	1.0000	81.74	0.9493	0.0492	0.2575	0.9937
Stackex_cooking	0.7237	209.97	0.6772	0.2227	0.9094	0.9863
Stackex_cs	0.6217	151.75	0.7031	0.2605	0.8798	0.9797
Stackex_philosophy	0.7136	127.72	0.7152	0.2238	0.7316	0.9805
tmc2007-500	0.4430	5.08	0.3062	0.6376	0.9444	0.9539
tox21_CDK_ECFP4	0.5685	5.70	0.5309	0.5084	0.8910	0.8981
tox21_RDKit_desc	0.6473	6.29	0.5082	0.4487	0.8044	0.8057
VirusGO	0.3333	1.29	0.3413	0.7566	0.8194	0.9782
VirusPseAAC	0.3333	1.33	0.3571	0.7341	0.7981	0.9679
Water-quality	0.4811	10.15	0.6094	0.5908	0.8126	0.8149
Yahoo_Arts	0.5981	12.22	0.6829	0.4140	0.9569	0.9949
Yahoo_Business	0.1221	3.92	0.2155	0.8515	0.8584	0.9969
Yahoo_Computers	0.4651	8.35	0.5820	0.5166	0.9022	0.9919
Yahoo_Education	0.7066	10.15	0.7341	0.4192	0.8984	0.9870
Yahoo_Entertainment	0.7031	5.41	0.7401	0.4390	0.9922	0.9847
Yahoo_Health	0.4712	7.53	0.4815	0.5983	0.8334	0.9881
Yahoo_Recreation	0.4615	5.84	0.4403	0.5979	0.9244	0.9098
Yahoo_Reference	0.5679	7.35	0.6382	0.5054	0.8137	0.9935
Yahoo_Science	0.9005	17.73	0.9132	0.2110	0.9745	0.9995
Yahoo_Social	0.3177	4.52	0.1187	0.7476	0.8206	0.9146
yeast	0.4174	7.66	0.4624	0.6482	0.8365	0.8758
Yelp	0.2293	1.50	0.2935	0.8362	0.8966	0.9152

Table 98: Detailed results for RAkELd(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9502	9.59	0.9512	0.1805	1.0000	1.0000
3s-bbc1000	0.7500	3.22	0.8889	0.4102	0.9940	0.9942
3s-guardian1000	0.5161	2.35	0.5968	0.5747	0.9320	0.9387
3s-reuters1000	0.7667	2.43	0.7667	0.4550	0.9434	0.9291
bibtex	0.9905	95.55	0.9986	0.0437	1.0000	1.0000
birds	0.4615	7.62	0.5910	0.5165	0.8845	0.9888
bookmarks	0.6158	56.65	0.2032	0.4103	0.8185	0.8068
CAL500	0.3922	151.57	0.8130	0.3750	0.8693	0.9805
corel16k001	0.9935	119.69	1.0000	0.0348	1.0000	1.0000
Corel5k	0.8353	166.58	0.9359	0.1604	0.6950	1.0000
delicious	0.6361	912.27	0.8934	0.1153	0.9836	0.9786
emotions	0.2667	1.82	0.2819	0.7892	0.9563	0.9377
enron	0.2281	31.04	0.5755	0.4864	0.8414	0.9936
EukaryoteGO	0.9639	10.86	0.9652	0.1678	0.9995	0.9995
EukaryotePseAAC	0.9949	11.08	0.9949	0.1446	1.0000	1.0000
Eurlex-dc	0.9565	134.78	0.9671	0.0941	0.7597	1.0000
Eurlex-sm	0.6734	73.68	0.9301	0.2247	0.8308	1.0000
foodtruck	0.2439	4.93	0.4920	0.7123	0.8936	0.9758
genbase	0.0149	0.24	0.0149	0.9900	0.6661	0.9998
GnegativeGO	0.2571	1.32	0.2607	0.7942	0.8746	0.9981
GnegativePseAAC	0.3500	1.52	0.3357	0.7346	0.8605	0.9876
GpositivePseAAC	0.1923	0.44	0.1731	0.8702	0.9926	0.9872
HumanGO	0.6559	4.75	0.7058	0.4584	0.9983	0.9958
HumanPseAAC	0.8489	6.30	0.8623	0.3193	0.9946	0.9939
Image	0.4250	1.35	0.3550	0.7050	0.9469	0.9487
IMDB-ECC-F	0.8350	14.77	0.9196	0.2297	0.9937	0.9938
IMDB-F	0.7529	14.35	0.7961	0.2699	0.9724	0.9264
LLOG-F	0.9836	38.84	1.0000	0.0734	0.6000	1.0000
mediamill	0.2306	64.72	0.5222	0.4751	0.9946	0.9960
medical	0.1633	7.43	0.1956	0.8103	0.5551	0.9991
Music	0.4667	2.22	0.3870	0.7166	0.9328	0.9225
OHSUMED-F	0.6705	12.36	0.7760	0.3429	0.9990	0.9981
PlantGO	0.2396	1.50	0.2170	0.8058	0.9949	0.9929
PlantPseAAC	0.7245	3.98	0.7296	0.4271	0.9919	0.9902
rcv1subset1	0.9750	64.54	1.0000	0.0894	0.9406	1.0000
REUTERS-K500-EX2	0.9931	61.29	0.9983	0.0604	0.7864	1.0000
scene	0.2448	1.10	0.2490	0.8031	0.9864	0.9864
sider_CDK_ECFP4	0.4366	22.72	0.4278	0.7122	0.6668	0.7791
sider_MordredDesc	0.4296	21.32	0.3959	0.7111	0.6436	0.7619
sider_RDKit_desc	0.4155	20.87	0.3598	0.7183	0.6217	0.7499
SLASHDOT-F	0.9630	13.25	0.9788	0.1199	0.7727	1.0000
Stackex_chemistry	0.9395	113.36	0.9947	0.0566	0.9197	0.9997
Stackex_chess	0.9940	156.94	1.0000	0.0247	0.5507	1.0000
Stackex_coffee	0.9565	78.52	0.9565	0.0792	0.2593	0.9986
Stackex_cooking	0.9932	259.74	1.0000	0.0206	0.9250	1.0000
Stackex_cs	0.6429	151.73	0.6876	0.2681	0.9070	0.9950
Stackex_philosophy	0.9925	153.65	1.0000	0.0222	0.7511	1.0000
tmc2007-500	0.5224	11.69	0.7478	0.4083	0.9940	0.9897
tox21_CDK_ECFP4	0.7260	6.50	0.8155	0.3881	0.9795	0.9788
tox21_RDKit_desc	0.6678	6.64	0.8113	0.4031	0.9698	0.9710
VirusGO	0.0952	0.81	0.1111	0.9040	0.8222	0.9937
VirusPseAAC	0.3333	1.43	0.3810	0.7222	0.7985	0.9772
Water-quality	0.3019	10.25	0.5767	0.6659	0.8990	0.9047
Yahoo_Arts	0.7637	15.36	0.8598	0.2654	0.9615	1.0000
Yahoo_Business	0.1319	4.17	0.2329	0.8390	0.8667	0.9978
Yahoo_Computers	0.4924	8.64	0.6232	0.4886	0.9049	0.9951
Yahoo_Education	0.7589	11.69	0.8159	0.3559	0.9077	0.9986
Yahoo_Entertainment	0.8680	5.99	0.9001	0.3382	0.9999	0.9999
Yahoo_Health	0.5679	10.06	0.6317	0.4896	0.8406	0.9956
Yahoo_Recreation	0.8231	9.85	0.8609	0.3052	0.9998	0.9997
Yahoo_Reference	0.5953	7.37	0.6104	0.4959	0.8152	0.9965
Yahoo_Science	0.9596	18.13	0.9736	0.1674	0.9750	1.0000
Yahoo_Social	0.6444	11.77	0.6850	0.4069	0.9212	0.9972
yeast	0.2438	6.28	0.4448	0.7419	0.9377	0.9485
Yelp	0.1186	1.29	0.1884	0.8999	0.9480	0.9582

Table 99: Detailed results for RAkELd(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4580	4.07	0.3859	0.6287	0.9917	0.9921
3s-bbc1000	0.6944	2.72	0.7222	0.4715	0.8696	0.8730
3s-guardian1000	0.7097	2.39	0.5806	0.5086	0.8700	0.8672
3s-reuters1000	0.8667	2.67	0.8667	0.3900	0.8640	0.8294
bibtex	0.5946	75.74	0.5984	0.3599	0.9935	0.9941
birds	0.5385	7.95	0.6299	0.4787	0.8515	0.9559
bookmarks	0.6228	56.65	0.1816	0.4016	0.8087	0.8226
CAL500	0.5882	152.31	0.7502	0.3165	0.7772	0.9078
corel16k001	0.8794	113.70	0.8887	0.1072	0.9892	0.9899
Corel5k	0.8440	166.57	0.9323	0.1506	0.6767	0.9975
delicious	0.6198	912.28	0.9003	0.1126	0.9768	0.9949
emotions	0.4333	2.73	0.5222	0.6719	0.8941	0.8853
enron	0.4035	28.77	0.6304	0.4224	0.8300	0.9830
EukaryoteGO	0.2307	2.51	0.1974	0.8022	0.9948	0.9962
EukaryotePseAAC	0.7645	8.20	0.6935	0.3463	0.9625	0.9678
Eurlex-dc	0.3471	57.74	0.3147	0.6560	0.7591	0.9996
Eurlex-sm	0.2558	31.90	0.2886	0.6946	0.8290	0.9985
foodtruck	0.3171	4.10	0.4753	0.7006	0.8274	0.9292
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0357	0.19	0.0286	0.9726	0.8748	0.9997
GnegativePseAAC	0.3500	1.36	0.3214	0.7418	0.8411	0.9738
GpositivePseAAC	0.4038	0.71	0.2692	0.7532	0.9535	0.9504
HumanGO	0.2926	2.19	0.2503	0.7672	0.9888	0.9913
HumanPseAAC	0.7428	5.15	0.6479	0.4100	0.9472	0.9530
Image	0.4700	1.38	0.3750	0.6895	0.9194	0.9192
IMDB-ECC-F	0.8033	14.03	0.8016	0.2722	0.9572	0.9623
IMDB-F	0.8034	14.40	0.8003	0.2693	0.9543	0.9600
LLOG-F	0.8525	31.80	0.8314	0.1961	0.5948	0.9935
mediamill	0.4629	57.22	0.4259	0.4671	0.9790	0.9860
medical	0.1837	6.54	0.1845	0.8103	0.5538	0.9982
Music	0.3333	2.72	0.4606	0.7190	0.9045	0.9026
OHSUMED-F	0.5104	9.62	0.5427	0.4949	0.9724	0.9757
PlantGO	0.2396	1.57	0.2309	0.7971	0.9909	0.9917
PlantPseAAC	0.8163	4.19	0.7296	0.3723	0.9340	0.9400
rcv1subset1	0.6117	51.67	0.6305	0.3439	0.9277	0.9881
REUTERS-K500-EX2	0.6220	32.65	0.5513	0.4261	0.7815	0.9954
scene	0.4232	1.44	0.3351	0.7005	0.9540	0.9575
sider_CDK_ECFP4	0.4507	23.37	0.5042	0.6932	0.6862	0.7931
sider_MordredDesc	0.4859	23.74	0.5337	0.6690	0.6475	0.7630
sider_RDKit_desc	0.4225	23.27	0.5072	0.6859	0.6841	0.7893
SLASHDOT-F	0.5132	7.58	0.4877	0.5268	0.7608	0.9887
Stackex_chemistry	0.7810	101.53	0.8220	0.1745	0.9145	0.9947
Stackex_chess	0.8036	141.71	0.8729	0.1317	0.5487	0.9976
Stackex_coffee	0.8261	67.65	0.7663	0.1573	0.2562	0.9900
Stackex_cooking	0.6647	213.98	0.7092	0.2468	0.9224	0.9974
Stackex_cs	0.6251	151.73	0.7097	0.2776	0.8938	0.9962
Stackex_philosophy	0.7437	131.60	0.7561	0.2079	0.7461	0.9950
tmc2007-500	0.4402	7.20	0.4734	0.5887	0.9637	0.9722
tox21_CDK_ECFP4	0.6027	6.16	0.6540	0.4734	0.9254	0.9314
tox21_RDKit_desc	0.6062	6.08	0.6228	0.4768	0.9085	0.9144
VirusGO	0.0476	0.67	0.1032	0.9325	0.8287	0.9956
VirusPseAAC	0.6190	2.05	0.5000	0.5504	0.7397	0.9190
Water-quality	0.4811	10.09	0.6275	0.5908	0.8074	0.8205
Yahoo_Arts	0.5794	10.14	0.5429	0.4782	0.9337	0.9744
Yahoo_Business	0.1257	3.17	0.1774	0.8685	0.8524	0.9936
Yahoo_Computers	0.4305	6.58	0.4553	0.5960	0.8911	0.9858
Yahoo_Education	0.8180	11.52	0.9674	0.3225	0.9086	0.9994
Yahoo_Entertainment	0.5004	4.10	0.4722	0.6027	0.9789	0.9817
Yahoo_Health	0.3735	6.08	0.3934	0.6758	0.8304	0.9894
Yahoo_Recreation	0.4871	5.90	0.4513	0.5909	0.9809	0.9824
Yahoo_Reference	0.4782	4.88	0.4385	0.6154	0.8083	0.9923
Yahoo_Science	0.5568	12.52	0.5330	0.4890	0.9615	0.9878
Yahoo_Social	0.3045	4.56	0.1116	0.7446	0.8690	0.8989
yeast	0.4545	8.16	0.5166	0.6225	0.8389	0.8820
Yelp	0.0907	1.25	0.1921	0.9161	0.9406	0.9514

Table 100: Detailed results for RAkELd(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5052	4.85	0.4894	0.5757	0.9973	0.9968
3s-bbc1000	0.6389	2.69	0.6991	0.5069	0.9778	0.9767
3s-guardian1000	0.5161	2.13	0.5484	0.6059	0.9360	0.9403
3s-reuters1000	0.7667	2.37	0.7333	0.4617	0.9668	0.9704
bibtex	0.5365	84.92	0.7037	0.3150	0.9990	0.9990
birds	0.5897	8.15	0.6714	0.4480	0.8667	0.9672
bookmarks	0.6279	56.64	0.2206	0.4106	0.7976	0.8042
CAL500	0.4902	151.31	0.7670	0.3382	0.7928	0.9251
corel16k001	0.9484	118.30	0.9803	0.0542	0.9995	0.9995
Corel5k	0.8638	166.55	0.9205	0.1453	0.6581	0.9867
delicious	0.6085	912.30	0.9054	0.1034	0.9942	0.9993
emotions	0.3500	2.18	0.2903	0.7372	0.9169	0.9146
enron	0.2456	25.87	0.5040	0.5450	0.8352	0.9898
EukaryoteGO	0.3660	4.57	0.4026	0.6417	0.9990	0.9953
EukaryotePseAAC	0.9743	10.81	0.9743	0.1636	0.9995	0.9995
Eurlex-dc	0.9465	134.78	0.9897	0.0870	0.7787	0.9894
Eurlex-sm	0.6759	73.66	0.9108	0.2147	0.8243	0.9787
foodtruck	0.2195	3.61	0.4164	0.7694	0.8625	0.9599
genbase	0.0000	0.49	0.0075	0.9932	0.6667	0.9999
GnegativeGO	0.0571	0.19	0.0464	0.9636	0.8749	0.9997
GnegativePseAAC	0.4429	1.60	0.4321	0.6829	0.8518	0.9810
GpositivePseAAC	0.4231	0.94	0.3654	0.7196	0.9447	0.9465
HumanGO	0.4019	2.71	0.4228	0.6744	0.9958	0.9896
HumanPseAAC	0.7910	5.97	0.7708	0.3564	0.9630	0.9654
Image	0.4150	1.32	0.3250	0.7142	0.9365	0.9358
IMDB-ECC-F	0.7556	14.01	0.8013	0.2558	0.9189	0.9832
IMDB-F	0.9510	16.14	0.9943	0.1615	0.9996	0.9996
LLOG-F	0.8525	33.14	0.8873	0.1756	0.5985	0.9983
mediamill	0.4803	57.24	0.4408	0.4836	0.9979	0.9786
medical	0.1735	6.16	0.1650	0.8203	0.5548	0.9989
Music	0.3833	2.77	0.4454	0.6907	0.9163	0.9080
OHSUMED-F	0.4752	10.08	0.5807	0.4948	0.9920	0.9917
PlantGO	0.3438	2.17	0.2882	0.7256	0.9900	0.9876
PlantPseAAC	0.7755	4.16	0.7449	0.3890	0.9593	0.9599
rcv1subset1	0.9932	64.55	1.0000	0.1022	0.9352	1.0000
REUTERS-K500-EX2	0.8127	50.19	0.8263	0.2244	0.7861	0.9996
scene	0.4149	1.65	0.3600	0.6868	0.9554	0.9625
sider_CDK_ECFP4	0.3451	22.26	0.4044	0.7286	0.7088	0.8141
sider_MordredDesc	0.3592	22.37	0.4843	0.7044	0.7142	0.8072
sider_RDKit_desc	0.4085	22.75	0.4738	0.7062	0.6859	0.7982
SLASHDOT-F	0.5344	7.72	0.5300	0.5040	0.7656	0.9926
Stackex_chemistry	0.8905	112.66	0.9555	0.0844	0.9197	0.9997
Stackex_chess	0.6726	136.82	0.8152	0.1928	0.5496	0.9987
Stackex_coffee	0.9130	81.83	0.9746	0.0578	0.2598	0.9983
Stackex_cooking	0.9915	259.73	0.9852	0.0272	0.9183	0.9869
Stackex_cs	0.8407	169.23	0.9136	0.1385	0.8972	0.9993
Stackex_philosophy	0.8342	146.37	0.9042	0.1063	0.7505	0.9993
tmc2007-500	0.4507	8.62	0.5113	0.5402	0.9829	0.9793
tox21_CDK_ECFP4	0.6336	6.44	0.7327	0.4313	0.9612	0.9633
tox21_RDKit_desc	0.6062	6.24	0.6746	0.4652	0.9458	0.9501
VirusGO	0.0952	0.62	0.1349	0.9198	0.8256	0.9941
VirusPseAAC	0.6190	2.00	0.4762	0.5492	0.7712	0.9337
Water-quality	0.5000	10.43	0.6261	0.5848	0.8167	0.8311
Yahoo_Arts	0.5616	10.09	0.5029	0.4437	0.8712	0.9226
Yahoo_Business	0.1315	4.15	0.2409	0.8429	0.8772	0.9844
Yahoo_Computers	0.4868	8.64	0.6327	0.5119	0.9024	1.0000
Yahoo_Education	0.7614	11.67	0.8126	0.3587	0.9259	0.9876
Yahoo_Entertainment	0.4810	4.05	0.4493	0.5702	0.9328	0.9627
Yahoo_Health	0.5471	10.04	0.6332	0.4903	0.8282	1.0000
Yahoo_Recreation	0.8251	9.85	0.8785	0.3069	0.9837	0.9997
Yahoo_Reference	0.4997	4.87	0.4344	0.6213	0.7517	0.9375
Yahoo_Science	0.9464	18.11	0.9553	0.1648	0.9625	0.9845
Yahoo_Social	0.6644	11.76	0.7073	0.3825	0.9383	1.0000
yeast	0.4504	7.64	0.5390	0.6317	0.8408	0.8917
Yelp	0.0828	1.18	0.1622	0.9288	0.9583	0.9664

Table 101: Detailed results for HOMER-B(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7788	5.26	0.5179	0.4127	0.9291	0.9269
3s-bbc1000	0.7222	2.19	0.6157	0.5291	0.7876	0.7844
3s-guardian1000	0.5484	1.90	0.5565	0.6220	0.8130	0.8288
3s-reuters1000	0.8333	2.40	0.7333	0.4325	0.7813	0.7470
bibtex	0.8000	84.60	0.6965	0.2376	0.9850	0.9833
birds	0.7179	8.97	0.6048	0.3884	0.7639	0.8618
bookmarks	0.9338	108.58	0.7994	0.1447	1.0000	0.9840
CAL500	0.5882	149.63	0.6250	0.3249	0.7493	0.8777
corel16k001	0.8366	105.33	0.8102	0.1527	0.9875	0.9872
Corel5k	0.7480	158.56	0.8417	0.2129	0.6759	0.9969
delicious	0.6675	903.84	0.7514	0.1485	0.9776	0.9821
emotions	0.6167	2.33	0.4264	0.6147	0.7796	0.7264
enron	0.5614	29.37	0.5698	0.4027	0.8108	0.9645
EukaryoteGO	0.7310	5.22	0.3930	0.4732	0.9609	0.9638
EukaryotePseAAC	0.9575	9.43	0.7369	0.1976	0.8894	0.8792
Eurlex-dc	0.6915	105.61	0.6637	0.3060	0.7391	1.0000
Eurlex-sm	0.6668	51.16	0.5567	0.4020	0.8212	1.0000
foodtruck	0.5122	3.88	0.3786	0.6188	0.7979	0.8905
genbase	0.6269	4.21	0.5485	0.5587	0.6202	0.9448
GnegativeGO	0.5500	1.12	0.1982	0.6776	0.7467	0.8765
GnegativePseAAC	0.5500	1.70	0.2232	0.6407	0.6980	0.8453
GpositivePseAAC	0.3654	0.73	0.1731	0.7692	0.9032	0.8995
HumanGO	0.7106	3.68	0.4264	0.5017	0.9473	0.9522
HumanPseAAC	0.8167	5.81	0.6852	0.3525	0.9116	0.9096
Image	0.5600	1.33	0.2067	0.6537	0.8093	0.8079
IMDB-ECC-F	0.8549	13.06	0.7263	0.2602	0.9426	0.9314
IMDB-F	0.7807	13.10	0.6476	0.3355	0.9770	0.9409
LLOG-F	0.9016	33.01	0.8238	0.1629	0.5789	0.9691
mediamill	0.9366	65.42	0.6475	0.2041	0.9534	0.9537
medical	0.5204	15.64	0.4711	0.5118	0.5457	0.9893
Music	0.4333	2.43	0.3583	0.7006	0.8081	0.7677
OHSUMED-F	0.6303	9.03	0.4912	0.4464	0.8792	0.8844
PlantGO	0.6122	3.74	0.5204	0.5087	0.9481	0.9296
PlantPseAAC	0.6327	3.65	0.5527	0.4908	0.9183	0.9243
rcv1subset1	0.7979	59.68	0.8092	0.2040	0.9364	1.0000
REUTERS-K500-EX2	0.8667	42.29	0.6803	0.2433	0.7759	0.9891
scene	0.6100	1.70	0.4481	0.6039	0.8133	0.8129
sider_CDK_ECFP4	0.3169	21.91	0.3467	0.7388	0.5703	0.6972
sider_MordredDesc	0.3099	23.55	0.5098	0.6706	0.7126	0.7244
sider_RDKit_desc	0.2887	23.39	0.5133	0.6840	0.7038	0.7388
SLASHDOT-F	0.5858	6.08	0.3632	0.5339	0.7256	0.9565
Stackex_chemistry	0.8132	100.92	0.8083	0.1637	0.9088	0.9889
Stackex_chess	0.8988	140.04	0.8227	0.1304	0.5442	0.9928
Stackex_coffee	0.8696	81.70	0.9312	0.0973	0.2583	0.9976
Stackex_cooking	0.8338	242.71	0.8622	0.1237	0.9221	0.9971
Stackex_cs	0.7165	151.02	0.7078	0.2388	0.8902	0.9928
Stackex_philosophy	0.8417	135.28	0.7764	0.1600	0.7408	0.9894
tmc2007-500	0.5990	7.01	0.3286	0.5019	0.8888	0.9029
tox21_CDK_ECFP4	0.6096	5.79	0.5580	0.4854	0.8731	0.8796
tox21_RDKit_desc	0.6473	6.10	0.5604	0.4498	0.8263	0.8395
VirusGO	0.8095	1.81	0.2302	0.5444	0.6772	0.8459
VirusPseAAC	0.7619	1.29	0.1548	0.5786	0.6854	0.8704
Water-quality	0.4811	10.43	0.5327	0.5720	0.7267	0.7202
Yahoo_Arts	0.7423	11.44	0.6362	0.3566	0.8968	0.9319
Yahoo_Business	0.0955	3.69	0.2048	0.8576	0.8498	1.0000
Yahoo_Computers	0.4583	6.36	0.5566	0.5587	0.8859	0.9564
Yahoo_Education	0.6376	9.87	0.5957	0.4552	0.8776	0.9806
Yahoo_Entertainment	0.7400	5.12	0.5501	0.4298	0.9615	0.9482
Yahoo_Health	0.4188	7.14	0.4004	0.6022	0.8098	0.9737
Yahoo_Recreation	0.6643	7.10	0.5777	0.4900	0.9590	0.9820
Yahoo_Reference	0.4899	5.91	0.3932	0.5750	0.7972	0.9795
Yahoo_Science	0.7688	15.96	0.7986	0.3309	0.9772	1.0000
Yahoo_Social	0.5830	5.70	0.2975	0.5817	0.9238	0.9895
yeast	0.3843	8.23	0.5170	0.6146	0.8348	0.8586
Yelp	0.2951	1.89	0.2457	0.7639	0.7568	0.7722

Table 102: Detailed results for HOMER-B(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7580	5.02	0.4442	0.4376	0.9588	0.9601
3s-bbc1000	0.7222	1.22	0.2917	0.9273	0.1971	0.1919
3s-guardian1000	0.7097	1.03	0.1613	0.8758	0.2188	0.2347
3s-reuters1000	0.7333	2.17	0.6000	0.4892	0.8845	0.7582
bibtex	0.7014	89.99	0.7915	0.2148	0.9972	0.9973
birds	0.6154	7.49	0.5880	0.4552	0.8344	0.9466
bookmarks	0.8333	111.89	0.8402	0.1802	0.9987	0.9988
CAL500	0.5098	150.96	0.5950	0.3887	0.8005	0.9147
corel16k001	0.9070	115.99	0.9523	0.0765	0.9979	0.9979
Corel5k	0.9480	169.03	0.9788	0.1227	0.6787	0.9996
delicious	0.5432	910.26	0.8673	0.1191	0.9921	0.9972
emotions	0.3833	1.98	0.2875	0.7338	0.8006	0.8055
enron	0.3450	28.36	0.4454	0.5374	0.8210	0.9795
EukaryoteGO	0.4402	3.61	0.2677	0.6618	0.9561	0.9688
EukaryotePseAAC	0.6358	7.04	0.5446	0.4460	0.9411	0.9501
Eurlex-dc	0.7623	117.05	0.7447	0.2612	0.7592	0.9996
Eurlex-sm	0.6527	58.50	0.6361	0.3290	0.8271	0.9963
foodtruck	0.2439	3.56	0.4003	0.7534	0.8092	0.9363
genbase	0.4030	1.13	0.0224	0.7419	0.6162	0.9611
GnegativeGO	0.5643	0.89	0.0393	0.6901	0.7578	0.8865
GnegativePseAAC	0.6500	1.47	0.1732	0.6082	0.7360	0.8538
GpositivePseAAC	0.2308	0.40	0.0962	0.8622	0.9502	0.9593
HumanGO	0.3119	1.91	0.2026	0.7692	0.9535	0.9730
HumanPseAAC	0.6045	4.11	0.4748	0.5279	0.9384	0.9457
Image	0.4150	0.95	0.1258	0.7550	0.8457	0.8723
IMDB-ECC-F	0.6614	13.05	0.6937	0.3543	0.9384	0.9420
IMDB-F	0.7150	12.78	0.6098	0.3625	0.9439	0.9354
LLOG-F	0.8525	30.66	0.8463	0.1978	0.5927	0.9926
mediamill	0.7327	57.94	0.4422	0.4267	0.9883	0.9880
medical	0.2755	9.79	0.2772	0.7143	0.5467	0.9941
Music	0.5000	2.33	0.1528	0.6832	0.7867	0.7826
OHSUMED-F	0.7085	11.31	0.6740	0.3211	0.9400	0.9198
PlantGO	0.3469	1.71	0.2262	0.7468	0.9699	0.9740
PlantPseAAC	0.6122	3.32	0.5051	0.5290	0.9426	0.9301
rcv1subset1	0.8867	62.36	0.9253	0.1468	0.9360	0.9951
REUTERS-K500-EX2	0.8307	48.69	0.7927	0.1955	0.7941	0.9990
scene	0.6349	1.61	0.2386	0.5998	0.8623	0.8451
sider_CDK_ECFP4	0.1127	21.11	0.2568	0.6871	0.5836	0.6519
sider_MordredDesc	0.1127	21.07	0.2536	0.6873	0.6089	0.6627
sider_RDKit_desc	0.1127	21.06	0.2554	0.6900	0.6008	0.6604
SLASHDOT-F	0.6121	6.79	0.4402	0.5005	0.7293	0.9639
Stackex_chemistry	0.8664	109.49	0.9253	0.1062	0.9185	0.9986
Stackex_chess	0.8393	142.12	0.8620	0.1254	0.5465	0.9961
Stackex_coffee	0.8696	78.13	0.9167	0.1128	0.2585	0.9976
Stackex_cooking	0.8657	248.20	0.9083	0.0960	0.9245	0.9995
Stackex_cs	0.7749	171.33	0.8826	0.1532	0.8962	0.9985
Stackex_philosophy	0.8819	143.46	0.8887	0.1094	0.7485	0.9975
tmc2007-500	0.3601	7.51	0.3934	0.6166	0.9502	0.9530
tox21_CDK_ECFP4	0.6164	6.12	0.5992	0.4761	0.9189	0.9101
tox21_RDKit_desc	0.6096	6.21	0.5801	0.4782	0.9198	0.9030
VirusGO	0.6667	1.24	0.0873	0.6524	0.7123	0.8364
VirusPseAAC	0.6190	2.24	0.5000	0.5365	0.7391	0.8168
Water-quality	0.3208	9.92	0.4214	0.6138	0.7112	0.7220
Yahoo_Arts	0.7130	10.59	0.4975	0.3946	0.8916	0.9256
Yahoo_Business	0.1373	3.73	0.1912	0.8518	0.8584	0.9958
Yahoo_Computers	0.4875	6.08	0.5382	0.5917	0.8598	0.9614
Yahoo_Education	0.6185	9.85	0.6099	0.4713	0.8817	0.9742
Yahoo_Entertainment	0.7031	5.98	0.6582	0.4187	0.9502	0.9306
Yahoo_Health	0.4061	8.67	0.4735	0.5776	0.8315	0.9850
Yahoo_Recreation	0.6898	7.89	0.6348	0.4357	0.9775	0.9769
Yahoo_Reference	0.4844	6.27	0.4008	0.5812	0.7770	0.9674
Yahoo_Science	0.7247	15.54	0.7505	0.3368	0.9672	0.9929
Yahoo_Social	0.5677	5.95	0.2771	0.5652	0.8853	0.9658
yeast	0.2934	6.42	0.3600	0.7144	0.8597	0.9014
Yelp	0.5304	1.87	0.1333	0.6927	0.8149	0.7759

Table 103: Detailed results for HOMER-B(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.8446	7.28	0.7427	0.3134	0.9769	0.9738
3s-bbc1000	0.7778	2.83	0.7546	0.4397	0.9044	0.8480
3s-guardian1000	0.5806	1.90	0.6371	0.6048	0.9265	0.8821
3s-reuters1000	0.8333	2.30	0.8000	0.4408	0.9023	0.8015
bibtex	0.8459	89.59	0.8113	0.1831	0.9973	0.9971
birds	0.7692	8.72	0.6927	0.3775	0.8527	0.9610
bookmarks	0.9132	108.60	0.8237	0.1538	0.9986	0.9987
CAL500	0.3922	151.24	0.7442	0.3504	0.8109	0.9369
corel16k001	0.9673	116.81	0.9667	0.0575	0.9985	0.9985
Corel5k	0.9300	169.17	0.9781	0.1223	0.6789	0.9998
delicious	0.5587	907.93	0.8508	0.1329	0.9916	0.9967
emotions	0.5000	2.72	0.4639	0.6372	0.8243	0.8264
enron	0.3275	26.65	0.4423	0.5248	0.8155	0.9743
EukaryoteGO	0.7040	3.16	0.2328	0.5523	0.9779	0.9760
EukaryotePseAAC	0.8752	8.36	0.7105	0.2918	0.9618	0.9633
Eurlex-dc	0.7124	105.59	0.6574	0.3271	0.7593	0.9996
Eurlex-sm	0.6481	51.14	0.5321	0.3866	0.8272	0.9961
foodtruck	0.2683	4.05	0.4848	0.7125	0.8097	0.9130
genbase	0.5224	1.22	0.3027	0.6912	0.6402	0.9785
GnegativeGO	0.5143	0.81	0.1554	0.7170	0.8439	0.9475
GnegativePseAAC	0.5857	1.69	0.3393	0.6182	0.7820	0.8986
GpositivePseAAC	0.4808	1.04	0.4038	0.6843	0.9693	0.9667
HumanGO	0.5498	2.24	0.2437	0.6481	0.9772	0.9829
HumanPseAAC	0.8778	5.90	0.7362	0.3218	0.9657	0.9637
Image	0.6400	1.51	0.3642	0.6044	0.9039	0.9037
IMDB-ECC-F	0.8783	13.09	0.7187	0.2803	0.9658	0.9466
IMDB-F	0.7584	13.13	0.6233	0.3413	0.9619	0.9349
LLOG-F	0.9754	36.51	0.9508	0.0967	0.5942	0.9942
mediamill	0.6895	60.48	0.4877	0.4078	0.9873	0.9888
medical	0.3673	9.08	0.2653	0.6909	0.5503	0.9945
Music	0.5167	2.65	0.4838	0.6401	0.8053	0.8156
OHSUMED-F	0.6770	10.10	0.5965	0.4058	0.9450	0.9208
PlantGO	0.4184	1.82	0.3163	0.7018	0.9853	0.9800
PlantPseAAC	0.8776	4.51	0.8469	0.3244	0.9678	0.9688
rcv1subset1	0.7817	59.68	0.8025	0.2132	0.9302	0.9889
REUTERS-K500-EX2	0.9183	49.02	0.8237	0.1710	0.7842	0.9978
scene	0.6349	1.75	0.4388	0.5864	0.9184	0.9185
sider_CDK_ECFP4	0.2042	21.27	0.2855	0.7632	0.5801	0.7255
sider_MordredDesc	0.3873	21.92	0.4017	0.7194	0.5972	0.7260
sider_RDKit_desc	0.4155	22.45	0.3969	0.7119	0.5887	0.7293
SLASHDOT-F	0.7230	9.80	0.6724	0.3548	0.7498	0.9757
Stackex_chemistry	0.8951	110.98	0.9412	0.0895	0.9184	0.9984
Stackex_chess	0.8869	139.90	0.8271	0.1316	0.5456	0.9946
Stackex_coffee	0.9565	81.65	0.9493	0.0654	0.2565	0.9909
Stackex_cooking	0.8850	248.80	0.9169	0.0899	0.9245	0.9994
Stackex_cs	0.8561	168.22	0.8796	0.1494	0.8962	0.9985
Stackex_philosophy	0.8492	139.38	0.8307	0.1437	0.7474	0.9963
tmc2007-500	0.4983	8.44	0.4495	0.5149	0.9405	0.9365
tox21_CDK_ECFP4	0.6096	6.20	0.6093	0.4724	0.9188	0.9058
tox21_RDKit_desc	0.6575	6.17	0.6653	0.4477	0.9345	0.9341
VirusGO	0.7619	1.33	0.1508	0.5889	0.8210	0.9556
VirusPseAAC	0.8095	2.14	0.5238	0.4599	0.7306	0.8936
Water-quality	0.4811	10.55	0.5894	0.5795	0.7590	0.7722
Yahoo_Arts	0.7156	10.64	0.6801	0.3791	0.9196	0.9333
Yahoo_Business	0.1096	3.68	0.1954	0.8631	0.8615	0.9970
Yahoo_Computers	0.4803	6.34	0.5480	0.5792	0.8841	0.9643
Yahoo_Education	0.6276	9.87	0.5936	0.4551	0.8900	0.9682
Yahoo_Entertainment	0.7345	5.13	0.5315	0.4451	0.9536	0.9275
Yahoo_Health	0.4017	7.15	0.4083	0.6238	0.8316	0.9880
Yahoo_Recreation	0.6532	7.10	0.5549	0.4783	0.9704	0.9717
Yahoo_Reference	0.4782	5.89	0.3848	0.5980	0.8025	0.9696
Yahoo_Science	0.7589	15.95	0.7848	0.3137	0.9681	0.9935
Yahoo_Social	0.5718	5.68	0.2760	0.5823	0.9144	0.9779
yeast	0.3099	7.26	0.4972	0.6759	0.8657	0.9069
Yelp	0.3071	1.82	0.2435	0.7661	0.8197	0.8092

Table 104: Detailed results for HOMER-B(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.8896	7.51	0.7925	0.2724	0.9802	0.9805
3s-bbc1000	0.7361	2.92	0.7963	0.4467	0.9971	0.7982
3s-guardian1000	0.5484	2.00	0.6129	0.6089	1.0000	0.8862
3s-reuters1000	0.8667	2.30	0.8667	0.4225	1.0000	0.7973
bibtex	0.8716	93.03	0.8390	0.1622	0.9982	0.9981
birds	0.8590	9.69	0.9145	0.2906	0.8872	0.9894
bookmarks	0.9352	111.86	0.8600	0.1285	0.9991	0.9991
CAL500	0.4608	151.26	0.6254	0.3703	0.7937	0.9034
corel16k001	0.9847	119.07	0.9905	0.0416	0.9996	0.9996
Corel5k	0.9540	169.63	0.9838	0.1195	0.6790	0.9999
delicious	0.6762	910.73	0.8880	0.1017	0.9930	0.9972
emotions	0.5250	2.62	0.3514	0.6349	0.7830	0.7319
enron	0.2982	30.13	0.5025	0.5067	0.8236	0.9775
EukaryoteGO	0.9073	7.32	0.7007	0.2857	0.9995	0.9770
EukaryotePseAAC	0.9936	10.76	0.9701	0.1546	0.9939	0.9947
Eurlex-dc	0.9953	140.70	0.9974	0.0640	0.7597	1.0000
Eurlex-sm	0.7747	76.51	0.9964	0.1610	0.8308	1.0000
foodtruck	0.2439	3.40	0.4117	0.7599	0.8994	0.9514
genbase	0.5075	1.83	0.3230	0.6873	0.6428	0.9789
GnegativeGO	0.5393	1.08	0.3679	0.6725	0.8553	0.9413
GnegativePseAAC	0.6071	1.92	0.4107	0.5859	0.8113	0.9107
GpositivePseAAC	0.4519	1.01	0.3173	0.7027	0.9608	0.9231
HumanGO	0.6029	3.69	0.3636	0.5579	0.9980	0.9750
HumanPseAAC	0.7685	5.05	0.5348	0.4092	0.9994	0.9379
Image	0.7375	2.02	0.5021	0.5080	0.9583	0.8522
IMDB-ECC-F	0.9343	15.04	0.9189	0.1915	0.9859	0.9856
IMDB-F	0.7490	13.16	0.6212	0.3418	0.9712	0.9347
LLOG-F	0.9795	36.35	0.9447	0.0976	0.5983	0.9981
mediamill	0.8233	68.19	0.5875	0.3266	0.9996	0.9910
medical	0.4694	15.48	0.4541	0.5427	0.5530	0.9942
Music	0.4833	2.66	0.3049	0.6684	0.7964	0.7622
OHSUMED-F	0.6892	11.32	0.7254	0.3576	0.9715	0.9716
PlantGO	0.6122	3.58	0.5001	0.5171	0.9897	0.9540
PlantPseAAC	0.7806	4.35	0.7092	0.3920	0.9490	0.9362
rcv1subset1	0.9192	64.40	0.9802	0.1048	0.9404	0.9999
REUTERS-K500-EX2	0.9867	60.31	0.9917	0.0668	0.7863	0.9999
scene	0.6203	1.89	0.5353	0.5843	0.9397	0.8972
sider_CDK_ECFP4	0.3908	20.80	0.3184	0.7264	0.6361	0.7313
sider_MordredDesc	0.4824	21.11	0.4258	0.6831	0.6778	0.7427
sider_RDKit_desc	0.4648	21.05	0.3831	0.7025	0.6511	0.7207
SLASHDOT-F	0.8652	12.08	0.8712	0.2059	0.7643	0.9912
Stackex_chemistry	0.9440	113.75	0.9890	0.0538	0.9200	1.0000
Stackex_chess	0.9911	156.36	0.9970	0.0277	0.5506	0.9999
Stackex_coffee	1.0000	81.70	1.0000	0.0364	0.2602	1.0000
Stackex_cooking	0.9923	259.66	0.9990	0.0216	0.9250	1.0000
Stackex_cs	0.9946	178.96	0.9996	0.0616	0.8978	1.0000
Stackex_philosophy	0.9925	153.65	1.0000	0.0222	0.7511	1.0000
tmc2007-500	0.4675	10.16	0.5726	0.4691	0.9770	0.9504
tox21_CDK_ECFP4	0.6644	6.55	0.6168	0.4409	0.9876	0.9016
tox21_RDKit_desc	0.6678	6.58	0.6243	0.4365	0.9953	0.9059
VirusGO	0.8095	1.21	0.1528	0.5933	0.8004	0.9442
VirusPseAAC	0.8095	2.45	0.5357	0.4417	0.8076	0.8293
Water-quality	0.6038	11.00	0.6089	0.5324	0.7648	0.6773
Yahoo_Arts	0.7637	12.12	0.7801	0.3296	0.9562	0.9326
Yahoo_Business	0.1319	4.17	0.2329	0.8390	0.8667	0.9978
Yahoo_Computers	0.4924	6.66	0.5698	0.5676	0.9008	0.9687
Yahoo_Education	0.7997	11.30	0.8232	0.3465	0.9040	0.9941
Yahoo_Entertainment	0.8421	5.91	0.8110	0.3619	0.9947	0.9885
Yahoo_Health	0.5114	10.18	0.5474	0.5031	0.8438	0.9883
Yahoo_Recreation	0.8433	9.97	0.8815	0.2891	1.0000	1.0000
Yahoo_Reference	0.4956	6.87	0.3790	0.5635	0.8039	0.9605
Yahoo_Science	0.9596	18.13	0.9736	0.1674	0.9750	1.0000
Yahoo_Social	0.5874	5.95	0.2749	0.5605	0.9094	0.9532
yeast	0.2707	6.84	0.4026	0.6925	0.8557	0.8802
Yelp	0.3569	1.97	0.4386	0.7377	0.9405	0.9056

Table 105: Detailed results for HOMER-K(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6337	5.74	0.5842	0.4805	0.9574	0.9448
3s-bbc1000	0.6389	2.64	0.6435	0.5150	0.8939	0.8811
3s-guardian1000	0.9032	2.94	0.4032	0.3634	0.6687	0.6195
3s-reuters1000	0.8000	2.50	0.7000	0.4303	0.8752	0.8769
bibtex	0.6486	82.57	0.6638	0.2954	0.9868	0.9857
birds	0.7692	9.21	0.6985	0.3443	0.8290	0.9209
bookmarks	0.8650	108.32	0.8088	0.1939	1.0000	1.0000
CAL500	0.5098	149.94	0.6206	0.3639	0.7801	0.9048
corel16k001	0.7720	102.57	0.7788	0.1905	0.9869	0.9869
Corel5k	0.7660	159.31	0.8333	0.2078	0.6757	0.9966
delicious	0.7576	901.50	0.6890	0.1501	0.9641	0.9653
emotions	0.4333	1.95	0.3014	0.7283	0.7977	0.7747
enron	0.8246	32.52	0.7967	0.2354	0.8212	0.9698
EukaryoteGO	0.6242	4.27	0.3734	0.5459	0.9654	0.9646
EukaryotePseAAC	0.8327	8.22	0.6454	0.3028	0.9265	0.9247
Eurlex-dc	0.7206	105.58	0.6667	0.3283	0.7774	1.0000
Eurlex-sm	0.4832	56.16	0.5522	0.4399	0.8060	1.0000
foodtruck	0.6098	4.32	0.4196	0.5678	0.8169	0.9026
genbase	0.6269	5.12	0.6567	0.5138	0.6667	1.0000
GnegativeGO	0.2929	0.90	0.2107	0.8001	0.8480	0.9726
GnegativePseAAC	0.3143	1.01	0.2000	0.7862	0.8318	0.9579
GpositivePseAAC	0.3654	0.73	0.1731	0.7692	0.9032	0.8995
HumanGO	0.7621	3.81	0.4839	0.4672	0.9523	0.9504
HumanPseAAC	0.7685	5.52	0.6305	0.3726	0.9063	0.9104
Image	0.5550	1.32	0.2067	0.6570	0.8107	0.8107
IMDB-ECC-F	0.9240	15.69	0.9822	0.1489	1.0000	0.9834
IMDB-F	0.8515	14.56	0.8391	0.2292	1.0000	0.9674
LLOG-F	0.9016	36.61	0.9064	0.1412	0.5927	0.9910
mediamill	0.8021	59.06	0.4812	0.2916	0.9537	0.9589
medical	0.5000	16.79	0.4915	0.5049	0.5436	0.9887
Music	0.4667	2.50	0.2898	0.6976	0.8310	0.7841
OHSUMED-F	0.6303	9.03	0.4912	0.4464	0.8792	0.8844
PlantGO	0.6735	3.91	0.5765	0.4735	0.9611	0.9606
PlantPseAAC	0.5918	3.57	0.5527	0.5165	0.9319	0.9359
rcv1subset1	0.8077	58.40	0.8361	0.2143	0.9226	0.9804
REUTERS-K500-EX2	0.8667	42.29	0.6803	0.2433	0.7759	0.9891
scene	0.6100	1.71	0.4564	0.6019	0.8118	0.8114
sider_CDK_ECFP4	0.3380	22.04	0.3505	0.7041	0.5926	0.7272
sider_MordredDesc	0.3239	24.04	0.5376	0.6222	0.7278	0.7178
sider_RDKit_desc	0.3028	23.29	0.5147	0.6713	0.7385	0.7665
SLASHDOT-F	0.6069	7.09	0.4653	0.4968	0.7502	0.9796
Stackex_chemistry	0.7471	99.85	0.7936	0.1990	0.9135	0.9936
Stackex_chess	0.7738	130.04	0.7698	0.1801	0.5448	0.9937
Stackex_coffee	0.8696	81.70	0.9312	0.0973	0.2583	0.9976
Stackex_cooking	0.8338	242.71	0.8622	0.1237	0.9221	0.9971
Stackex_cs	0.7165	151.02	0.7078	0.2388	0.8902	0.9928
Stackex_philosophy	0.7387	133.90	0.7430	0.2119	0.7443	0.9930
tmc2007-500	0.5990	7.01	0.3286	0.5019	0.8888	0.9029
tox21_CDK_ECFP4	0.6062	6.18	0.5913	0.4598	0.8677	0.8660
tox21_RDKit_desc	0.7329	6.61	0.6203	0.3938	0.8229	0.8119
VirusGO	0.5238	1.62	0.5714	0.6524	0.8173	0.9457
VirusPseAAC	0.4762	1.14	0.4881	0.6992	0.7443	0.8995
Water-quality	0.6698	10.25	0.5521	0.5334	0.6857	0.6788
Yahoo_Arts	0.6035	11.97	0.7831	0.4124	0.9435	0.9800
Yahoo_Business	0.1247	3.92	0.2098	0.8263	0.8719	0.9925
Yahoo_Computers	0.4821	6.32	0.5300	0.5776	0.8785	0.9433
Yahoo_Education	0.7156	10.31	0.6931	0.4384	0.9106	1.0000
Yahoo_Entertainment	0.7173	5.47	0.7242	0.4544	0.9632	0.9943
Yahoo_Health	0.5141	7.49	0.6061	0.5738	0.8158	0.9830
Yahoo_Recreation	0.5800	7.40	0.5502	0.5186	0.9979	0.9651
Yahoo_Reference	0.6608	6.56	0.6254	0.4921	0.8252	0.9856
Yahoo_Science	0.7411	16.49	0.7757	0.3181	0.9779	0.9775
Yahoo_Social	0.5829	6.10	0.3164	0.5585	0.9314	0.9740
yeast	0.3926	7.93	0.5013	0.6315	0.8127	0.8439
Yelp	0.2792	1.97	0.2544	0.7648	0.7563	0.7654

Table 106: Detailed results for HOMER-K(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6036	5.41	0.4974	0.5123	0.9790	0.9829
3s-bbc1000	0.7500	3.19	0.8889	0.4148	0.9887	0.9883
3s-guardian1000	0.6452	2.48	0.3226	0.5032	0.7799	0.6991
3s-reuters1000	0.8333	2.63	0.7167	0.4039	0.8536	0.8541
bibtex	0.6270	85.97	0.7467	0.2625	0.9970	0.9970
birds	0.5897	7.59	0.6533	0.4670	0.8736	0.9800
bookmarks	0.8516	113.03	0.8601	0.1653	0.9978	0.9980
CAL500	0.5490	151.06	0.7158	0.3814	0.8517	0.9629
corel16k001	0.9354	116.77	0.9662	0.0648	0.9991	0.9992
Corel5k	0.9320	164.32	0.9589	0.1398	0.6789	0.9997
delicious	0.5289	883.50	0.7935	0.3578	0.9620	0.9670
emotions	0.3000	1.75	0.1861	0.8644	0.7231	0.7327
enron	0.3918	25.71	0.3880	0.5317	0.8177	0.9735
EukaryoteGO	0.4427	3.44	0.2497	0.6702	0.9687	0.9790
EukaryotePseAAC	0.6409	5.60	0.5015	0.5001	0.9644	0.9694
Eurlex-dc	0.7600	116.96	0.7425	0.2627	0.7592	0.9996
Eurlex-sm	0.5395	59.11	0.6149	0.4015	0.8289	0.9980
foodtruck	0.3659	4.27	0.4378	0.6723	0.8619	0.9585
genbase	0.0746	0.66	0.0224	0.9495	0.6608	0.9968
GnegativeGO	0.1643	0.69	0.1321	0.8812	0.8535	0.9926
GnegativePseAAC	0.3071	1.16	0.2393	0.7760	0.8449	0.9775
GpositivePseAAC	0.2308	0.40	0.0962	0.8622	0.9574	0.9603
HumanGO	0.3376	2.23	0.2562	0.7314	0.9583	0.9728
HumanPseAAC	0.7363	5.08	0.6768	0.4111	0.9461	0.9487
Image	0.4100	0.94	0.1258	0.7584	0.8508	0.8763
IMDB-ECC-F	0.6612	13.05	0.6933	0.3545	0.9383	0.9419
IMDB-F	0.8243	14.49	0.8484	0.2552	0.9816	0.9798
LLOG-F	0.9016	35.50	0.9324	0.1366	0.5992	0.9992
mediamill	0.6116	57.00	0.4583	0.4513	0.9849	0.9894
medical	0.2551	9.85	0.2619	0.7256	0.5442	0.9932
Music	0.3667	1.92	0.1870	0.9384	0.6571	0.6399
OHSUMED-F	0.5714	11.45	0.6901	0.4090	0.9932	0.9934
PlantGO	0.4388	2.18	0.2517	0.6643	0.9678	0.9672
PlantPseAAC	0.6735	3.76	0.6599	0.4547	0.9590	0.9638
rcv1subset1	0.6200	53.88	0.7240	0.3053	0.9319	0.9890
REUTERS-K500-EX2	0.8639	48.69	0.7928	0.1837	0.7954	0.9836
scene	0.6183	1.59	0.2396	0.6071	0.8643	0.8445
sider_CDK_ECFP4	0.2817	20.72	0.3009	0.6893	0.5976	0.7063
sider_MordredDesc	0.2958	20.85	0.3311	0.6782	0.5924	0.6876
sider_RDKit_desc	0.2887	20.73	0.3076	0.6899	0.6175	0.7117
SLASHDOT-F	0.5831	8.13	0.5506	0.4706	0.7555	0.9845
Stackex_chemistry	0.8721	109.58	0.9270	0.1030	0.9193	0.9993
Stackex_chess	0.9345	139.21	0.8590	0.1040	0.5482	0.9973
Stackex_coffee	0.8696	78.13	0.9167	0.1128	0.2585	0.9976
Stackex_cooking	0.7961	238.64	0.8541	0.1416	0.9240	0.9989
Stackex_cs	0.7511	160.33	0.7984	0.2095	0.8959	0.9979
Stackex_philosophy	0.8392	144.57	0.8763	0.1246	0.7492	0.9982
tmc2007-500	0.3497	6.83	0.3337	0.6149	0.9357	0.9463
tox21_CDK_ECFP4	0.6918	6.84	0.8124	0.3933	0.9663	0.9660
tox21_RDKit_desc	0.7192	6.87	0.8371	0.3685	0.9803	0.9799
VirusGO	0.1429	0.95	0.1587	0.8683	0.8222	0.9758
VirusPseAAC	0.5238	1.48	0.4048	0.6393	0.7880	0.9430
Water-quality	0.3585	9.32	0.3591	0.7412	0.6422	0.6642
Yahoo_Arts	0.6382	13.28	0.7330	0.3703	0.9522	0.9914
Yahoo_Business	0.1283	3.67	0.1955	0.8512	0.8605	0.9964
Yahoo_Computers	0.4145	7.70	0.5449	0.5522	0.9032	0.9946
Yahoo_Education	0.7057	9.92	0.7103	0.4203	0.8970	0.9874
Yahoo_Entertainment	0.6968	5.00	0.6631	0.4599	0.9813	0.9789
Yahoo_Health	0.4539	8.08	0.5106	0.5898	0.8357	0.9932
Yahoo_Recreation	0.6430	7.65	0.6152	0.4584	0.9791	0.9799
Yahoo_Reference	0.5791	6.57	0.5895	0.5188	0.8130	0.9959
Yahoo_Science	0.7963	16.76	0.8229	0.2824	0.9705	0.9957
Yahoo_Social	0.5553	5.99	0.2727	0.5732	0.8863	0.9676
yeast	0.3430	6.45	0.4055	0.7113	0.8419	0.8873
Yelp	0.1844	0.86	0.0997	0.9980	0.3447	0.3282

Table 107: Detailed results for HOMER-K(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7508	7.19	0.7315	0.3700	0.9896	0.9872
3s-bbc1000	0.7500	3.19	0.8611	0.4186	0.9234	0.9209
3s-guardian1000	0.8387	2.68	0.3710	0.4164	0.8065	0.7219
3s-reuters1000	0.8667	2.50	0.6833	0.4094	0.8743	0.8649
bibtex	0.6959	87.08	0.7638	0.2346	0.9971	0.9971
birds	0.6410	8.82	0.7365	0.3964	0.8699	0.9737
bookmarks	0.8772	108.33	0.8200	0.1699	0.9987	0.9987
CAL500	0.4706	151.51	0.7831	0.3583	0.8334	0.9586
corel16k001	0.9470	117.72	0.9703	0.0607	0.9986	0.9987
Corel5k	0.9160	168.74	0.9675	0.1291	0.6788	0.9997
delicious	0.5643	900.88	0.8110	0.1558	0.9901	0.9947
emotions	0.4000	2.32	0.3819	0.7033	0.9235	0.8685
enron	0.4327	25.82	0.4089	0.5253	0.8135	0.9705
EukaryoteGO	0.4414	2.71	0.1819	0.6935	0.9842	0.9857
EukaryotePseAAC	0.7941	7.28	0.6493	0.3641	0.9770	0.9749
Eurlex-dc	0.7124	105.59	0.6574	0.3271	0.7593	0.9996
Eurlex-sm	0.4780	56.15	0.5591	0.4457	0.8289	0.9979
foodtruck	0.2927	4.07	0.4779	0.6950	0.8569	0.9480
genbase	0.0299	0.55	0.0075	0.9758	0.6644	0.9976
GnegativeGO	0.1286	0.34	0.0393	0.9205	0.8682	0.9952
GnegativePseAAC	0.3929	1.51	0.3750	0.7120	0.8593	0.9847
GpositivePseAAC	0.4808	1.04	0.4038	0.6843	0.9693	0.9667
HumanGO	0.5949	2.69	0.3033	0.6056	0.9763	0.9710
HumanPseAAC	0.9132	6.46	0.8264	0.2848	0.9645	0.9672
Image	0.6400	1.51	0.3642	0.6044	0.9039	0.9037
IMDB-ECC-F	0.9450	15.69	0.9772	0.1667	0.9965	0.9968
IMDB-F	0.8283	14.54	0.8515	0.2529	0.9881	0.9811
LLOG-F	0.9098	36.82	0.9399	0.1307	0.5987	0.9987
mediamill	0.3033	58.10	0.4488	0.4769	0.9851	0.9891
medical	0.3163	11.37	0.3282	0.6810	0.5471	0.9932
Music	0.5000	2.73	0.4231	0.6477	0.8944	0.8458
OHSUMED-F	0.6073	11.48	0.6977	0.3980	0.9946	0.9941
PlantGO	0.4388	2.27	0.2806	0.6703	0.9789	0.9714
PlantPseAAC	0.8469	4.61	0.8418	0.3330	0.9746	0.9758
rcv1subset1	0.7883	58.38	0.8196	0.2116	0.9328	0.9915
REUTERS-K500-EX2	0.7950	43.74	0.7200	0.2764	0.7836	0.9971
scene	0.6349	1.75	0.4388	0.5864	0.9184	0.9185
sider_CDK_ECFP4	0.2817	21.11	0.2410	0.7526	0.6155	0.7488
sider_MordredDesc	0.4155	22.80	0.4145	0.7024	0.6625	0.7702
sider_RDKit_desc	0.4225	22.60	0.3692	0.7042	0.6267	0.7464
SLASHDOT-F	0.7203	9.74	0.6821	0.3565	0.7648	0.9903
Stackex_chemistry	0.8649	108.92	0.9208	0.1094	0.9187	0.9987
Stackex_chess	0.8036	139.08	0.8302	0.1539	0.5468	0.9959
Stackex_coffee	0.9565	81.65	0.9493	0.0654	0.2565	0.9909
Stackex_cooking	0.8077	236.51	0.8347	0.1495	0.9237	0.9986
Stackex_cs	0.7229	162.40	0.7894	0.2225	0.8957	0.9975
Stackex_philosophy	0.7814	139.43	0.8121	0.1692	0.7483	0.9971
tmc2007-500	0.5115	8.46	0.5197	0.5207	0.9314	0.9419
tox21_CDK_ECFP4	0.6986	6.72	0.7704	0.3924	0.9451	0.9459
tox21_RDKit_desc	0.7295	6.62	0.7483	0.3888	0.9213	0.9185
VirusGO	0.4286	1.19	0.4405	0.7437	0.8272	0.9735
VirusPseAAC	0.7143	2.57	0.7143	0.4639	0.7395	0.8987
Water-quality	0.5283	10.30	0.5616	0.5765	0.7272	0.7323
Yahoo_Arts	0.6262	12.90	0.7132	0.3799	0.9514	0.9903
Yahoo_Business	0.1203	3.93	0.2110	0.8495	0.8626	0.9977
Yahoo_Computers	0.4803	6.34	0.5480	0.5792	0.8841	0.9643
Yahoo_Education	0.6908	10.29	0.7135	0.4226	0.9025	0.9941
Yahoo_Entertainment	0.7361	5.47	0.7128	0.4331	0.9864	0.9868
Yahoo_Health	0.5364	7.49	0.5885	0.5713	0.8385	0.9954
Yahoo_Recreation	0.5815	7.40	0.5532	0.5024	0.9859	0.9851
Yahoo_Reference	0.6575	6.55	0.6465	0.4728	0.8134	0.9962
Yahoo_Science	0.7574	16.47	0.7758	0.3122	0.9696	0.9949
Yahoo_Social	0.5767	6.08	0.2978	0.5738	0.9145	0.9809
yeast	0.3430	7.31	0.5404	0.6630	0.8538	0.8964
Yelp	0.2851	1.91	0.2519	0.7685	0.7853	0.7845

Table 108: Detailed results for HOMER-K(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7135	6.89	0.6829	0.4026	0.9878	0.9858
3s-bbc1000	0.7500	3.19	0.8889	0.4148	0.9969	0.9971
3s-guardian1000	0.9355	2.97	0.3065	0.3438	0.8905	0.6433
3s-reuters1000	0.8667	2.63	0.8667	0.3950	1.0000	1.0000
bibtex	0.6770	91.19	0.7825	0.2271	0.9981	0.9977
birds	0.8077	8.74	0.8487	0.3336	0.8822	0.9882
bookmarks	0.9352	111.86	0.8600	0.1285	0.9991	0.9991
CAL500	0.4804	151.24	0.7608	0.3748	0.8516	0.9645
corel16k001	0.9680	118.54	0.9878	0.0468	0.9998	0.9998
Corel5k	0.9240	169.26	0.9688	0.1284	0.6789	0.9998
delicious	0.7843	901.43	0.8534	0.1147	0.9924	0.9953
emotions	0.4083	2.83	0.3472	0.6531	0.8789	0.7909
enron	0.3538	27.31	0.4182	0.5413	0.8187	0.9677
EukaryoteGO	0.7297	5.95	0.5433	0.4397	0.9997	0.9804
EukaryotePseAAC	0.7272	6.18	0.5324	0.4271	1.0000	0.9652
Eurlex-dc	0.9953	140.70	0.9974	0.0640	0.7597	1.0000
Eurlex-sm	0.7747	76.51	0.9964	0.1610	0.8308	1.0000
foodtruck	0.3780	3.65	0.4309	0.6793	0.8094	0.9008
genbase	0.0224	0.59	0.0149	0.9750	0.6644	0.9974
GnegativeGO	0.2464	0.93	0.2071	0.8261	0.8705	0.9962
GnegativePseAAC	0.5929	1.96	0.6143	0.5793	0.8732	0.9970
GpositivePseAAC	0.4423	1.02	0.3269	0.7051	0.9749	0.9309
HumanGO	0.7379	3.42	0.4486	0.5012	0.9970	0.9628
HumanPseAAC	0.9630	7.38	0.9743	0.2265	0.9981	0.9981
Image	0.7350	1.99	0.3798	0.5096	0.9845	0.7918
IMDB-ECC-F	0.9516	15.76	0.9875	0.1613	0.9989	0.9989
IMDB-F	0.8408	14.74	0.8683	0.2426	0.9892	0.9839
LLOG-F	0.9672	38.52	0.9898	0.0832	0.5998	0.9994
mediamill	0.3337	63.13	0.5165	0.4307	0.9997	0.9929
medical	0.3980	12.83	0.4048	0.5930	0.5510	0.9945
Music	0.4333	2.92	0.3148	0.6466	0.9193	0.8133
OHSUMED-F	0.5836	11.33	0.6779	0.4146	0.9955	0.9943
PlantGO	0.7563	4.64	0.7417	0.3862	0.9986	0.9913
PlantPseAAC	0.9082	4.69	0.9082	0.2991	0.9936	0.9935
rcv1subset1	0.9750	64.54	1.0000	0.0894	0.9406	1.0000
REUTERS-K500-EX2	0.9867	60.31	0.9917	0.0668	0.7863	0.9999
scene	0.6203	1.87	0.5280	0.5873	0.9430	0.8996
sider_CDK_ECFP4	0.3768	20.66	0.2951	0.7309	0.6485	0.7465
sider_MordredDesc	0.4965	21.00	0.3985	0.6887	0.6885	0.7532
sider_RDKit_desc	0.5211	20.94	0.3810	0.6933	0.6731	0.7388
SLASHDOT-F	0.8097	10.92	0.7919	0.2682	0.7657	0.9921
Stackex_chemistry	0.9411	113.84	0.9866	0.0559	0.9199	1.0000
Stackex_chess	0.9762	155.11	0.9725	0.0424	0.5501	0.9994
Stackex_coffee	1.0000	81.70	1.0000	0.0364	0.2602	1.0000
Stackex_cooking	0.9092	251.38	0.9442	0.0695	0.9247	0.9996
Stackex_cs	0.9026	175.11	0.9313	0.1206	0.8974	0.9992
Stackex_philosophy	0.9899	153.17	0.9979	0.0241	0.7509	0.9998
tmc2007-500	0.4671	10.37	0.7116	0.4441	0.9880	0.9790
tox21_CDK_ECFP4	0.9007	7.31	0.9554	0.2917	0.9985	0.9983
tox21_RDKit_desc	0.8973	7.32	0.9610	0.2920	0.9954	0.9952
VirusGO	0.3333	0.90	0.3472	0.7917	0.8256	0.9699
VirusPseAAC	0.8095	2.45	0.8036	0.4427	0.7645	0.7970
Water-quality	0.5283	10.78	0.5776	0.5516	0.7516	0.6761
Yahoo_Arts	0.7610	15.35	0.8585	0.2666	0.9615	1.0000
Yahoo_Business	0.1301	4.17	0.2321	0.8394	0.8667	0.9979
Yahoo_Computers	0.4924	6.66	0.5698	0.5676	0.9008	0.9687
Yahoo_Education	0.7997	11.30	0.8232	0.3465	0.9040	0.9941
Yahoo_Entertainment	0.8421	5.91	0.8110	0.3619	0.9947	0.9885
Yahoo_Health	0.5114	10.18	0.5474	0.5031	0.8438	0.9882
Yahoo_Recreation	0.8433	9.97	0.8815	0.2891	1.0000	1.0000
Yahoo_Reference	0.4956	6.87	0.3790	0.5635	0.8029	0.9600
Yahoo_Science	0.9596	18.13	0.9736	0.1674	0.9750	1.0000
Yahoo_Social	0.5376	5.98	0.2885	0.5789	0.8773	0.9661
yeast	0.2810	6.93	0.4290	0.6850	0.8789	0.8870
Yelp	0.3460	2.35	0.3922	0.7025	0.7631	0.6250

Table 109: Detailed results for HOMER-R(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7736	4.54	0.4374	0.4461	0.9348	0.9322
3s-bbc1000	0.7222	2.28	0.5625	0.5224	0.7682	0.7705
3s-guardian1000	0.6452	2.26	0.5806	0.5344	0.7521	0.7651
3s-reuters1000	0.7000	2.20	0.5083	0.5083	0.8133	0.7910
bibtex	0.7716	83.29	0.6806	0.2520	0.9823	0.9823
birds	0.7436	7.92	0.6162	0.3923	0.8115	0.9148
bookmarks	0.8467	110.24	0.8270	0.1679	1.0000	1.0000
CAL500	0.6471	151.76	0.6379	0.2592	0.7285	0.8322
corel16k001	0.9455	108.59	0.8384	0.1110	0.9850	0.9853
Corel5k	0.7700	161.32	0.8666	0.1835	0.6763	0.9968
delicious	0.7408	904.52	0.7759	0.1173	0.9745	0.9770
emotions	0.6167	3.17	0.4194	0.5553	0.6250	0.6203
enron	0.7076	31.33	0.6981	0.3080	0.8098	0.9581
EukaryoteGO	0.8160	5.79	0.5629	0.4251	0.9375	0.9447
EukaryotePseAAC	0.9344	9.98	0.7404	0.2241	0.9029	0.9018
Eurlex-dc	0.7163	105.59	0.6692	0.3499	0.7832	0.9897
Eurlex-sm	0.5989	58.87	0.6436	0.3781	0.8204	0.9854
foodtruck	0.4878	4.46	0.4706	0.6162	0.8520	0.9450
genbase	0.7313	5.87	0.5796	0.4544	0.6484	0.9744
GnegativeGO	0.3500	0.77	0.1286	0.7956	0.7735	0.8518
GnegativePseAAC	0.3571	1.20	0.1857	0.7482	0.6994	0.8200
GpositivePseAAC	0.5769	0.96	0.2308	0.6603	0.8253	0.8688
HumanGO	0.5981	3.86	0.5257	0.5317	0.9526	0.9571
HumanPseAAC	0.8199	5.92	0.7078	0.3389	0.8840	0.8846
Image	0.5050	1.55	0.4575	0.6437	0.7710	0.7822
IMDB-ECC-F	0.6557	12.25	0.6713	0.3980	0.9585	0.9053
IMDB-F	0.9636	15.60	0.9183	0.1672	0.9792	0.9948
LLOG-F	0.8934	36.08	0.8559	0.1531	0.5860	0.9750
mediamill	0.9620	66.68	0.5808	0.1520	0.9124	0.9061
medical	0.7041	19.28	0.5561	0.3756	0.5321	0.9745
Music	0.7500	3.22	0.5185	0.5385	0.6470	0.6495
OHSUMED-F	0.6303	9.03	0.4912	0.4464	0.8792	0.8844
PlantGO	0.6020	3.98	0.6020	0.4958	0.9542	0.9478
PlantPseAAC	0.7041	3.41	0.5986	0.4657	0.9050	0.9073
rcv1subset1	0.8062	61.42	0.8958	0.1901	0.9127	0.9803
REUTERS-K500-EX2	0.8667	42.29	0.6803	0.2433	0.7759	0.9891
scene	0.5726	1.12	0.2220	0.6566	0.8505	0.8393
sider_CDK_ECFP4	0.3803	23.25	0.4181	0.6829	0.5587	0.6392
sider_MordredDesc	0.3873	24.42	0.6312	0.5739	0.7006	0.6499
sider_RDKit_desc	0.4577	24.32	0.6586	0.5973	0.6881	0.6709
SLASHDOT-F	0.8021	7.77	0.4532	0.3682	0.7344	0.9461
Stackex_chemistry	0.7989	99.62	0.8035	0.1670	0.9088	0.9886
Stackex_chess	0.8393	144.75	0.8422	0.1228	0.5446	0.9897
Stackex_coffee	0.8696	81.70	0.9312	0.0973	0.2583	0.9976
Stackex_cooking	0.8338	242.71	0.8622	0.1237	0.9221	0.9971
Stackex_cs	0.7165	151.02	0.7078	0.2388	0.8902	0.9928
Stackex_philosophy	0.9673	137.95	0.7841	0.1036	0.7389	0.9854
tmc2007-500	0.5990	7.01	0.3286	0.5019	0.8888	0.9029
tox21_CDK_ECFP4	0.6747	5.86	0.5991	0.4527	0.8748	0.8798
tox21_RDKit_desc	0.6712	6.44	0.6128	0.4238	0.8149	0.8228
VirusGO	0.8095	2.10	0.7222	0.5008	0.7465	0.8297
VirusPseAAC	0.8095	1.62	0.2381	0.5286	0.6455	0.8442
Water-quality	0.4434	10.38	0.5167	0.5725	0.7114	0.7076
Yahoo_Arts	0.7503	11.02	0.6872	0.3583	0.9065	0.9416
Yahoo_Business	0.1300	3.74	0.1964	0.8598	0.8547	1.0000
Yahoo_Computers	0.5011	6.35	0.5625	0.6032	0.8998	0.9599
Yahoo_Education	0.7505	10.54	0.7639	0.4050	0.8983	0.9711
Yahoo_Entertainment	0.6526	5.28	0.7121	0.4882	0.9749	0.9945
Yahoo_Health	0.3380	8.01	0.4307	0.6455	0.8117	0.9747
Yahoo_Recreation	0.7083	7.56	0.5726	0.4106	0.9592	0.9791
Yahoo_Reference	0.6341	6.71	0.6570	0.4603	0.7755	0.9919
Yahoo_Science	0.8130	16.59	0.7873	0.2896	0.9686	1.0000
Yahoo_Social	0.6020	9.28	0.6064	0.4948	0.9006	1.0000
yeast	0.3884	8.06	0.4502	0.6172	0.7850	0.8194
Yelp	0.2792	1.81	0.2450	0.7712	0.7313	0.7281

Table 110: Detailed results for HOMER-R(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7415	4.62	0.4008	0.4696	0.9640	0.9644
3s-bbc1000	0.6389	2.11	0.4074	0.5724	0.7971	0.7971
3s-guardian1000	0.6774	2.00	0.3629	0.5487	0.7711	0.7909
3s-reuters1000	0.7667	2.57	0.5833	0.4447	0.7598	0.7375
bibtex	0.9338	90.16	0.7999	0.1503	0.9969	0.9969
birds	0.7692	7.64	0.6201	0.3902	0.8303	0.9383
bookmarks	0.9651	110.53	0.8403	0.1062	0.9979	0.9980
CAL500	0.6471	150.80	0.6800	0.2857	0.8018	0.8873
corel16k001	0.9760	118.39	0.9838	0.0457	0.9992	0.9992
Corel5k	0.9580	169.49	0.9898	0.1160	0.6791	0.9999
delicious	0.8011	917.14	0.9221	0.0701	0.9934	0.9986
emotions	0.7333	3.05	0.5861	0.5175	0.6459	0.6120
enron	0.9649	30.52	0.5551	0.2717	0.8066	0.9556
EukaryoteGO	0.6229	4.85	0.5819	0.5041	0.9634	0.9707
EukaryotePseAAC	0.6808	6.11	0.5534	0.4626	0.9641	0.9695
Eurlex-dc	0.7600	116.96	0.7425	0.2627	0.7592	0.9996
Eurlex-sm	0.7819	64.36	0.7138	0.2686	0.8269	0.9961
foodtruck	0.7317	5.05	0.3576	0.5463	0.8435	0.9131
genbase	0.7313	1.81	0.0224	0.5288	0.6297	0.9410
GnegativeGO	0.5786	1.23	0.0357	0.6213	0.7070	0.8487
GnegativePseAAC	0.8643	1.71	0.2232	0.5011	0.7681	0.8334
GpositivePseAAC	0.2308	0.54	0.1538	0.8413	0.8107	0.9238
HumanGO	0.4727	2.69	0.3136	0.6692	0.9453	0.9630
HumanPseAAC	0.8907	5.74	0.8926	0.3268	0.9683	0.9683
Image	0.6300	1.54	0.2342	0.6486	0.6607	0.6614
IMDB-ECC-F	0.6612	13.05	0.6933	0.3545	0.9383	0.9419
IMDB-F	0.8243	14.49	0.8484	0.2552	0.9816	0.9798
LLOG-F	0.9672	35.36	0.9385	0.1112	0.5987	0.9985
mediamill	0.1613	62.54	0.5135	0.4118	0.9697	0.9761
medical	0.7143	9.81	0.2670	0.5166	0.5060	0.9490
Music	0.5833	2.83	0.2903	0.6162	0.6947	0.6609
OHSUMED-F	0.8076	10.43	0.5801	0.3434	0.9417	0.9440
PlantGO	0.5408	2.30	0.3912	0.6335	0.9662	0.9676
PlantPseAAC	0.8571	4.30	0.8469	0.3520	0.9767	0.9777
rcv1subset1	0.7683	63.38	0.8966	0.1734	0.9379	0.9974
REUTERS-K500-EX2	0.8462	48.72	0.7875	0.2200	0.7844	0.9870
scene	0.5851	1.12	0.1359	0.6681	0.8469	0.8520
sider_CDK_ECFP4	0.0986	22.88	0.4835	0.6639	0.5180	0.5786
sider_MordredDesc	0.4155	25.06	0.5015	0.5596	0.4895	0.4510
sider_RDKit_desc	0.4437	24.42	0.5486	0.6017	0.5419	0.5284
SLASHDOT-F	0.5726	8.27	0.5453	0.4748	0.7446	0.9754
Stackex_chemistry	0.9124	110.96	0.9510	0.0823	0.9194	0.9993
Stackex_chess	0.8810	151.65	0.9359	0.0821	0.5491	0.9982
Stackex_coffee	0.8696	78.13	0.9167	0.1128	0.2585	0.9976
Stackex_cooking	0.8821	244.34	0.8922	0.1019	0.9242	0.9992
Stackex_cs	0.9340	176.40	0.9275	0.1008	0.8964	0.9986
Stackex_philosophy	0.8970	146.29	0.9091	0.0942	0.7499	0.9981
tmc2007-500	0.8678	8.15	0.3383	0.3465	0.8889	0.8695
tox21_CDK_ECFP4	0.6473	6.62	0.7717	0.4142	0.9645	0.9627
tox21_RDKit_desc	0.7363	6.49	0.7040	0.3968	0.9402	0.9401
VirusGO	0.3810	1.29	0.1746	0.7542	0.7622	0.8729
VirusPseAAC	0.7619	2.00	0.3810	0.5175	0.6619	0.7767
Water-quality	0.6226	10.38	0.5681	0.5091	0.6856	0.6293
Yahoo_Arts	0.7210	12.06	0.6386	0.3604	0.9165	0.9563
Yahoo_Business	0.1907	3.71	0.2024	0.8239	0.8548	0.9931
Yahoo_Computers	0.7839	8.36	0.5635	0.3849	0.9008	0.9792
Yahoo_Education	0.7889	10.83	0.7688	0.3537	0.8988	0.9871
Yahoo_Entertainment	0.8515	6.13	0.7909	0.3550	0.9768	0.9768
Yahoo_Health	0.5983	8.57	0.5113	0.5035	0.8241	0.9730
Yahoo_Recreation	0.7654	8.18	0.6596	0.3905	0.9720	0.9658
Yahoo_Reference	0.9352	7.02	0.5383	0.3489	0.7744	0.9656
Yahoo_Science	0.9347	17.63	0.9435	0.1915	0.9744	0.9994
Yahoo_Social	0.5297	9.64	0.5701	0.5101	0.9117	0.9916
yeast	0.3306	7.10	0.3420	0.9970	0.5009	0.5010
Yelp	0.7976	2.10	0.1550	0.5830	0.7943	0.6702

Table 111: Detailed results for HOMER-R(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7850	7.05	0.6778	0.3683	0.9877	0.9868
3s-bbc1000	0.7222	3.08	0.7153	0.4412	0.8437	0.7925
3s-guardian1000	0.8065	2.74	0.5645	0.4218	0.7884	0.7237
3s-reuters1000	0.9000	3.07	0.8667	0.3419	0.8168	0.6641
bibtex	0.8689	89.21	0.8059	0.1771	0.9967	0.9970
birds	0.7692	8.64	0.7266	0.3698	0.8448	0.9396
bookmarks	0.8437	110.27	0.8367	0.1769	0.9988	0.9988
CAL500	0.6471	152.00	0.8101	0.2677	0.7943	0.9055
corel16k001	0.9818	119.23	0.9914	0.0413	0.9994	0.9994
Corel5k	0.9680	168.98	0.9907	0.1160	0.6790	0.9998
delicious	0.7154	918.42	0.9166	0.0811	0.9933	0.9984
emotions	0.6833	3.40	0.6486	0.5260	0.6654	0.6794
enron	0.3450	29.37	0.5981	0.4278	0.8223	0.9676
EukaryoteGO	0.5521	3.49	0.2426	0.5980	0.9589	0.9594
EukaryotePseAAC	0.9138	9.50	0.8407	0.2362	0.9741	0.9755
Eurlex-dc	0.7124	105.59	0.6574	0.3271	0.7593	0.9996
Eurlex-sm	0.6067	58.87	0.6300	0.3665	0.8272	0.9962
foodtruck	0.3415	4.80	0.4608	0.6717	0.8499	0.9204
genbase	0.2985	1.24	0.0597	0.8108	0.6354	0.9777
GnegativeGO	0.4500	0.77	0.0393	0.7441	0.8212	0.9494
GnegativePseAAC	0.6286	1.58	0.3161	0.5966	0.7758	0.9084
GpositivePseAAC	0.5385	1.23	0.5000	0.6362	0.8855	0.8881
HumanGO	0.6431	2.86	0.2953	0.5661	0.9702	0.9638
HumanPseAAC	0.9293	6.38	0.9159	0.2671	0.9520	0.9496
Image	0.5900	1.46	0.3054	0.6326	0.8706	0.8729
IMDB-ECC-F	0.6449	12.23	0.6514	0.3738	0.9801	0.9299
IMDB-F	0.9460	15.59	0.9078	0.1825	0.9747	0.9728
LLOG-F	0.9590	37.20	0.9631	0.0986	0.5993	0.9988
mediamill	0.4406	63.37	0.5775	0.3322	0.9646	0.9688
medical	0.4694	10.49	0.2959	0.6100	0.5490	0.9890
Music	0.5167	2.72	0.4519	0.6450	0.8149	0.8202
OHSUMED-F	0.7337	10.59	0.5619	0.3515	0.9427	0.9225
PlantGO	0.5408	2.08	0.3036	0.6252	0.9720	0.9669
PlantPseAAC	0.8878	4.52	0.8418	0.3212	0.9848	0.9835
rcv1subset1	0.8167	61.44	0.8820	0.1671	0.9343	0.9917
REUTERS-K500-EX2	0.8900	48.56	0.8169	0.1838	0.7836	0.9966
scene	0.6349	1.93	0.4772	0.5724	0.8983	0.8962
sider_CDK_ECFP4	0.4155	23.93	0.5157	0.6506	0.5092	0.5948
sider_MordredDesc	0.4366	23.88	0.5818	0.6222	0.5340	0.5933
sider_RDKit_desc	0.5775	23.85	0.6370	0.5935	0.5225	0.5561
SLASHDOT-F	0.8734	10.54	0.7153	0.2618	0.7466	0.9739
Stackex_chemistry	0.8966	110.12	0.9442	0.0880	0.9188	0.9988
Stackex_chess	0.9702	149.15	0.9165	0.0696	0.5489	0.9969
Stackex_coffee	0.9565	81.65	0.9493	0.0654	0.2565	0.9909
Stackex_cooking	0.8580	247.94	0.9099	0.0984	0.9243	0.9993
Stackex_cs	0.9004	171.00	0.9217	0.1145	0.8965	0.9985
Stackex_philosophy	0.8719	145.75	0.8884	0.1077	0.7484	0.9971
tmc2007-500	0.5059	9.24	0.4916	0.4825	0.9110	0.8961
tox21_CDK_ECFP4	0.7705	6.80	0.7892	0.3719	0.9442	0.9410
tox21_RDKit_desc	0.7226	6.77	0.7797	0.3837	0.9446	0.9442
VirusGO	0.6667	1.29	0.1667	0.6356	0.7500	0.9299
VirusPseAAC	0.7143	2.52	0.7262	0.4556	0.7633	0.9067
Water-quality	0.3962	10.26	0.5597	0.5999	0.7673	0.7673
Yahoo_Arts	0.7904	12.52	0.6798	0.3187	0.9271	0.9662
Yahoo_Business	0.1266	3.73	0.1984	0.8459	0.8582	0.9949
Yahoo_Computers	0.4803	6.34	0.5480	0.5792	0.8841	0.9643
Yahoo_Education	0.7623	10.54	0.7429	0.3820	0.9015	0.9919
Yahoo_Entertainment	0.6685	5.31	0.7015	0.4669	0.9732	0.9774
Yahoo_Health	0.3474	8.02	0.4356	0.6229	0.8335	0.9874
Yahoo_Recreation	0.7319	7.55	0.5598	0.4126	0.9623	0.9641
Yahoo_Reference	0.6501	6.70	0.6613	0.4733	0.7997	0.9846
Yahoo_Science	0.8243	16.58	0.7972	0.2822	0.9704	0.9958
Yahoo_Social	0.5949	9.29	0.5868	0.4783	0.9185	0.9967
yeast	0.6281	8.81	0.5445	0.5341	0.7771	0.7800
Yelp	0.2792	1.65	0.4069	0.7991	0.8137	0.7913

Table 112: Detailed results for HOMER-R(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.8979	7.35	0.7394	0.2918	0.9848	0.9850
3s-bbc1000	0.7500	3.12	0.8403	0.4215	0.9780	0.7796
3s-guardian1000	0.5484	2.29	0.5806	0.5812	0.9895	0.8583
3s-reuters1000	0.8667	2.75	0.8625	0.3851	1.0000	0.7521
bibtex	0.8568	93.63	0.8370	0.1675	0.9975	0.9977
birds	0.9231	9.68	0.9423	0.2651	0.8918	0.9927
bookmarks	0.9352	111.86	0.8600	0.1285	0.9991	0.9991
CAL500	0.5784	150.03	0.6704	0.3164	0.7919	0.8853
corel16k001	0.9913	119.27	0.9955	0.0378	0.9999	0.9999
Corel5k	0.9600	169.40	0.9888	0.1174	0.6790	0.9998
delicious	0.8160	917.69	0.9594	0.0548	0.9944	0.9995
emotions	0.5000	2.62	0.3799	0.6338	0.8909	0.8109
enron	0.6637	32.58	0.8049	0.2416	0.8386	0.9780
EukaryoteGO	0.8597	9.82	0.8610	0.2609	0.9923	0.9918
EukaryotePseAAC	0.9936	11.07	0.9936	0.1458	0.9998	0.9998
Eurlex-dc	0.9953	140.70	0.9974	0.0640	0.7597	1.0000
Eurlex-sm	0.7747	76.51	0.9964	0.1610	0.8308	1.0000
foodtruck	0.2317	4.85	0.5124	0.7109	0.8982	0.9522
genbase	0.4851	2.71	0.2875	0.6488	0.6424	0.9704
GnegativeGO	0.4107	0.72	0.2241	0.7679	0.8374	0.9599
GnegativePseAAC	0.4893	1.64	0.4009	0.6503	0.8371	0.9133
GpositivePseAAC	0.5385	0.98	0.3750	0.6715	0.9751	0.8917
HumanGO	0.8666	5.48	0.8796	0.3499	0.9938	0.9768
HumanPseAAC	0.9646	7.39	0.9775	0.2255	0.9989	0.9989
Image	0.7600	2.00	0.5779	0.5016	0.9886	0.7842
IMDB-ECC-F	0.9564	15.77	0.9858	0.1582	0.9968	0.9968
IMDB-F	0.8471	14.76	0.8486	0.2402	0.9681	0.9648
LLOG-F	0.9836	38.84	1.0000	0.0732	0.5999	0.9999
mediamill	0.3226	71.47	0.6306	0.3335	0.9976	0.9756
medical	0.6429	21.64	0.7015	0.3370	0.5539	0.9943
Music	0.6500	3.23	0.4748	0.5632	0.7429	0.6426
OHSUMED-F	0.8177	12.31	0.7889	0.2840	0.9850	0.9855
PlantGO	0.6852	4.09	0.7006	0.4566	0.9892	0.9830
PlantPseAAC	0.9286	4.73	0.9286	0.2862	0.9982	0.9981
rcv1subset1	0.9750	64.54	1.0000	0.0894	0.9406	1.0000
REUTERS-K500-EX2	0.9867	60.31	0.9917	0.0668	0.7863	0.9999
scene	0.6660	2.14	0.6043	0.5346	0.9551	0.9246
sider_CDK_ECFP4	0.5528	24.03	0.6653	0.5892	0.5356	0.5633
sider_MordredDesc	0.5176	24.43	0.8372	0.5689	0.6182	0.6273
sider_RDKit_desc	0.4965	24.24	0.7838	0.5696	0.5457	0.5417
SLASHDOT-F	0.9643	12.19	0.8856	0.1605	0.7648	0.9903
Stackex_chemistry	0.9440	113.90	0.9899	0.0532	0.9200	1.0000
Stackex_chess	0.9911	156.94	0.9987	0.0259	0.5507	1.0000
Stackex_coffee	1.0000	81.70	1.0000	0.0364	0.2602	1.0000
Stackex_cooking	0.9932	259.73	1.0000	0.0206	0.9250	1.0000
Stackex_cs	0.9957	179.06	1.0000	0.0613	0.8978	1.0000
Stackex_philosophy	0.9925	153.65	1.0000	0.0222	0.7511	1.0000
tmc2007-500	0.4517	11.83	0.6221	0.4312	0.9705	0.9006
tox21_CDK_ECFP4	0.9041	7.34	0.9697	0.2879	0.9987	0.9990
tox21_RDKit_desc	0.9075	7.35	0.9712	0.2881	0.9973	0.9972
VirusGO	0.6190	1.24	0.3790	0.6604	0.7942	0.9471
VirusPseAAC	0.6905	1.71	0.4345	0.5655	0.7679	0.9054
Water-quality	0.5236	11.19	0.6327	0.5175	0.7409	0.6248
Yahoo_Arts	0.7623	15.36	0.8591	0.2660	0.9614	0.9998
Yahoo_Business	0.1319	4.70	0.2633	0.7712	0.8539	0.9626
Yahoo_Computers	0.4924	6.66	0.5698	0.5676	0.9008	0.9687
Yahoo_Education	0.7997	11.30	0.8232	0.3465	0.9040	0.9941
Yahoo_Entertainment	0.8421	5.91	0.8110	0.3619	0.9947	0.9885
Yahoo_Health	0.5114	10.18	0.5474	0.5031	0.8438	0.9882
Yahoo_Recreation	0.8433	9.97	0.8815	0.2891	1.0000	1.0000
Yahoo_Reference	0.4956	6.87	0.3790	0.5635	0.8029	0.9600
Yahoo_Science	0.9596	18.13	0.9736	0.1674	0.9750	1.0000
Yahoo_Social	0.5219	9.64	0.5912	0.5004	0.9360	0.9744
yeast	0.5310	7.45	0.5708	0.5843	0.8279	0.8222
Yelp	0.3499	2.39	0.4103	0.6988	0.7665	0.6353

Table 113: Detailed results for ML-TREE(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4061	4.75	0.3142	0.6134	0.9962	0.9091
3s-bbc1000	0.7778	2.75	0.7083	0.4715	0.8000	0.7689
3s-guardian1000	0.6129	2.29	0.5968	0.5500	0.7722	0.7770
3s-reuters1000	0.8000	2.57	0.7500	0.4206	0.8277	0.8127
bibtex	0.5673	84.23	0.7041	0.2940	1.0000	0.9981
birds	0.8974	10.15	0.8451	0.2459	0.8254	0.8976
bookmarks	0.6831	99.19	0.7193	0.3047	0.9660	0.9901
CAL500	0.6078	151.20	0.7039	0.3454	0.8073	0.9080
corel16k001	0.9564	117.68	0.9447	0.0664	0.9900	0.9833
Corel5k	0.8124	166.06	0.8590	0.1518	0.6850	0.9888
delicious	0.7788	899.38	0.7745	0.1149	0.9405	0.9503
emotions	0.5500	3.05	0.5542	0.5865	0.7469	0.7043
enron	0.8246	33.05	0.8417	0.2097	0.8331	0.9546
EukaryoteGO	0.2071	4.11	0.2633	0.7554	0.9862	1.0000
EukaryotePseAAC	0.8958	10.36	0.8820	0.2101	0.9623	0.9581
Eurlex-dc	0.3286	72.99	0.3779	0.6220	0.7665	1.0000
Eurlex-sm	0.2552	49.23	0.4048	0.6328	0.8274	0.9748
foodtruck	0.3415	4.54	0.4692	0.6564	0.7501	0.8771
genbase	0.2537	3.12	0.2811	0.7777	0.6590	0.9925
GnegativeGO	0.6143	1.94	0.4571	0.5843	0.7659	0.8759
GnegativePseAAC	0.6143	1.96	0.4464	0.5842	0.7688	0.9074
GpositivePseAAC	0.4423	0.77	0.2885	0.7324	0.8375	0.8268
HumanGO	0.2223	2.27	0.1468	0.6112	0.9380	0.9638
HumanPseAAC	0.8489	6.60	0.7617	0.3022	0.9290	0.9166
Image	0.6800	1.78	0.2954	0.5622	0.6394	0.6121
IMDB-ECC-F	0.7912	12.94	0.6897	0.2816	0.8274	0.8372
IMDB-F	0.7616	13.44	0.7075	0.3031	0.8420	0.8507
LLOG-F	0.9508	37.40	0.9543	0.1007	0.5851	0.9834
mediamill	0.7418	65.43	0.5597	0.2875	0.9634	0.9581
medical	0.9082	22.96	0.8929	0.1688	0.5340	0.9753
Music	0.3667	2.50	0.3736	0.7025	0.7196	0.7305
OHSUMED-F	0.9541	13.20	0.9171	0.1795	0.9700	0.9269
PlantGO	0.9184	5.38	0.8673	0.2556	0.9194	0.9110
PlantPseAAC	0.7551	4.35	0.6888	0.4036	0.9605	0.9431
rcv1subset1	0.6765	57.63	0.7543	0.2881	0.9211	0.9623
REUTERS-K500-EX2	0.9717	60.10	0.9668	0.0751	0.7794	0.9885
scene	0.7303	2.32	0.4326	0.4860	0.7487	0.6883
sider_CDK_ECFP4	0.3028	22.30	0.4257	0.7341	0.6917	0.7498
sider_MordredDesc	0.4296	22.27	0.5324	0.6782	0.6589	0.7264
sider_RDKit_desc	0.5070	22.49	0.5365	0.6667	0.7111	0.7923
SLASHDOT-F	0.8179	8.73	0.4565	0.3171	0.7219	0.8805
Stackex_chemistry	0.9856	106.54	0.9134	0.0753	0.9090	0.9869
Stackex_chess	0.9405	152.86	0.9469	0.0525	0.5446	0.9862
Stackex_coffee	0.9130	81.91	0.9748	0.0573	0.2565	0.9830
Stackex_cooking	0.6781	237.90	0.7810	0.2039	0.9213	1.0000
Stackex_cs	0.6339	163.74	0.7638	0.2376	0.8783	0.9796
Stackex_philosophy	0.9397	150.98	0.9439	0.0624	0.7447	0.9860
tmc2007-500	0.5836	11.46	0.6791	0.4012	0.9378	0.9236
tox21_CDK_ECFP4	0.7466	6.93	0.6925	0.3781	0.8265	0.8258
tox21_RDKit_desc	0.8082	6.81	0.6927	0.3624	0.8724	0.8437
VirusGO	0.4762	1.67	0.3175	0.6681	0.7206	0.8974
VirusPseAAC	0.7143	2.05	0.4762	0.5187	0.6905	0.8746
Water-quality	0.6226	10.77	0.8031	0.5035	0.8009	0.8053
Yahoo_Arts	0.5797	11.02	0.5167	0.4726	0.8668	0.9138
Yahoo_Business	0.1371	2.69	0.1416	0.8635	0.6517	0.9376
Yahoo_Computers	0.4611	6.17	0.4058	0.6153	0.7503	0.8816
Yahoo_Education	0.5337	6.65	0.5073	0.5515	0.8204	0.9256
Yahoo_Entertainment	0.4537	3.89	0.4361	0.6303	0.8418	0.8927
Yahoo_Health	0.3771	4.83	0.2642	0.7038	0.7144	0.9030
Yahoo_Recreation	0.4400	5.98	0.4409	0.6041	0.8933	0.8654
Yahoo_Reference	0.4318	5.24	0.4498	0.5972	0.7672	0.9912
Yahoo_Science	0.5927	13.90	0.5947	0.4327	0.9659	0.9531
Yahoo_Social	0.3765	7.29	0.3737	0.6259	0.8978	0.9401
yeast	0.5744	7.74	0.5351	0.5570	0.8192	0.8436
Yelp	0.3480	1.73	0.3520	0.7627	0.6389	0.7523

Table 114: Detailed results for ML-TREE(SVM)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9429	9.54	0.8815	0.1870	0.9838	0.9416
3s-bbc1000	0.8333	3.08	0.7639	0.4071	0.9307	0.8433
3s-guardian1000	0.8065	2.74	0.5968	0.4430	0.9306	0.8364
3s-reuters1000	0.8667	2.77	0.7917	0.3839	0.7513	0.6041
bibtex	0.9946	95.45	0.9892	0.0429	0.9915	0.9875
birds	0.8718	9.13	0.7952	0.2866	0.8125	0.9051
bookmarks	0.6857	99.23	0.7007	0.3070	0.9622	0.9580
CAL500	0.5490	151.18	0.7878	0.3012	0.7840	0.9033
corel16k001	0.9731	118.01	0.9570	0.0532	0.9794	0.9775
Corel5k	0.9160	170.41	0.9154	0.1136	0.6637	0.9813
delicious	0.7275	899.36	0.7570	0.1361	0.9480	0.9596
emotions	0.7000	3.85	0.7375	0.4722	0.7649	0.7263
enron	0.9181	33.89	0.9483	0.1494	0.8265	0.9570
EukaryoteGO	0.9291	11.04	0.9343	0.1739	1.0000	0.9582
EukaryotePseAAC	0.9189	7.10	0.6737	0.2872	1.0000	0.9476
Eurlex-dc	0.3005	72.96	0.3640	0.6237	0.7298	0.9762
Eurlex-sm	0.1980	49.22	0.3990	0.5937	0.8289	0.9700
foodtruck	0.3902	4.90	0.4607	0.6586	0.8721	0.9348
genbase	0.7910	5.54	0.7239	0.3925	0.6292	0.9641
GnegativeGO	0.5214	1.30	0.2750	0.6685	0.8712	0.9485
GnegativePseAAC	0.6786	1.45	0.2393	0.5901	0.8124	0.9005
GpositivePseAAC	0.7500	1.44	0.5577	0.5272	0.7750	0.7438
HumanGO	0.4534	3.64	0.3947	0.6190	0.9826	0.9705
HumanPseAAC	0.6817	5.17	0.6085	0.4311	0.9286	0.9315
Image	0.7600	2.20	0.4533	0.4873	0.7598	0.6693
IMDB-ECC-F	0.7634	12.94	0.6972	0.2789	0.8372	0.8384
IMDB-F	0.7506	13.45	0.6814	0.3089	0.8050	0.8506
LLOG-F	0.9180	36.69	0.9385	0.1227	0.6000	0.9883
mediamill	0.3466	54.43	0.3937	0.5299	0.9697	0.9467
medical	0.8265	21.69	0.7857	0.2373	0.5361	0.9698
Music	0.3500	2.33	0.3667	0.7329	0.9295	0.8869
OHSUMED-F	0.8930	12.97	0.7963	0.2101	0.9392	0.8720
PlantGO	0.8542	4.81	0.8542	0.3258	0.9886	0.9320
PlantPseAAC	0.7449	4.48	0.6752	0.3845	0.9558	0.9345
rcv1subset1	0.9833	62.24	0.9047	0.0965	0.8918	0.9368
REUTERS-K500-EX2	0.9021	56.16	0.8676	0.1387	0.7619	0.9606
scene	0.7925	2.52	0.5830	0.4410	0.8977	0.8352
sider_CDK_ECFP4	0.3592	21.54	0.3507	0.7266	0.6440	0.7494
sider_MordredDesc	0.2958	21.75	0.4488	0.7065	0.6251	0.7477
sider_RDKit_desc	0.4648	21.81	0.5204	0.6837	0.6057	0.7267
SLASHDOT-F	0.9153	12.56	0.8770	0.1738	0.7157	0.9417
Stackex_chemistry	0.9395	110.42	0.9258	0.0787	0.9085	0.9882
Stackex_chess	0.9643	156.09	0.9686	0.0490	0.5444	0.9925
Stackex_coffee	1.0000	82.48	1.0000	0.0340	0.2550	0.9816
Stackex_cooking	0.9585	255.76	0.9556	0.0442	0.9175	0.9910
Stackex_cs	0.9382	173.23	0.9312	0.0868	0.8895	0.9916
Stackex_philosophy	0.9648	147.68	0.9042	0.0636	0.7392	0.9854
tmc2007-500	0.5633	7.99	0.4740	0.5073	0.9142	0.9297
tox21_CDK_ECFP4	0.8699	6.59	0.8092	0.3482	0.8333	0.7632
tox21_RDKit_desc	0.7740	7.01	0.8266	0.3457	0.9481	0.9115
VirusGO	0.9524	3.48	0.9524	0.2866	0.7115	0.8099
VirusPseAAC	0.6667	1.81	0.3095	0.5476	0.7431	0.8780
Water-quality	0.5472	11.02	0.7709	0.5080	0.7348	0.7442
Yahoo_Arts	0.7637	15.20	0.8143	0.2740	0.9232	0.9469
Yahoo_Business	0.1310	3.86	0.2116	0.8421	0.8398	0.9881
Yahoo_Computers	0.4602	6.97	0.4594	0.5712	0.8868	0.9812
Yahoo_Education	0.8894	9.83	0.7740	0.3002	0.8758	0.9567
Yahoo_Entertainment	0.6952	5.60	0.6200	0.4363	0.9271	0.9271
Yahoo_Health	0.7796	9.85	0.7056	0.3578	0.7824	0.9407
Yahoo_Recreation	0.7825	9.23	0.6847	0.3414	0.9735	0.9517
Yahoo_Reference	0.7659	7.64	0.6225	0.3912	0.7716	0.9461
Yahoo_Science	0.8196	15.45	0.7602	0.2568	0.9275	0.9385
Yahoo_Social	0.6312	9.03	0.5542	0.4663	0.8775	0.9584
yeast	0.8058	7.91	0.4962	0.4756	0.8318	0.8131
Yelp	0.3569	1.79	0.1917	0.7487	0.7353	0.7360

Table 115: Detailed results for ML-TREE(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4368	4.74	0.4313	0.6161	0.9899	0.9805
3s-bbc1000	0.6667	2.86	0.6574	0.4852	0.8626	0.8482
3s-guardian1000	0.6774	2.61	0.5968	0.4978	0.8476	0.8307
3s-reuters1000	0.8000	2.53	0.7333	0.4317	0.8266	0.7739
bibtex	0.5446	84.24	0.6898	0.3172	0.9929	0.9931
birds	0.4872	7.23	0.5654	0.5078	0.8491	0.9488
bookmarks	0.6740	99.22	0.7009	0.2989	0.9881	0.9891
CAL500	0.5490	149.41	0.6839	0.3409	0.7232	0.8641
corel16k001	0.8758	111.72	0.8842	0.1094	0.9832	0.9842
Corel5k	0.8140	166.07	0.8643	0.1640	0.6688	0.9897
delicious	0.7607	899.39	0.7545	0.1254	0.9635	0.9719
emotions	0.3833	2.28	0.3250	0.7116	0.8298	0.7946
enron	0.4386	28.77	0.4946	0.4821	0.7965	0.9591
EukaryoteGO	0.2201	4.12	0.2675	0.7591	0.9951	0.9956
EukaryotePseAAC	0.7477	8.79	0.7435	0.3340	0.9543	0.9599
Eurlex-dc	0.3125	72.97	0.3757	0.6304	0.7590	0.9994
Eurlex-sm	0.2310	49.24	0.3857	0.6206	0.8257	0.9947
foodtruck	0.5122	4.37	0.3950	0.6166	0.7072	0.8419
genbase	0.1045	4.06	0.1866	0.8324	0.6661	0.9988
GnegativeGO	0.1357	0.94	0.1357	0.8836	0.8732	0.9725
GnegativePseAAC	0.4286	1.60	0.4143	0.6928	0.8185	0.9208
GpositivePseAAC	0.4423	1.04	0.3846	0.6987	0.8867	0.7976
HumanGO	0.2862	2.33	0.2708	0.7593	0.9750	0.9748
HumanPseAAC	0.7363	5.56	0.7144	0.3913	0.9050	0.8930
Image	0.4550	1.46	0.3854	0.6854	0.8743	0.8248
IMDB-ECC-F	0.7777	12.96	0.7070	0.3013	0.8358	0.8490
IMDB-F	0.7757	13.47	0.7161	0.2976	0.8369	0.8502
LLOG-F	0.7705	33.88	0.8067	0.2330	0.5840	0.9806
mediamill	0.3603	54.44	0.3867	0.5254	0.9564	0.9730
medical	0.3367	16.19	0.4014	0.6078	0.5504	0.9930
Music	0.5333	2.75	0.4102	0.6405	0.7926	0.7512
OHSUMED-F	0.4975	9.22	0.5275	0.5109	0.9066	0.9087
PlantGO	0.2551	1.76	0.2670	0.7751	0.9677	0.9665
PlantPseAAC	0.7347	4.16	0.7075	0.4072	0.9126	0.9085
rcv1subset1	0.6983	57.65	0.7305	0.2673	0.9070	0.9671
REUTERS-K500-EX2	0.7083	50.26	0.7369	0.2906	0.7755	0.9876
scene	0.3651	1.43	0.3309	0.7253	0.9491	0.9349
sider_CDK_ECFP4	0.2042	20.13	0.2174	0.7958	0.5737	0.7653
sider_MordredDesc	0.1831	20.96	0.2320	0.7749	0.5658	0.7552
sider_RDKit_desc	0.2254	20.51	0.2508	0.7782	0.5583	0.7483
SLASHDOT-F	0.5356	8.68	0.5493	0.4910	0.7352	0.9565
Stackex_chemistry	0.7514	103.83	0.8217	0.1750	0.9075	0.9864
Stackex_chess	0.7619	143.22	0.8178	0.1649	0.5393	0.9838
Stackex_coffee	0.8261	73.26	0.8297	0.1307	0.2550	0.9789
Stackex_cooking	0.6541	237.90	0.7925	0.2026	0.9212	0.9961
Stackex_cs	0.6266	163.73	0.7734	0.2313	0.8901	0.9923
Stackex_philosophy	0.7211	141.09	0.8104	0.1824	0.7435	0.9917
tmc2007-500	0.3888	6.48	0.3060	0.6478	0.9325	0.9409
tox21_CDK_ECFP4	0.5685	6.24	0.6068	0.4736	0.8101	0.8135
tox21_RDKit_desc	0.5856	5.89	0.5514	0.4838	0.8039	0.8111
VirusGO	0.0476	0.62	0.0873	0.9421	0.8287	0.9956
VirusPseAAC	0.7143	2.62	0.6667	0.4631	0.7164	0.8793
Water-quality	0.5755	10.25	0.5128	0.5713	0.6735	0.7004
Yahoo_Arts	0.5661	11.01	0.5374	0.4656	0.8755	0.9150
Yahoo_Business	0.1604	2.71	0.1220	0.8582	0.6654	0.9284
Yahoo_Computers	0.4394	6.19	0.3881	0.6122	0.7632	0.9044
Yahoo_Education	0.5478	6.68	0.5232	0.5326	0.8247	0.9209
Yahoo_Entertainment	0.4446	3.87	0.4486	0.6246	0.8664	0.8874
Yahoo_Health	0.3996	4.81	0.2542	0.6811	0.7271	0.9259
Yahoo_Recreation	0.4466	5.96	0.4362	0.5985	0.8766	0.8787
Yahoo_Reference	0.4483	5.24	0.4466	0.6155	0.7921	0.9736
Yahoo_Science	0.5708	13.92	0.6013	0.4523	0.9543	0.9721
Yahoo_Social	0.3680	7.28	0.3894	0.6468	0.8822	0.9614
yeast	0.4050	6.81	0.4179	0.6875	0.7281	0.8178
Yelp	0.2652	1.34	0.1817	0.8423	0.8066	0.8318

Table 116: Detailed results for ML-TREE(RF)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3850	3.86	0.3337	0.6766	0.9817	0.9819
3s-bbc1000	0.4722	1.94	0.5185	0.6481	0.8805	0.8490
3s-guardian1000	0.5806	2.13	0.4194	0.5876	0.8799	0.8702
3s-reuters1000	0.7333	2.23	0.6333	0.4900	0.8473	0.7971
bibtex	0.6378	78.91	0.6037	0.3314	0.9860	0.9873
birds	0.5641	7.74	0.5160	0.4941	0.8207	0.9109
bookmarks	0.7679	101.22	0.7240	0.2442	0.9860	0.9869
CAL500	0.5098	151.92	0.6359	0.3548	0.6883	0.8393
corel16k001	0.9216	110.92	0.8545	0.1090	0.9783	0.9792
Corel5k	0.7900	157.99	0.8024	0.1960	0.6678	0.9889
delicious	0.8042	896.11	0.7540	0.1211	0.9701	0.9773
emotions	0.3833	2.28	0.2458	0.7217	0.8264	0.8089
enron	0.4152	28.32	0.4788	0.4851	0.8027	0.9616
EukaryoteGO	0.3012	3.55	0.2304	0.7390	0.9805	0.9862
EukaryotePseAAC	0.7696	9.06	0.7128	0.3255	0.9459	0.9510
Eurlex-dc	0.5877	86.33	0.5109	0.4416	0.7571	0.9972
Eurlex-sm	0.4760	48.36	0.4512	0.5084	0.8231	0.9933
foodtruck	0.3415	3.98	0.3617	0.7127	0.7064	0.8354
genbase	0.0896	3.72	0.1567	0.8520	0.6667	0.9991
GnegativeGO	0.0143	0.15	0.0250	0.9842	0.8746	0.9969
GnegativePseAAC	0.4357	1.57	0.2911	0.6981	0.7844	0.9203
GpositivePseAAC	0.4038	0.90	0.2885	0.7324	0.9032	0.8645
HumanGO	0.2958	2.28	0.2682	0.7524	0.9678	0.9769
HumanPseAAC	0.7621	5.84	0.6255	0.3801	0.9058	0.9086
Image	0.5000	1.35	0.2929	0.6802	0.7993	0.7948
IMDB-ECC-F	0.8050	13.66	0.7038	0.2870	0.9060	0.9163
IMDB-F	0.8123	13.67	0.6854	0.2913	0.8984	0.9099
LLOG-F	0.7377	31.85	0.7493	0.2691	0.5826	0.9803
mediamill	0.6689	61.24	0.5010	0.3534	0.9508	0.9672
medical	0.4184	18.05	0.4320	0.5490	0.5510	0.9900
Music	0.3500	2.62	0.2750	0.7189	0.8213	0.8132
OHSUMED-F	0.5420	9.61	0.5049	0.4864	0.9427	0.9471
PlantGO	0.2653	1.44	0.1973	0.7997	0.9736	0.9691
PlantPseAAC	0.7551	3.92	0.6735	0.4112	0.8939	0.9027
rcv1subset1	0.7683	54.43	0.7010	0.2633	0.9122	0.9730
REUTERS-K500-EX2	0.7700	46.31	0.7022	0.2734	0.7705	0.9832
scene	0.5062	1.77	0.4004	0.6374	0.9071	0.8987
sider_CDK_ECFP4	0.2676	21.55	0.3311	0.7524	0.5838	0.7452
sider_MordredDesc	0.2254	21.20	0.2701	0.7723	0.5897	0.7564
sider_RDKit_desc	0.2394	20.97	0.2784	0.7645	0.5801	0.7570
SLASHDOT-F	0.5726	8.41	0.5215	0.4822	0.7401	0.9658
Stackex_chemistry	0.8879	106.35	0.8425	0.1303	0.9067	0.9867
Stackex_chess	0.6845	129.18	0.7022	0.2319	0.5398	0.9882
Stackex_coffee	0.6957	78.87	0.8179	0.1997	0.2528	0.9812
Stackex_cooking	0.8135	226.90	0.7454	0.1836	0.9195	0.9945
Stackex_cs	0.7976	158.96	0.7469	0.2030	0.8876	0.9902
Stackex_philosophy	0.8492	134.86	0.7660	0.1698	0.7416	0.9899
tmc2007-500	0.4077	6.43	0.3329	0.6340	0.9290	0.9466
tox21_CDK_ECFP4	0.6507	6.09	0.5398	0.4541	0.7947	0.8107
tox21_RDKit_desc	0.6507	6.51	0.5947	0.4347	0.8195	0.8280
VirusGO	0.0476	0.62	0.0873	0.9421	0.8179	0.9897
VirusPseAAC	0.5714	1.62	0.3571	0.6190	0.6952	0.8810
Water-quality	0.5472	10.58	0.6660	0.5043	0.8731	0.6712
Yahoo_Arts	0.6342	11.40	0.5513	0.4312	0.8923	0.9361
Yahoo_Business	0.1765	3.53	0.1728	0.8271	0.8211	0.9799
Yahoo_Computers	0.4884	6.47	0.4157	0.5817	0.8641	0.9647
Yahoo_Education	0.6018	9.01	0.5056	0.4889	0.8623	0.9590
Yahoo_Entertainment	0.4444	3.86	0.4441	0.6206	0.8592	0.8787
Yahoo_Health	0.4408	7.32	0.4175	0.6106	0.8043	0.9684
Yahoo_Recreation	0.4464	5.96	0.4349	0.5930	0.8757	0.8719
Yahoo_Reference	0.4097	4.84	0.3463	0.6548	0.7957	0.9822
Yahoo_Science	0.5599	13.42	0.5415	0.4682	0.9423	0.9704
Yahoo_Social	0.3645	7.28	0.3813	0.6449	0.8805	0.9525
yeast	0.4628	7.03	0.4126	0.6458	0.7333	0.8098
Yelp	0.3509	1.53	0.2680	0.7899	0.7134	0.7881

Table 117: Detailed results for ML-FOREST(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3674	1.82	0.3117	0.7445	0.9684	0.9617
3s-bbc1000	0.7222	2.11	0.7222	0.5113	0.7013	0.6743
3s-guardian1000	0.5161	1.94	0.4677	0.6172	0.6834	0.7267
3s-reuters1000	0.9000	1.93	0.8583	0.4381	0.6572	0.6068
bibtex	0.4216	54.72	0.3935	0.5009	0.9609	0.9654
birds	0.3590	5.21	0.3024	0.6333	0.7618	0.8507
bookmarks	0.5926	73.28	0.4100	0.4033	0.9431	0.9496
CAL500	0.4118	138.47	0.4293	0.4812	0.5449	0.8164
corel16k001	0.7516	71.84	0.4517	0.2491	0.8893	0.9081
Corel5k	0.6500	142.18	0.6474	0.2680	0.6097	0.9399
delicious	0.4232	755.29	0.2821	0.2959	0.8659	0.9136
emotions	0.2833	1.77	0.1750	0.7973	0.8241	0.8444
enron	0.4795	17.26	0.2067	0.5569	0.7057	0.9141
EukaryoteGO	0.1930	0.66	0.0444	0.8844	0.9921	0.9931
EukaryotePseAAC	0.6358	3.67	0.5192	0.5269	0.8352	0.8947
Eurlex-dc	0.2426	24.29	0.0897	0.7762	0.7549	0.9960
Eurlex-sm	0.1452	14.96	0.1167	0.7977	0.8180	0.9907
foodtruck	0.2439	2.83	0.3070	0.8041	0.6489	0.8263
genbase	0.1045	3.66	0.1567	0.8558	0.6661	0.9969
GnegativeGO	0.1429	0.26	0.1321	0.9190	0.8719	0.9929
GnegativePseAAC	0.3571	1.25	0.3375	0.7512	0.8007	0.9244
GpositivePseAAC	0.4038	0.73	0.3654	0.7500	0.8754	0.8544
HumanGO	0.2058	0.72	0.0774	0.8761	0.9801	0.9834
HumanPseAAC	0.6688	3.01	0.4907	0.5194	0.7482	0.8214
Image	0.2550	0.79	0.1854	0.8312	0.8846	0.8767
IMDB-ECC-F	0.7784	12.84	0.6726	0.3079	0.8875	0.9003
IMDB-F	0.7975	13.57	0.7004	0.2891	0.8877	0.9010
LLOG-F	0.7377	23.69	0.5063	0.3095	0.5136	0.8961
mediamill	0.3330	27.93	0.0993	0.6634	0.8992	0.9537
medical	0.2653	9.17	0.1973	0.7495	0.5324	0.9707
Music	0.3167	2.10	0.1889	0.7719	0.8554	0.8475
OHSUMED-F	0.3783	5.26	0.1653	0.6568	0.8535	0.8899
PlantGO	0.2143	0.96	0.0867	0.8472	0.9688	0.9724
PlantPseAAC	0.7347	2.95	0.2551	0.4793	0.7578	0.7888
rcv1subset1	0.5683	33.02	0.2757	0.4231	0.8507	0.9236
REUTERS-K500-EX2	0.6300	31.30	0.3374	0.4151	0.7261	0.9348
scene	0.2282	0.56	0.0954	0.8580	0.9365	0.9469
sider_CDK_ECFP4	0.5915	20.05	0.4290	0.6825	0.4664	0.6861
sider_MordredDesc	0.5915	19.99	0.4277	0.6826	0.5237	0.7183
sider_RDKit_desc	0.4577	19.94	0.3524	0.7124	0.5653	0.7586
SLASHDOT-F	0.4538	6.18	0.2469	0.5949	0.6874	0.8899
Stackex_chemistry	0.6882	75.52	0.4700	0.2828	0.8557	0.9394
Stackex_chess	0.6071	118.29	0.4958	0.2695	0.5112	0.9493
Stackex_coffee	0.7391	66.87	0.5054	0.2665	0.2403	0.9344
Stackex_cooking	0.5459	170.33	0.4605	0.3536	0.8998	0.9757
Stackex_cs	0.5076	114.20	0.3953	0.3918	0.8622	0.9688
Stackex_philosophy	0.5678	104.83	0.4307	0.3431	0.7028	0.9532
tmc2007-500	0.4514	3.68	0.1289	0.6927	0.9017	0.9386
tox21_CDK_ECFP4	0.5342	4.53	0.1803	0.5797	0.7049	0.7560
tox21_RDKit_desc	0.5171	4.74	0.2270	0.5767	0.6948	0.7517
VirusGO	0.0476	0.38	0.0476	0.9619	0.8073	0.9802
VirusPseAAC	0.5238	0.90	0.0000	0.7079	0.5951	0.8789
Water-quality	0.4245	9.35	0.3174	0.6469	0.6080	0.6855
Yahoo_Arts	0.4927	6.35	0.2336	0.5720	0.7886	0.8568
Yahoo_Business	0.1319	2.34	0.1435	0.8831	0.7379	0.9610
Yahoo_Computers	0.4924	4.59	0.4907	0.6205	0.8131	0.9339
Yahoo_Education	0.4863	5.56	0.2907	0.6129	0.8341	0.9374
Yahoo_Entertainment	0.3103	2.79	0.1538	0.7420	0.9187	0.9335
Yahoo_Health	0.4853	3.36	0.2373	0.6927	0.7530	0.9487
Yahoo_Recreation	0.3437	3.99	0.3055	0.7134	0.9127	0.9180
Yahoo_Reference	0.3362	3.28	0.1402	0.7271	0.7205	0.9440
Yahoo_Science	0.4666	7.56	0.1499	0.5916	0.8466	0.8915
Yahoo_Social	0.2789	3.65	0.1428	0.7725	0.8634	0.9658
yeast	0.2562	6.63	0.2851	0.7297	0.6413	0.8107
Yelp	0.3659	1.42	0.4056	0.7956	0.7848	0.8486

Table 118: Detailed results for ML-FOREST(MC)(DT)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3689	1.69	0.3089	0.7468	0.9693	0.9622
3s-bbc1000	0.6389	2.03	0.6667	0.5616	0.7019	0.6904
3s-guardian1000	0.5484	1.71	0.4516	0.6215	0.6667	0.7425
3s-reuters1000	0.9000	2.23	0.8583	0.4253	0.6309	0.5766
bibtex	0.4041	57.21	0.4085	0.5016	0.9596	0.9644
birds	0.4103	5.62	0.3496	0.6077	0.7670	0.8557
bookmarks	0.5883	72.46	0.4138	0.4040	0.9430	0.9491
CAL500	0.4118	138.88	0.4239	0.4802	0.5363	0.8169
corel16k001	0.7567	73.57	0.4647	0.2490	0.8898	0.9084
Corel5k	0.6660	137.31	0.6250	0.2650	0.6113	0.9414
delicious	0.4319	753.91	0.2824	0.2983	0.8641	0.9133
emotions	0.2167	1.70	0.1583	0.8269	0.8334	0.8571
enron	0.4737	17.92	0.2048	0.5605	0.6953	0.9133
EukaryoteGO	0.1892	0.67	0.0483	0.8859	0.9922	0.9927
EukaryotePseAAC	0.6538	3.49	0.5256	0.5245	0.8411	0.8943
Eurlex-dc	0.2501	24.31	0.0722	0.7632	0.7318	1.0000
Eurlex-sm	0.1509	15.01	0.1116	0.7977	0.8182	0.9909
foodtruck	0.2439	2.71	0.2970	0.8027	0.6650	0.8284
genbase	0.1045	2.99	0.1343	0.8755	0.6667	0.9960
GnegativeGO	0.1357	0.31	0.1321	0.9182	0.8721	0.9923
GnegativePseAAC	0.3214	1.23	0.3071	0.7700	0.8225	0.9276
GpositivePseAAC	0.3846	0.71	0.3846	0.7628	0.8775	0.8450
HumanGO	0.2058	0.73	0.0621	0.8758	0.9797	0.9838
HumanPseAAC	0.6624	3.03	0.5106	0.5190	0.7281	0.8222
Image	0.2400	0.78	0.1717	0.8369	0.8918	0.8840
IMDB-ECC-F	0.7787	12.86	0.6707	0.3065	0.8867	0.8998
IMDB-F	0.7847	13.42	0.6888	0.2984	0.8887	0.9022
LLOG-F	0.7869	26.83	0.4806	0.2764	0.5079	0.8907
mediamill	0.3337	28.02	0.0967	0.6622	0.9003	0.9537
medical	0.2755	7.66	0.1505	0.7412	0.5251	0.9702
Music	0.3167	2.15	0.1912	0.7586	0.8459	0.8441
OHSUMED-F	0.3819	5.35	0.1734	0.6503	0.8509	0.8895
PlantGO	0.2347	1.00	0.0867	0.8381	0.9800	0.9759
PlantPseAAC	0.7449	3.46	0.3265	0.4526	0.7068	0.7646
rcv1subset1	0.5383	32.75	0.2777	0.4236	0.8489	0.9216
REUTERS-K500-EX2	0.6300	34.17	0.3684	0.4047	0.7281	0.9322
scene	0.2739	0.52	0.0747	0.8420	0.9341	0.9462
sider_CDK_ECFP4	0.5915	19.90	0.3973	0.6915	0.5024	0.7104
sider_MordredDesc	0.5915	19.93	0.4007	0.6910	0.4977	0.7182
sider_RDKit_desc	0.5915	19.92	0.3932	0.6928	0.5458	0.7401
SLASHDOT-F	0.4855	6.11	0.2460	0.5874	0.6773	0.8875
Stackex_chemistry	0.6810	75.00	0.4800	0.2865	0.8553	0.9392
Stackex_chess	0.6667	116.77	0.4807	0.2606	0.5097	0.9515
Stackex_coffee	0.6957	61.43	0.4275	0.2780	0.2432	0.9339
Stackex_cooking	0.5420	167.11	0.4493	0.3556	0.8992	0.9753
Stackex_cs	0.5227	110.72	0.3822	0.3927	0.8622	0.9696
Stackex_philosophy	0.5628	99.05	0.4051	0.3627	0.7081	0.9561
tmc2007-500	0.4517	3.74	0.1298	0.6933	0.9013	0.9382
tox21_CDK_ECFP4	0.4897	4.63	0.2131	0.6009	0.7088	0.7560
tox21_RDKit_desc	0.5000	4.51	0.1921	0.5906	0.7047	0.7621
VirusGO	0.0476	0.38	0.0476	0.9563	0.8076	0.9747
VirusPseAAC	0.5238	0.95	0.0000	0.6960	0.6332	0.8873
Water-quality	0.4245	9.43	0.3073	0.6419	0.6081	0.6861
Yahoo_Arts	0.5020	6.97	0.2530	0.5540	0.7697	0.8449
Yahoo_Business	0.1319	2.35	0.1448	0.8845	0.7559	0.9638
Yahoo_Computers	0.4924	4.50	0.4871	0.6246	0.8115	0.9338
Yahoo_Education	0.4705	5.51	0.2853	0.6233	0.8343	0.9385
Yahoo_Entertainment	0.3229	2.67	0.1483	0.7407	0.9207	0.9338
Yahoo_Health	0.4843	3.30	0.2321	0.6953	0.7602	0.9503
Yahoo_Recreation	0.3383	3.80	0.2986	0.7177	0.9177	0.9223
Yahoo_Reference	0.3412	3.10	0.1289	0.7240	0.7207	0.9433
Yahoo_Science	0.4728	7.61	0.1729	0.5841	0.8389	0.8911
Yahoo_Social	0.2756	3.98	0.1517	0.7709	0.8656	0.9658
yeast	0.2438	6.33	0.2599	0.7443	0.6866	0.8305
Yelp	0.3659	1.42	0.4038	0.7959	0.7854	0.8475

Table 119: Detailed results for ML-FOREST(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7979	7.50	0.7263	0.3325	0.9097	0.8541
3s-bbc1000	0.6944	2.81	0.7338	0.4699	0.8955	0.8287
3s-guardian1000	0.7742	2.35	0.4435	0.4833	0.6506	0.6463
3s-reuters1000	0.8333	2.37	0.7667	0.4253	0.6047	0.5847
bibtex	0.6351	82.98	0.7126	0.2801	0.9688	0.9708
birds	0.8205	8.77	0.4202	0.3400	0.6040	0.6835
bookmarks	0.5891	73.24	0.4558	0.3985	0.9309	0.9228
CAL500	0.4118	147.47	0.4776	0.4543	0.5984	0.8163
corel16k001	0.8504	103.05	0.7828	0.1367	0.9566	0.9590
Corel5k	0.7500	156.14	0.7330	0.2142	0.6599	0.9789
delicious	0.6830	887.89	0.5663	0.1314	0.9066	0.9202
emotions	0.3333	2.58	0.1597	0.7087	0.7039	0.6880
enron	0.4854	26.03	0.3574	0.4799	0.7699	0.9433
EukaryoteGO	0.7091	7.56	0.6271	0.3952	0.9505	0.9573
EukaryotePseAAC	0.8623	9.52	0.8552	0.2640	0.9977	0.8583
Eurlex-dc	0.2589	24.31	0.0687	0.7534	0.7455	1.0000
Eurlex-sm	0.1550	14.96	0.1337	0.8127	0.8187	0.9860
foodtruck	0.2439	3.85	0.4171	0.7029	0.5033	0.7326
genbase	0.1791	1.70	0.1866	0.8676	0.6629	0.9921
GnegativeGO	0.5714	1.64	0.5714	0.6304	0.7736	0.8843
GnegativePseAAC	0.3214	0.93	0.2821	0.7882	0.8323	0.9580
GpositivePseAAC	0.3654	0.60	0.1154	0.7804	0.8541	0.8319
HumanGO	0.8039	5.13	0.7419	0.3913	0.8688	0.8482
HumanPseAAC	0.7203	4.05	0.5196	0.4576	0.8210	0.8425
Image	0.6500	1.91	0.4058	0.5632	0.8319	0.7635
IMDB-ECC-F	0.7262	10.92	0.5692	0.3690	0.8026	0.8389
IMDB-F	0.7364	11.20	0.5608	0.3633	0.8120	0.8458
LLOG-F	0.8934	36.07	0.8443	0.1585	0.5615	0.9467
mediamill	0.3340	52.69	0.3517	0.5426	0.9419	0.9683
medical	0.7755	15.99	0.6049	0.3421	0.5041	0.9387
Music	0.3500	2.92	0.1338	0.6830	0.7350	0.6960
OHSUMED-F	0.6913	8.15	0.6897	0.4248	0.8206	0.8345
PlantGO	0.8367	4.29	0.8444	0.3569	0.8804	0.8231
PlantPseAAC	0.7755	3.20	0.6786	0.4605	0.8438	0.8360
rcv1subset1	0.5507	33.00	0.2785	0.4061	0.8493	0.9132
REUTERS-K500-EX2	0.9067	57.05	0.8973	0.1258	0.7706	0.9814
scene	0.7261	2.33	0.4170	0.4880	0.7725	0.7065
sider_CDK_ECFP4	0.5915	20.22	0.4145	0.6884	0.5322	0.7193
sider_MordredDesc	0.5915	20.54	0.3912	0.6925	0.5493	0.7452
sider_RDKit_desc	0.5915	20.34	0.4323	0.6816	0.5727	0.7493
SLASHDOT-F	0.9604	13.10	0.9624	0.1274	0.7703	0.9532
Stackex_chemistry	0.9411	102.50	0.8824	0.1043	0.8745	0.9520
Stackex_chess	0.8155	139.32	0.7203	0.1492	0.5233	0.9602
Stackex_coffee	0.7162	66.86	0.5248	0.2448	0.2493	0.9466
Stackex_cooking	0.8908	249.70	0.8734	0.0910	0.9098	0.9830
Stackex_cs	0.7002	166.16	0.7651	0.2029	0.8844	0.9844
Stackex_philosophy	0.8166	134.17	0.7667	0.1681	0.7172	0.9619
tmc2007-500	0.4664	6.17	0.3603	0.6045	0.8927	0.9127
tox21_CDK_ECFP4	0.7466	5.88	0.6532	0.4178	0.6917	0.6708
tox21_RDKit_desc	0.6884	5.77	0.3188	0.4579	0.5731	0.6541
VirusGO	0.4762	1.33	0.1429	0.7119	0.5849	0.7881
VirusPseAAC	0.5714	1.10	0.0000	0.6508	0.5821	0.8265
Water-quality	0.4245	10.38	0.3761	0.5935	0.5235	0.5935
Yahoo_Arts	0.7664	13.13	0.7499	0.3169	0.8530	0.8942
Yahoo_Business	0.1319	4.08	0.2147	0.8344	0.8120	0.9787
Yahoo_Computers	0.4924	8.22	0.5929	0.5071	0.8646	0.9667
Yahoo_Education	0.8254	10.44	0.7838	0.3317	0.8335	0.9325
Yahoo_Entertainment	0.8107	5.91	0.7776	0.3709	0.8918	0.9012
Yahoo_Health	0.5114	8.89	0.5025	0.5369	0.7797	0.9525
Yahoo_Recreation	0.8137	9.27	0.8101	0.3204	0.8978	0.9005
Yahoo_Reference	0.8269	7.76	0.7907	0.3484	0.7554	0.9432
Yahoo_Science	0.9020	16.93	0.8551	0.2155	0.9060	0.9352
Yahoo_Social	0.8416	12.30	0.8299	0.2634	0.8641	0.9488
yeast	0.2603	8.31	0.3344	0.6539	0.5428	0.7234
Yelp	0.3659	1.85	0.4385	0.7556	0.8013	0.8178

Table 120: Detailed results for ML-FOREST(MC)(NBC)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7922	7.41	0.7381	0.3392	0.9161	0.8609
3s-bbc1000	0.6111	2.25	0.6019	0.5542	0.8509	0.8025
3s-guardian1000	0.6452	2.13	0.4516	0.5430	0.6379	0.6680
3s-reuters1000	0.8333	2.33	0.6583	0.4319	0.5601	0.5686
bibtex	0.6541	83.01	0.7248	0.2696	0.9719	0.9729
birds	0.6923	9.62	0.4998	0.3500	0.5911	0.7005
bookmarks	0.5619	72.43	0.3703	0.3690	0.9620	0.9967
CAL500	0.4118	144.47	0.4572	0.4595	0.6004	0.8195
corel16k001	0.8424	105.99	0.8106	0.1365	0.9680	0.9699
Corel5k	0.7100	150.92	0.7479	0.2251	0.6621	0.9828
delicious	0.7470	897.98	0.6087	0.1060	0.9111	0.9226
emotions	0.3333	2.78	0.2278	0.6742	0.6864	0.6849
enron	0.4854	24.90	0.3685	0.4789	0.7775	0.9494
EukaryoteGO	0.6976	7.53	0.6321	0.4015	0.9473	0.9524
EukaryotePseAAC	0.7902	8.32	0.7277	0.3275	0.9194	0.9050
Eurlex-dc	0.2640	24.31	0.0874	0.7349	0.7677	1.0000
Eurlex-sm	0.1507	14.95	0.1088	0.7914	0.8234	0.9809
foodtruck	0.2439	4.56	0.3977	0.6892	0.4555	0.6995
genbase	0.1045	0.69	0.0224	0.9421	0.6656	0.9959
GnegativeGO	0.5857	1.69	0.5768	0.6201	0.7756	0.8829
GnegativePseAAC	0.5786	1.86	0.5482	0.6094	0.6760	0.8428
GpositivePseAAC	0.4038	0.62	0.1923	0.7660	0.8286	0.8508
HumanGO	0.7974	5.09	0.7227	0.3924	0.8789	0.8551
HumanPseAAC	0.6785	3.54	0.4409	0.5069	0.8464	0.8744
Image	0.6150	1.80	0.3746	0.5912	0.8535	0.7943
IMDB-ECC-F	0.7444	10.88	0.5695	0.3633	0.8050	0.8403
IMDB-F	0.7405	11.20	0.5670	0.3611	0.8041	0.8398
LLOG-F	0.8852	33.42	0.8188	0.1831	0.5641	0.9534
mediamill	0.3340	53.66	0.3388	0.5498	0.9485	0.9706
medical	0.6939	16.97	0.5666	0.3581	0.4785	0.9177
Music	0.4000	3.00	0.1407	0.6576	0.6634	0.6623
OHSUMED-F	0.6813	7.97	0.6646	0.4419	0.8293	0.8451
PlantGO	0.8776	4.22	0.8546	0.3594	0.8896	0.8493
PlantPseAAC	0.7347	2.83	0.4490	0.4975	0.8249	0.8466
rcv1subset1	0.5740	32.78	0.3112	0.4613	0.8963	0.8869
REUTERS-K500-EX2	0.9250	56.45	0.8986	0.1205	0.7700	0.9813
scene	0.6681	2.24	0.4056	0.5224	0.7934	0.7281
sider_CDK_ECFP4	0.5915	20.24	0.4006	0.6932	0.5414	0.7302
sider_MordredDesc	0.5915	20.47	0.3984	0.6914	0.5784	0.7606
sider_RDKit_desc	0.5915	20.20	0.4138	0.6854	0.5765	0.7490
SLASHDOT-F	0.7546	9.15	0.6720	0.3665	0.6506	0.8597
Stackex_chemistry	0.9368	102.24	0.8889	0.1153	0.8815	0.9588
Stackex_chess	0.8274	131.82	0.6788	0.1656	0.5170	0.9563
Stackex_coffee	0.7039	61.41	0.4118	0.2282	0.2331	0.9081
Stackex_cooking	0.8928	250.52	0.8581	0.0979	0.9083	0.9811
Stackex_cs	0.6840	170.10	0.7829	0.1933	0.8838	0.9852
Stackex_philosophy	0.7965	128.12	0.7165	0.1910	0.7161	0.9611
tmc2007-500	0.4720	6.43	0.4064	0.5907	0.9021	0.9159
tox21_CDK_ECFP4	0.7842	5.95	0.6600	0.4077	0.6713	0.6685
tox21_RDKit_desc	0.6815	6.38	0.4660	0.4348	0.5958	0.6080
VirusGO	0.4762	1.43	0.1905	0.7026	0.6771	0.8416
VirusPseAAC	0.5714	1.38	0.0952	0.6333	0.5485	0.8105
Water-quality	0.4245	10.05	0.3474	0.6126	0.5389	0.6224
Yahoo_Arts	0.7650	12.95	0.7449	0.3176	0.8527	0.8940
Yahoo_Business	0.1319	4.05	0.2135	0.8391	0.8125	0.9787
Yahoo_Computers	0.4924	8.18	0.5947	0.5084	0.8701	0.9699
Yahoo_Education	0.8279	10.35	0.8033	0.3390	0.8369	0.9359
Yahoo_Entertainment	0.8256	5.92	0.7887	0.3625	0.8860	0.8957
Yahoo_Health	0.5114	8.81	0.5096	0.5362	0.7774	0.9509
Yahoo_Recreation	0.3259	3.75	0.2779	0.7220	0.8890	0.9151
Yahoo_Reference	0.8232	7.81	0.7909	0.3488	0.7482	0.9389
Yahoo_Science	0.8911	17.04	0.8658	0.2178	0.9082	0.9369
Yahoo_Social	0.8441	12.66	0.8368	0.2568	0.8663	0.9504
yeast	0.2603	8.13	0.3242	0.6707	0.5164	0.7331
Yelp	0.3659	1.85	0.4404	0.7547	0.7974	0.8169

Table 121: Detailed results for LAML-kNN

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5409	3.69	0.1063	0.5775	0.8470	0.8131
3s-bbc1000	0.6944	2.19	0.5208	0.5370	0.6879	0.5987
3s-guardian1000	0.5806	2.39	0.3871	0.5468	0.7250	0.6353
3s-reuters1000	0.7000	2.23	0.5417	0.5022	0.6789	0.5819
bibtex	0.5149	36.10	0.1536	0.4264	0.8841	0.8565
birds	0.5641	5.82	0.2030	0.5330	0.7246	0.8184
bookmarks	0.6460	52.08	0.1169	0.3778	0.7676	0.7677
CAL500	0.1569	135.82	0.4213	0.4547	0.5212	0.7899
corel16k001	0.7691	50.94	0.0942	0.2455	0.6821	0.7960
Corel5k	0.7380	107.33	0.4671	0.2333	0.4762	0.8371
delicious	0.4276	560.74	0.1183	0.3201	0.7991	0.8707
emotions	0.3167	1.75	0.1750	0.7763	0.8214	0.8334
enron	0.2515	13.91	0.1216	0.6307	0.6229	0.8825
EukaryoteGO	0.2098	1.10	0.0137	0.8542	0.9168	0.9640
EukaryotePseAAC	0.6422	3.13	0.0231	0.5364	0.7218	0.8679
Eurlex-dc	0.3756	30.58	0.0958	0.6722	0.7148	0.9251
Eurlex-sm	0.2915	17.24	0.1545	0.7020	0.7517	0.9393
foodtruck	0.2439	3.17	0.3241	0.7703	0.6265	0.8029
genbase	0.0149	0.22	0.0000	0.9925	0.6667	0.9999
GnegativeGO	0.0714	0.21	0.0214	0.9538	0.8639	0.9832
GnegativePseAAC	0.2786	0.79	0.1125	0.8169	0.7505	0.9326
GpositivePseAAC	0.3269	0.54	0.1731	0.8061	0.8556	0.8724
HumanGO	0.2187	1.14	0.0666	0.8455	0.8487	0.9353
HumanPseAAC	0.6688	3.09	0.1119	0.5141	0.6531	0.7895
Image	0.3100	0.92	0.0979	0.7968	0.8519	0.8488
IMDB-ECC-F	0.7286	8.89	0.2428	0.3822	0.5965	0.7341
IMDB-F	0.7005	9.16	0.2406	0.3974	0.5889	0.7339
LLOG-F	0.7951	16.32	0.2340	0.3021	0.4051	0.8096
mediamill	0.1204	14.36	0.0224	0.7548	0.8189	0.9505
medical	0.2347	3.39	0.0901	0.8067	0.4749	0.9361
Music	0.2167	1.90	0.1556	0.8168	0.8608	0.8628
OHSUMED-F	0.6518	7.70	0.2721	0.4288	0.6807	0.7368
PlantGO	0.2857	0.90	0.0536	0.8182	0.9581	0.9415
PlantPseAAC	0.6735	2.66	0.2389	0.5163	0.7308	0.7936
rcv1subset1	0.5500	25.69	0.1907	0.4520	0.9104	0.8466
REUTERS-K500-EX2	0.4917	9.58	0.0837	0.5848	0.6808	0.9234
scene	0.2531	0.64	0.0985	0.8388	0.9158	0.9147
sider_CDK_ECFP4	0.0915	19.30	0.1209	0.8302	0.6755	0.7910
sider_MordredDesc	0.0986	19.34	0.1185	0.8320	0.6600	0.8138
sider_RDKit_desc	0.0634	19.39	0.1146	0.8399	0.6400	0.8087
SLASHDOT-F	0.6570	4.08	0.0729	0.4981	0.6085	0.8169
Stackex_chemistry	0.8233	51.15	0.3719	0.2162	0.7377	0.7754
Stackex_chess	0.7262	69.33	0.3126	0.2504	0.4624	0.8105
Stackex_coffee	0.7391	61.48	0.3013	0.2704	0.2451	0.7009
Stackex_cooking	0.8705	152.35	0.2545	0.1325	0.7043	0.7192
Stackex_cs	0.7175	85.24	0.2603	0.2498	0.7042	0.7977
Stackex_philosophy	0.7789	67.17	0.1926	0.2388	0.5997	0.7946
tmc2007-500	0.2909	3.59	0.0827	0.7488	0.8609	0.9197
tox21_CDK_ECFP4	0.4966	4.16	0.1101	0.6000	0.7229	0.7742
tox21_RDKit_desc	0.4897	4.27	0.1118	0.6040	0.7252	0.7753
VirusGO	0.2381	1.00	0.1270	0.8257	0.7401	0.9164
VirusPseAAC	0.2857	0.76	0.0000	0.8127	0.7299	0.8877
Water-quality	0.2358	8.88	0.2379	0.7116	0.7184	0.7430
Yahoo_Arts	0.7223	6.73	0.3329	0.4156	0.7702	0.7871
Yahoo_Business	0.1248	2.61	0.1301	0.8557	0.7863	0.9355
Yahoo_Computers	0.4458	4.53	0.3146	0.6185	0.8231	0.8802
Yahoo_Education	0.7132	4.73	0.3502	0.4455	0.7980	0.8771
Yahoo_Entertainment	0.6104	3.97	0.1192	0.5270	0.8123	0.8367
Yahoo_Health	0.4843	4.14	0.2930	0.6132	0.7394	0.9047
Yahoo_Recreation	0.7132	5.50	0.4435	0.4365	0.7855	0.7693
Yahoo_Reference	0.5280	3.86	0.1524	0.5820	0.7295	0.8881
Yahoo_Science	0.7434	8.53	0.2870	0.3839	0.8076	0.7954
Yahoo_Social	0.5050	4.13	0.1851	0.6155	0.7926	0.8906
yeast	0.2810	6.65	0.2289	0.7361	0.6887	0.8273
Yelp	0.1914	1.45	0.1863	0.8547	0.7802	0.8284

Table 122: Detailed results for ML-kNN

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5166	3.44	0.1062	0.6046	0.9349	0.8381
3s-bbc1000	0.6667	2.19	0.4792	0.5448	0.7134	0.6060
3s-guardian1000	0.5806	2.35	0.3710	0.5441	0.7447	0.6501
3s-reuters1000	0.7333	2.33	0.5417	0.4822	0.7361	0.5963
bibtex	0.5905	62.66	0.2375	0.3347	0.9517	0.7433
birds	0.5385	5.10	0.1757	0.5484	0.8083	0.8405
bookmarks	0.6466	60.16	0.0742	0.3732	0.9677	0.7728
CAL500	0.1765	135.67	0.4316	0.4407	0.6424	0.7883
corel16k001	0.7872	57.18	0.0749	0.2297	0.9349	0.7916
Corel5k	0.7800	114.09	0.5623	0.2105	0.6534	0.8561
delicious	0.4382	613.97	0.1334	0.3184	0.9357	0.8668
emotions	0.2667	1.68	0.1792	0.8167	0.8595	0.8578
enron	0.2632	14.01	0.1153	0.6318	0.7703	0.8904
EukaryoteGO	0.2033	1.11	0.0061	0.8631	0.9894	0.9653
EukaryotePseAAC	0.6589	3.34	0.0219	0.5237	0.9032	0.8684
Eurlex-dc	0.3777	29.64	0.0904	0.6701	0.7562	0.9370
Eurlex-sm	0.2848	17.42	0.1557	0.7060	0.8218	0.9527
foodtruck	0.2683	3.20	0.2867	0.7518	0.7108	0.8080
genbase	0.0000	0.22	0.0000	0.9975	0.6667	0.9999
GnegativeGO	0.0286	0.12	0.0125	0.9806	0.8708	0.9909
GnegativePseAAC	0.3000	0.85	0.1911	0.8026	0.8250	0.9193
GpositivePseAAC	0.2692	0.50	0.1346	0.8317	0.9050	0.8950
HumanGO	0.2122	0.91	0.0364	0.8592	0.9772	0.9571
HumanPseAAC	0.6302	3.13	0.1439	0.5290	0.8482	0.7988
Image	0.3200	0.86	0.0929	0.8033	0.8876	0.8610
IMDB-ECC-F	0.7288	8.95	0.2044	0.3892	0.8284	0.7639
IMDB-F	0.6959	8.97	0.2265	0.4046	0.8156	0.7707
LLOG-F	0.7951	16.14	0.2238	0.3081	0.5393	0.8176
mediamill	0.1211	14.52	0.0237	0.7583	0.9585	0.9556
medical	0.2857	3.28	0.1105	0.7928	0.5439	0.9425
Music	0.2167	1.82	0.1569	0.8261	0.8987	0.8845
OHSUMED-F	0.6633	7.89	0.3454	0.4219	0.8377	0.7429
PlantGO	0.2551	0.86	0.0434	0.8372	0.9755	0.9435
PlantPseAAC	0.7347	3.16	0.3240	0.4685	0.8329	0.7656
rcv1subset1	0.5600	25.70	0.1907	0.4494	0.9116	0.8471
REUTERS-K500-EX2	0.4867	9.99	0.1176	0.5930	0.7645	0.9243
scene	0.2199	0.49	0.0643	0.8676	0.9533	0.9453
sider_CDK_ECFP4	0.1056	19.27	0.1182	0.8331	0.7025	0.7931
sider_MordredDesc	0.0986	19.35	0.1114	0.8349	0.7188	0.8159
sider_RDKit_desc	0.0704	19.24	0.1060	0.8391	0.7149	0.8182
SLASHDOT-F	0.6702	4.85	0.0290	0.4526	0.7269	0.8004
Stackex_chemistry	0.8075	49.72	0.3589	0.2206	0.8650	0.8137
Stackex_chess	0.7143	68.16	0.3098	0.2642	0.5217	0.8304
Stackex_coffee	0.7826	63.39	0.2796	0.2481	0.2451	0.6884
Stackex_cooking	0.8618	149.37	0.2474	0.1367	0.8924	0.7691
Stackex_cs	0.7240	82.12	0.2386	0.2505	0.8610	0.8395
Stackex_philosophy	0.7789	62.99	0.1841	0.2442	0.7153	0.8315
tmc2007-500	0.2902	3.76	0.0928	0.7500	0.9348	0.9191
tox21_CDK_ECFP4	0.4760	4.21	0.1305	0.6112	0.8157	0.7870
tox21_RDKit_desc	0.5103	4.19	0.1511	0.6016	0.8180	0.7953
VirusGO	0.1429	0.71	0.0556	0.8881	0.7728	0.9196
VirusPseAAC	0.4762	1.14	0.0000	0.6897	0.7284	0.8345
Water-quality	0.2547	8.67	0.2377	0.7107	0.7668	0.7466
Yahoo_Arts	0.7236	6.79	0.3365	0.4160	0.8130	0.7927
Yahoo_Business	0.1239	2.52	0.1274	0.8576	0.8021	0.9382
Yahoo_Computers	0.4458	4.50	0.3164	0.6196	0.8312	0.8828
Yahoo_Education	0.6983	4.69	0.3402	0.4547	0.8180	0.8831
Yahoo_Entertainment	0.6088	3.93	0.1152	0.5329	0.8720	0.8472
Yahoo_Health	0.4821	4.18	0.2954	0.6142	0.7466	0.9057
Yahoo_Recreation	0.7062	5.47	0.4315	0.4412	0.8431	0.7795
Yahoo_Reference	0.5268	3.76	0.1393	0.5836	0.7569	0.9002
Yahoo_Science	0.7434	8.52	0.2689	0.3825	0.8713	0.8149
Yahoo_Social	0.4950	4.08	0.1775	0.6244	0.8596	0.9027
yeast	0.2231	6.15	0.1986	0.7705	0.7927	0.8456
Yelp	0.1894	1.53	0.1829	0.8469	0.8187	0.8255

Table 123: Detailed results for DML-kNN

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5140	3.43	0.1189	0.6059	0.8294	0.8308
3s-bbc1000	0.6667	2.19	0.4792	0.5448	0.5472	0.5838
3s-guardian1000	0.5806	2.35	0.3710	0.5441	0.6206	0.6414
3s-reuters1000	0.7333	2.33	0.5417	0.4822	0.6003	0.5646
bibtex	0.5824	57.00	0.1989	0.3482	0.6585	0.7282
birds	0.6410	5.36	0.1868	0.5065	0.6854	0.8054
bookmarks	0.6473	57.54	0.0868	0.3755	0.6490	0.7421
CAL500	0.1373	134.78	0.4487	0.4401	0.4682	0.7921
corel16k001	0.7640	54.77	0.0749	0.2444	0.5709	0.7672
Corel5k	0.7420	111.84	0.5263	0.2245	0.3603	0.8380
delicious	0.4257	599.35	0.0965	0.3172	0.6095	0.8430
emotions	0.2833	1.62	0.1708	0.8109	0.8334	0.8575
enron	0.2398	13.65	0.1067	0.6418	0.5371	0.8572
EukaryoteGO	0.2085	1.08	0.0064	0.8631	0.8880	0.9671
EukaryotePseAAC	0.6744	3.33	0.0222	0.5169	0.5853	0.8482
Eurlex-dc	0.3968	30.07	0.0968	0.6530	0.5796	0.9075
Eurlex-sm	0.2796	17.09	0.1593	0.7077	0.6160	0.9281
foodtruck	0.2683	3.02	0.3149	0.7504	0.6185	0.7958
genbase	0.0000	0.25	0.0000	0.9938	0.6664	0.9995
GnegativeGO	0.0286	0.12	0.0107	0.9814	0.8645	0.9901
GnegativePseAAC	0.3000	0.86	0.1911	0.8029	0.7307	0.9261
GpositivePseAAC	0.2885	0.52	0.1538	0.8221	0.8472	0.8826
HumanGO	0.2026	0.91	0.0355	0.8632	0.8784	0.9476
HumanPseAAC	0.6302	3.14	0.1452	0.5284	0.6127	0.7828
Image	0.3300	0.89	0.1079	0.7965	0.8505	0.8545
IMDB-ECC-F	0.7318	8.91	0.2044	0.3887	0.5300	0.7420
IMDB-F	0.6973	8.94	0.2276	0.4029	0.5412	0.7526
LLOG-F	0.8033	16.00	0.2361	0.3056	0.3632	0.8101
mediamill	0.1259	14.04	0.0218	0.7562	0.7386	0.9328
medical	0.2857	3.15	0.1196	0.7863	0.4795	0.9495
Music	0.2000	1.77	0.1968	0.8369	0.8774	0.8898
OHSUMED-F	0.6655	7.86	0.3460	0.4223	0.5991	0.7287
PlantGO	0.2449	0.81	0.0434	0.8451	0.9290	0.9368
PlantPseAAC	0.7347	3.11	0.3240	0.4723	0.5860	0.7489
rcv1subset1	0.5483	25.41	0.1916	0.4578	0.5201	0.7939
REUTERS-K500-EX2	0.4767	9.69	0.0632	0.6012	0.5498	0.8988
scene	0.2199	0.47	0.0654	0.8689	0.9298	0.9402
sider_CDK_ECFP4	0.0915	19.37	0.1334	0.8252	0.5456	0.7633
sider_MordredDesc	0.1056	19.65	0.1212	0.8309	0.5439	0.7875
sider_RDKit_desc	0.0986	19.58	0.1199	0.8304	0.5570	0.7938
SLASHDOT-F	0.6755	4.72	0.0317	0.4545	0.5321	0.7693
Stackex_chemistry	0.8017	49.04	0.3642	0.2340	0.5042	0.8034
Stackex_chess	0.7381	67.79	0.2752	0.2587	0.3368	0.8164
Stackex_coffee	0.7826	63.04	0.2796	0.2407	0.1525	0.6735
Stackex_cooking	0.8396	148.62	0.2448	0.1525	0.4954	0.7527
Stackex_cs	0.7143	81.42	0.2447	0.2648	0.5124	0.8142
Stackex_philosophy	0.7513	62.49	0.1733	0.2647	0.4215	0.8242
tmc2007-500	0.2951	3.56	0.0846	0.7509	0.8106	0.9049
tox21_CDK_ECFP4	0.4760	4.15	0.1307	0.6139	0.6910	0.7569
tox21_RDKit_desc	0.4932	4.21	0.1492	0.6036	0.6994	0.7609
VirusGO	0.1429	0.67	0.0079	0.8905	0.7468	0.9358
VirusPseAAC	0.5238	1.19	0.0000	0.6659	0.6428	0.8164
Water-quality	0.2642	9.18	0.2821	0.6823	0.6592	0.7007
Yahoo_Arts	0.7089	6.70	0.3347	0.4212	0.5540	0.7818
Yahoo_Business	0.1257	2.52	0.1277	0.8571	0.5233	0.9324
Yahoo_Computers	0.4498	4.48	0.3127	0.6182	0.5418	0.8550
Yahoo_Education	0.6999	4.67	0.3404	0.4543	0.4779	0.8696
Yahoo_Entertainment	0.6119	3.92	0.1157	0.5308	0.6054	0.8238
Yahoo_Health	0.4886	4.18	0.2933	0.6095	0.4687	0.8925
Yahoo_Recreation	0.7147	5.44	0.4354	0.4386	0.6237	0.7645
Yahoo_Reference	0.5330	3.74	0.1544	0.5815	0.4165	0.8841
Yahoo_Science	0.7356	8.44	0.2683	0.3897	0.5356	0.7897
Yahoo_Social	0.4884	4.03	0.1790	0.6303	0.5160	0.8788
yeast	0.2190	6.19	0.2080	0.7701	0.6799	0.8407
Yelp	0.1984	1.54	0.1808	0.8432	0.7267	0.8075

Table 124: Detailed results for FV-kNN

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3870	2.76	0.1434	0.7152	0.8651	0.8466
3s-bbc1000	0.6389	2.47	0.2639	0.5312	0.5350	0.5775
3s-guardian1000	0.8387	2.90	0.3065	0.3804	0.5454	0.4769
3s-reuters1000	0.8333	2.13	0.5333	0.4625	0.6160	0.5693
bibtex	0.8257	76.80	0.5929	0.1950	0.9067	0.8527
birds	0.4359	4.31	0.1346	0.6687	0.7803	0.8750
bookmarks	0.6557	58.87	0.2744	0.4625	0.7988	0.8097
CAL500	0.2157	141.59	0.4164	0.4499	0.5084	0.7757
corel16k001	0.8083	67.31	0.2513	0.2025	0.7906	0.8188
Corel5k	0.7820	147.73	0.5589	0.2003	0.6105	0.9239
delicious	0.5233	584.91	0.2175	0.1900	0.6255	0.6486
emotions	0.2833	1.97	0.2167	0.7675	0.7990	0.8203
enron	0.4620	19.09	0.3152	0.5426	0.7348	0.9067
EukaryoteGO	0.5058	1.70	0.0517	0.7231	0.8189	0.8151
EukaryotePseAAC	0.6976	3.99	0.1126	0.4805	0.8196	0.8724
Eurlex-dc	0.3626	38.73	0.1988	0.6759	0.7487	0.9888
Eurlex-sm	0.2848	20.34	0.1879	0.7123	0.8081	0.9797
foodtruck	0.3171	3.41	0.3482	0.7074	0.5736	0.7568
genbase	0.4328	0.27	0.0224	0.9764	0.3109	0.3949
GnegativeGO	0.2714	0.54	0.1714	0.8468	0.7088	0.8384
GnegativePseAAC	0.4929	1.16	0.4393	0.6916	0.7740	0.8986
GpositivePseAAC	0.3654	0.58	0.2500	0.7869	0.8436	0.8607
HumanGO	0.4244	1.42	0.0745	0.7230	0.9204	0.9320
HumanPseAAC	0.7331	3.71	0.2302	0.4549	0.7315	0.7825
Image	0.3000	0.88	0.1592	0.8048	0.8556	0.8484
IMDB-ECC-F	0.7260	9.46	0.2522	0.3974	0.6700	0.7594
IMDB-F	0.7244	9.70	0.2642	0.3945	0.6290	0.7463
LLOG-F	0.8197	22.20	0.4391	0.2613	0.5001	0.8563
mediamill	0.1183	15.97	0.0405	0.7849	0.9144	0.9644
medical	0.3980	4.67	0.1224	0.6978	0.5331	0.9680
Music	0.2000	1.92	0.1995	0.8266	0.8433	0.8517
OHSUMED-F	0.7243	8.06	0.3724	0.3870	0.6928	0.7354
PlantGO	0.5000	1.87	0.1726	0.7077	0.8282	0.7722
PlantPseAAC	0.6939	2.98	0.4643	0.4913	0.7494	0.7738
rcv1subset1	0.7517	45.01	0.5876	0.2994	0.9075	0.9544
REUTERS-K500-EX2	0.5517	11.38	0.1194	0.5687	0.6965	0.8994
scene	0.2822	0.54	0.0571	0.8367	0.9267	0.9306
sider_CDK_ECFP4	0.1479	19.42	0.1640	0.7986	0.5863	0.7585
sider_MordredDesc	0.1761	19.17	0.1452	0.8198	0.5405	0.7655
sider_RDKit_desc	0.1338	19.46	0.1407	0.8351	0.5771	0.7781
SLASHDOT-F	0.7414	6.84	0.3980	0.5135	0.5579	0.7048
Stackex_chemistry	0.7989	66.58	0.4170	0.2348	0.7964	0.8855
Stackex_chess	0.7917	108.31	0.5462	0.2214	0.5014	0.9352
Stackex_coffee	0.9130	80.96	0.7428	0.1005	0.2541	0.9030
Stackex_cooking	0.8087	177.79	0.4749	0.1881	0.8479	0.9152
Stackex_cs	0.7327	107.59	0.3970	0.2707	0.8197	0.9247
Stackex_philosophy	0.7688	98.95	0.4150	0.2540	0.6866	0.9232
tmc2007-500	0.3101	3.52	0.0942	0.7404	0.8877	0.9260
tox21_CDK_ECFP4	0.5240	4.53	0.2095	0.5766	0.6666	0.7271
tox21_RDKit_desc	0.4897	4.12	0.1736	0.6125	0.7220	0.7740
VirusGO	0.2857	0.90	0.0635	0.8034	0.7304	0.9002
VirusPseAAC	0.3333	0.76	0.0952	0.7968	0.7240	0.9092
Water-quality	0.2830	9.15	0.2787	0.6818	0.6690	0.7049
Yahoo_Arts	0.7049	7.22	0.3661	0.4231	0.7328	0.8055
Yahoo_Business	0.1471	3.19	0.1292	0.8280	0.7544	0.9504
Yahoo_Computers	0.4594	4.99	0.3681	0.6139	0.7863	0.9110
Yahoo_Education	0.7140	4.90	0.5082	0.4460	0.7700	0.8903
Yahoo_Entertainment	0.6355	4.11	0.1469	0.5132	0.8062	0.8391
Yahoo_Health	0.4669	5.41	0.3271	0.6136	0.7244	0.9084
Yahoo_Recreation	0.6493	5.65	0.3615	0.4733	0.7472	0.7784
Yahoo_Reference	0.4994	4.60	0.3221	0.5947	0.7096	0.9195
Yahoo_Science	0.7201	10.99	0.5807	0.3780	0.8038	0.8114
Yahoo_Social	0.5380	5.02	0.2402	0.5895	0.7896	0.9142
yeast	0.2727	6.24	0.2134	0.7612	0.7072	0.8328
Yelp	0.1127	1.46	0.1355	0.8820	0.7963	0.8247

Table 125: Detailed results for Mr.KNN

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4497	3.78	0.3343	0.6395	0.9629	0.9629
3s-bbc1000	0.6111	2.28	0.5669	0.5685	0.8272	0.8110
3s-guardian1000	0.7419	2.61	0.7823	0.4608	0.7214	0.7130
3s-reuters1000	0.8667	2.43	0.6350	0.4089	0.7123	0.6723
bibtex	0.6554	74.73	0.6290	0.2984	0.9730	0.9721
birds	0.3590	4.46	0.2437	0.6678	0.8178	0.9147
bookmarks	0.6929	81.31	0.5677	0.3432	0.9687	0.9708
CAL500	0.5490	150.86	0.4140	0.3948	0.6834	0.8405
corel16k001	0.8671	104.99	0.7729	0.1472	0.9630	0.9614
Corel5k	0.8340	159.94	0.7469	0.1774	0.6617	0.9808
delicious	0.5177	837.68	0.5571	0.2655	0.9643	0.9731
emotions	0.2500	1.92	0.2163	0.8008	0.8131	0.8304
enron	0.4094	22.04	0.3813	0.5416	0.7913	0.9520
EukaryoteGO	0.2513	1.90	0.1311	0.8167	0.9874	0.9901
EukaryotePseAAC	0.7259	6.39	0.5110	0.4229	0.9297	0.9367
Eurlex-dc	0.5397	28.40	0.1896	0.6720	0.6125	0.8605
Eurlex-sm	0.3839	16.18	0.1786	0.6993	0.6892	0.9217
foodtruck	0.3415	3.76	0.2892	0.6874	0.6877	0.8381
genbase	0.0448	0.25	0.0017	0.9789	0.6663	0.9996
GnegativeGO	0.0500	0.19	0.0393	0.9637	0.8716	0.9976
GnegativePseAAC	0.5286	1.29	0.2481	0.6735	0.7635	0.9127
GpositivePseAAC	0.5000	0.73	0.2628	0.7163	0.7914	0.8104
HumanGO	0.2379	1.52	0.1463	0.8234	0.9734	0.9796
HumanPseAAC	0.7138	4.57	0.5067	0.4429	0.8764	0.8804
Image	0.3150	0.98	0.2304	0.7896	0.8611	0.8559
IMDB-ECC-F	0.7575	11.89	0.5633	0.3461	0.8677	0.8855
IMDB-F	0.7540	12.27	0.5679	0.3437	0.8591	0.8801
LLOG-F	0.8279	27.92	0.7152	0.2541	0.5680	0.9624
mediamill	0.1855	33.51	0.1912	0.7223	0.9733	0.9840
medical	0.2653	7.31	0.1863	0.7594	0.5463	0.9904
Music	0.2833	2.27	0.2713	0.7689	0.8501	0.8584
OHSUMED-F	0.8270	10.94	0.6455	0.3055	0.8879	0.8782
PlantGO	0.3542	1.50	0.1835	0.7553	0.9663	0.9674
PlantPseAAC	0.7755	3.60	0.5456	0.4292	0.8656	0.8616
rcv1subset1	0.7033	44.03	0.5424	0.3482	0.9064	0.9620
REUTERS-K500-EX2	0.4948	22.41	0.3631	0.5594	0.7728	0.9872
scene	0.2573	0.72	0.1538	0.8339	0.9309	0.9230
sider_CDK_ECFP4	0.1761	20.96	0.2296	0.7938	0.6645	0.7930
sider_MordredDesc	0.2606	20.69	0.2307	0.7599	0.6088	0.7089
sider_RDKit_desc	0.2254	20.48	0.2050	0.7863	0.6243	0.7671
SLASHDOT-F	0.6878	9.13	0.6033	0.3967	0.7219	0.9345
Stackex_chemistry	0.8401	99.77	0.7813	0.1633	0.8948	0.9755
Stackex_chess	0.8274	124.26	0.7131	0.1836	0.5329	0.9802
Stackex_coffee	0.8261	77.22	0.7144	0.1771	0.2478	0.9678
Stackex_cooking	0.9150	243.80	0.8702	0.0853	0.9122	0.9868
Stackex_cs	0.8180	156.09	0.7311	0.1833	0.8799	0.9824
Stackex_philosophy	0.8216	130.53	0.7215	0.1841	0.7329	0.9812
tmc2007-500	0.3332	5.69	0.2362	0.6925	0.9355	0.9506
tox21_CDK_ECFP4	0.5274	5.07	0.4071	0.5651	0.8284	0.8394
tox21_RDKit_desc	0.5103	4.84	0.3849	0.5781	0.8320	0.8446
VirusGO	0.1429	1.00	0.1825	0.8667	0.8076	0.9616
VirusPseAAC	0.4286	0.86	0.1714	0.7492	0.6407	0.8649
Water-quality	0.3491	9.20	0.3192	0.6755	0.7263	0.7507
Yahoo_Arts	0.7087	6.49	0.4884	0.4990	0.5800	0.8542
Yahoo_Business	0.1598	2.83	0.1884	0.8650	0.5950	0.9328
Yahoo_Computers	0.4755	6.59	0.4050	0.5749	0.8584	0.9592
Yahoo_Education	0.7398	9.30	0.5575	0.4054	0.8417	0.9400
Yahoo_Entertainment	0.6677	5.07	0.4929	0.4772	0.8985	0.9103
Yahoo_Health	0.5433	4.80	0.3376	0.6174	0.5158	0.9013
Yahoo_Recreation	0.7147	7.23	0.5437	0.4210	0.8812	0.8853
Yahoo_Reference	0.5527	4.46	0.2180	0.6508	0.4581	0.7867
Yahoo_Science	0.7589	14.77	0.6382	0.3354	0.9099	0.9366
Yahoo_Social	0.5569	8.02	0.3953	0.5370	0.8765	0.9604
yeast	0.3017	6.21	0.2435	0.7433	0.7842	0.8418
Yelp	0.1426	1.44	0.2315	0.8729	0.8768	0.8920

Table 126: Detailed results for SML-kNN

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4886	3.76	0.1339	0.6112	0.9544	0.8239
3s-bbc1000	0.7222	2.14	0.4236	0.5301	0.7115	0.6480
3s-guardian1000	0.6452	2.23	0.3226	0.5468	0.7108	0.6558
3s-reuters1000	0.7667	2.43	0.6417	0.4594	0.7118	0.5688
bibtex	0.5973	62.40	0.2694	0.3264	0.9638	0.7461
birds	0.5897	6.18	0.2124	0.4914	0.7652	0.7948
bookmarks	0.6420	63.65	0.0711	0.3725	0.9731	0.7543
CAL500	0.1765	132.35	0.4416	0.4318	0.6416	0.7832
corel16k001	0.7676	55.40	0.0840	0.2406	0.9383	0.8003
Corel5k	0.7660	111.82	0.5457	0.2217	0.6531	0.8647
delicious	0.4121	615.90	0.1350	0.3261	0.9382	0.8669
emotions	0.2833	1.75	0.1819	0.7924	0.8661	0.8502
enron	0.3099	14.02	0.0991	0.6298	0.7717	0.8896
EukaryoteGO	0.2124	1.27	0.0065	0.8533	0.9895	0.9588
EukaryotePseAAC	0.6641	3.29	0.0238	0.5199	0.9147	0.8704
Eurlex-dc	0.3771	35.99	0.1105	0.6559	0.7565	0.9224
Eurlex-sm	0.2641	19.59	0.1760	0.7061	0.8226	0.9454
foodtruck	0.2927	3.15	0.2959	0.7405	0.7038	0.8081
genbase	0.0149	0.55	0.0075	0.9869	0.6667	0.9895
GnegativeGO	0.0286	0.12	0.0125	0.9806	0.8723	0.9918
GnegativePseAAC	0.2643	0.76	0.1554	0.8247	0.8313	0.9240
GpositivePseAAC	0.2885	0.50	0.1538	0.8253	0.9111	0.8957
HumanGO	0.2058	1.06	0.0369	0.8531	0.9805	0.9465
HumanPseAAC	0.6752	3.03	0.1045	0.5054	0.8581	0.8064
Image	0.3200	0.91	0.0858	0.7960	0.8762	0.8478
IMDB-ECC-F	0.7482	8.91	0.1956	0.3760	0.8541	0.7619
IMDB-F	0.7405	9.53	0.2092	0.3748	0.8413	0.7510
LLOG-F	0.8033	15.95	0.2109	0.2953	0.5375	0.8216
mediamill	0.1223	16.05	0.0269	0.7490	0.9603	0.9498
medical	0.2245	4.00	0.1241	0.8023	0.5454	0.9306
Music	0.2000	1.73	0.1255	0.8458	0.8934	0.8926
OHSUMED-F	0.6863	7.80	0.3802	0.4113	0.8398	0.7449
PlantGO	0.2449	0.99	0.0536	0.8300	0.9783	0.9318
PlantPseAAC	0.7347	2.86	0.2798	0.4869	0.8459	0.7781
rcv1subset1	0.5550	25.41	0.1940	0.4581	0.9119	0.8494
REUTERS-K500-EX2	0.4900	11.21	0.1531	0.5875	0.7660	0.9158
scene	0.2282	0.53	0.0726	0.8615	0.9528	0.9364
sider_CDK_ECFP4	0.0845	19.32	0.1180	0.8386	0.7072	0.7979
sider_MordredDesc	0.1056	19.25	0.1224	0.8273	0.7149	0.8095
sider_RDKit_desc	0.0915	19.36	0.1204	0.8374	0.7091	0.8082
SLASHDOT-F	0.6649	4.65	0.0237	0.4615	0.7260	0.8108
Stackex_chemistry	0.8348	50.80	0.3807	0.2003	0.8690	0.8070
Stackex_chess	0.6964	68.02	0.1980	0.2682	0.5185	0.8262
Stackex_coffee	0.8696	60.30	0.3210	0.1821	0.2396	0.6858
Stackex_cooking	0.8734	151.38	0.2626	0.1190	0.8941	0.7657
Stackex_cs	0.7316	84.39	0.2521	0.2451	0.8634	0.8337
Stackex_philosophy	0.7538	64.97	0.2033	0.2295	0.7165	0.8249
tmc2007-500	0.3150	4.04	0.0969	0.7352	0.9348	0.9097
tox21_CDK_ECFP4	0.4966	4.51	0.1768	0.5867	0.7969	0.7575
tox21_RDKit_desc	0.4863	4.23	0.1603	0.6141	0.8191	0.7897
VirusGO	0.1429	0.81	0.0675	0.8817	0.7889	0.9145
VirusPseAAC	0.7619	1.29	0.0000	0.5667	0.7066	0.8176
Water-quality	0.2075	8.95	0.2470	0.7202	0.7457	0.7322
Yahoo_Arts	0.7130	6.60	0.3544	0.4193	0.8275	0.7975
Yahoo_Business	0.1399	2.45	0.1255	0.8545	0.8181	0.9394
Yahoo_Computers	0.4948	4.50	0.2991	0.6004	0.8431	0.8790
Yahoo_Education	0.7082	4.82	0.4026	0.4467	0.8204	0.8783
Yahoo_Entertainment	0.6277	3.96	0.1582	0.5175	0.8885	0.8387
Yahoo_Health	0.5375	4.21	0.3068	0.5830	0.7686	0.9051
Yahoo_Recreation	0.7186	6.34	0.4329	0.4196	0.8562	0.7498
Yahoo_Reference	0.5641	4.14	0.1311	0.5611	0.7643	0.8879
Yahoo_Science	0.7496	8.62	0.2343	0.3685	0.8852	0.8110
Yahoo_Social	0.5017	4.23	0.1871	0.6129	0.8725	0.9008
yeast	0.2810	6.31	0.2238	0.7443	0.7767	0.8358
Yelp	0.1715	1.48	0.1783	0.8588	0.8358	0.8368

Table 127: Detailed results for MLC-DWkNN.D

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4404	3.10	0.1025	0.6545	0.6340	0.6361
3s-bbc1000	0.5833	2.17	0.4375	0.5819	0.5433	0.5697
3s-guardian1000	0.5484	1.94	0.3548	0.6086	0.5664	0.6060
3s-reuters1000	0.9000	2.47	0.8250	0.3850	0.5138	0.4975
bibtex	0.6270	58.00	0.3697	0.3201	0.5853	0.6260
birds	0.5385	4.82	0.1725	0.5943	0.6283	0.7424
bookmarks	0.6068	63.74	0.3518	0.4104	0.6148	0.6511
CAL500	0.1373	143.06	0.4056	0.4865	0.4865	0.7726
corel16k001	0.7945	81.18	0.4817	0.2035	0.5302	0.6042
Corel5k	0.7480	144.78	0.5487	0.2283	0.3499	0.6045
delicious	0.4307	713.70	0.3154	0.3430	0.5630	0.6524
emotions	0.2167	1.62	0.1431	0.8275	0.8476	0.8705
enron	0.3567	16.56	0.1975	0.5981	0.5255	0.7365
EukaryoteGO	0.2265	1.07	0.0377	0.8498	0.7709	0.9348
EukaryotePseAAC	0.6538	3.58	0.0918	0.5243	0.5798	0.8029
Eurlex-dc	0.3787	27.77	0.1292	0.6806	0.5075	0.7741
Eurlex-sm	0.2713	15.38	0.1439	0.7222	0.5584	0.8020
foodtruck	0.2195	2.88	0.3012	0.7885	0.5540	0.7610
genbase	0.0299	0.25	0.0149	0.9838	0.6665	0.9999
GnegativeGO	0.0429	0.11	0.0071	0.9756	0.8410	0.9845
GnegativePseAAC	0.3143	0.90	0.2339	0.7911	0.6519	0.9009
GpositivePseAAC	0.2500	0.38	0.0769	0.8558	0.9326	0.9252
HumanGO	0.2701	1.00	0.0538	0.8225	0.7872	0.9096
HumanPseAAC	0.6849	3.20	0.1511	0.5075	0.5859	0.7518
Image	0.2950	0.86	0.1292	0.8159	0.8415	0.8374
IMDB-ECC-F	0.6526	9.45	0.2721	0.4427	0.5012	0.6645
IMDB-F	0.6509	9.63	0.2563	0.4376	0.5054	0.6560
LLOG-F	0.7951	17.84	0.3171	0.3109	0.3210	0.6333
mediamill	0.1028	15.59	0.0366	0.7845	0.6645	0.8703
medical	0.2755	3.53	0.1054	0.7923	0.4106	0.8981
Music	0.2000	1.85	0.1611	0.8244	0.8400	0.8571
OHSUMED-F	0.6569	7.71	0.2994	0.4287	0.5590	0.6609
PlantGO	0.4592	1.17	0.0578	0.7186	0.8267	0.8547
PlantPseAAC	0.7041	2.77	0.3656	0.5037	0.5885	0.7263
rcv1subset1	0.7217	30.86	0.2435	0.3671	0.5209	0.6576
REUTERS-K500-EX2	0.4850	10.21	0.1301	0.6134	0.5810	0.7853
scene	0.2531	0.45	0.0301	0.8568	0.9306	0.9324
sider_CDK_ECFP4	0.0915	18.78	0.0949	0.8485	0.5856	0.7677
sider_MordredDesc	0.0634	19.03	0.1006	0.8571	0.5306	0.7561
sider_RDKit_desc	0.0634	18.94	0.0993	0.8548	0.5344	0.7603
SLASHDOT-F	0.8127	7.00	0.3593	0.3677	0.4107	0.5809
Stackex_chemistry	0.7701	61.22	0.3911	0.2516	0.4983	0.6005
Stackex_chess	0.7262	83.65	0.3981	0.2516	0.3009	0.6152
Stackex_coffee	0.8261	62.35	0.3400	0.2069	0.1387	0.6137
Stackex_cooking	0.8357	183.38	0.4440	0.1583	0.4636	0.5583
Stackex_cs	0.6916	100.20	0.3388	0.2793	0.4931	0.6323
Stackex_philosophy	0.7337	81.02	0.2871	0.2827	0.3972	0.6095
tmc2007-500	0.3028	3.44	0.0991	0.7522	0.7502	0.8533
tox21_CDK_ECFP4	0.4692	4.04	0.1252	0.6209	0.6591	0.7308
tox21_RDKit_desc	0.4452	4.05	0.1202	0.6357	0.6896	0.7579
VirusGO	0.1905	0.62	0.0635	0.8772	0.7070	0.8943
VirusPseAAC	0.3810	0.71	0.0000	0.7873	0.6023	0.8675
Water-quality	0.2075	8.75	0.2284	0.7197	0.7070	0.7508
Yahoo_Arts	0.6529	6.43	0.4327	0.4801	0.5133	0.6339
Yahoo_Business	0.1203	2.76	0.1432	0.8765	0.5419	0.8527
Yahoo_Computers	0.4217	4.63	0.3740	0.6483	0.5225	0.7363
Yahoo_Education	0.6459	4.54	0.3690	0.5014	0.5065	0.6806
Yahoo_Entertainment	0.6159	3.76	0.1297	0.5359	0.5261	0.6744
Yahoo_Health	0.4701	4.84	0.2950	0.6334	0.4796	0.7514
Yahoo_Recreation	0.6750	5.19	0.4365	0.4705	0.5717	0.6161
Yahoo_Reference	0.4558	4.38	0.1391	0.6231	0.4369	0.7401
Yahoo_Science	0.7294	8.90	0.2544	0.4071	0.5175	0.6000
Yahoo_Social	0.4678	4.41	0.1895	0.6469	0.5301	0.7563
yeast	0.2025	5.95	0.1809	0.7872	0.7061	0.8521
Yelp	0.0798	1.41	0.1358	0.8987	0.7100	0.7602

Table 128: Detailed results for MLC-DWkNN.M

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5777	3.60	0.0685	0.5583	0.7406	0.7385
3s-bbc1000	0.6667	2.53	0.6875	0.5051	0.5619	0.5962
3s-guardian1000	0.5484	1.68	0.4435	0.6430	0.6056	0.7338
3s-reuters1000	0.8667	2.37	0.8667	0.4236	0.5517	0.5344
bibtex	0.6946	59.84	0.3469	0.2548	0.6653	0.7001
birds	0.6410	5.79	0.1902	0.4836	0.6407	0.7666
bookmarks	0.6356	57.03	0.2617	0.3974	0.6826	0.7297
CAL500	0.1373	142.63	0.4042	0.4924	0.4977	0.8052
corel16k001	0.7858	66.78	0.2603	0.2089	0.5766	0.7230
Corel5k	0.7660	141.30	0.6159	0.2251	0.3703	0.7243
delicious	0.3915	636.15	0.1737	0.3411	0.6111	0.7668
emotions	0.2333	1.58	0.1250	0.8282	0.8556	0.8787
enron	0.4795	17.05	0.1811	0.5530	0.5476	0.8166
EukaryoteGO	0.2162	0.95	0.0223	0.8563	0.8508	0.9657
EukaryotePseAAC	0.6499	3.63	0.0898	0.5213	0.6238	0.8482
Eurlex-dc	0.4951	28.37	0.1384	0.5934	0.5601	0.8472
Eurlex-sm	0.3752	16.16	0.1741	0.6416	0.6152	0.8807
foodtruck	0.2195	2.95	0.2988	0.7855	0.6330	0.7966
genbase	0.0896	0.39	0.0075	0.9399	0.6667	0.9966
GnegativeGO	0.0429	0.15	0.0143	0.9711	0.8656	0.9893
GnegativePseAAC	0.3357	0.95	0.2679	0.7765	0.6977	0.9112
GpositivePseAAC	0.2500	0.42	0.0962	0.8510	0.9427	0.9225
HumanGO	0.2765	1.03	0.0458	0.8120	0.8603	0.9368
HumanPseAAC	0.6720	3.22	0.1457	0.5060	0.6356	0.7832
Image	0.3250	0.91	0.1329	0.7972	0.8526	0.8463
IMDB-ECC-F	0.6435	8.68	0.1853	0.4568	0.5141	0.7320
IMDB-F	0.6374	8.85	0.1883	0.4564	0.5156	0.7327
LLOG-F	0.8033	17.56	0.3118	0.3019	0.3385	0.7310
mediamill	0.1278	16.37	0.0373	0.7471	0.7283	0.9296
medical	0.3878	3.10	0.0969	0.7245	0.4496	0.9305
Music	0.2667	1.95	0.1796	0.7956	0.8429	0.8567
OHSUMED-F	0.6403	7.47	0.2878	0.4362	0.6330	0.7468
PlantGO	0.6327	1.36	0.0510	0.6319	0.9091	0.8923
PlantPseAAC	0.6837	2.77	0.3087	0.5096	0.6570	0.7818
rcv1subset1	0.8167	32.10	0.2455	0.2978	0.5659	0.7412
REUTERS-K500-EX2	0.5433	9.61	0.1068	0.5712	0.6514	0.8897
scene	0.2531	0.46	0.0415	0.8555	0.9441	0.9417
sider_CDK_ECFP4	0.1408	19.11	0.0954	0.8425	0.6056	0.7885
sider_MordredDesc	0.0634	19.04	0.0959	0.8554	0.5130	0.7515
sider_RDKit_desc	0.0634	19.10	0.0963	0.8537	0.5015	0.7516
SLASHDOT-F	0.8522	6.41	0.2962	0.3515	0.4305	0.6124
Stackex_chemistry	0.7716	60.58	0.4009	0.2607	0.5380	0.7272
Stackex_chess	0.7679	83.96	0.3718	0.2378	0.3232	0.7120
Stackex_coffee	0.7826	59.61	0.2711	0.2120	0.1477	0.6804
Stackex_cooking	0.8203	181.92	0.4369	0.1829	0.4934	0.6594
Stackex_cs	0.6840	99.19	0.3428	0.2834	0.5415	0.7518
Stackex_philosophy	0.7789	79.71	0.2738	0.2689	0.4136	0.7195
tmc2007-500	0.3175	3.38	0.1054	0.7388	0.8494	0.9164
tox21_CDK_ECFP4	0.5240	4.22	0.1129	0.5910	0.6907	0.7607
tox21_RDKit_desc	0.4589	4.17	0.1095	0.6209	0.7072	0.7749
VirusGO	0.1905	0.71	0.0556	0.8786	0.7390	0.8915
VirusPseAAC	0.5238	1.00	0.0000	0.6921	0.6579	0.8493
Water-quality	0.2453	8.89	0.2286	0.7074	0.7148	0.7528
Yahoo_Arts	0.6916	6.48	0.4878	0.4591	0.5392	0.7661
Yahoo_Business	0.1283	2.79	0.1597	0.8708	0.5639	0.9159
Yahoo_Computers	0.4651	4.64	0.4142	0.6272	0.5484	0.8269
Yahoo_Education	0.6550	4.46	0.3359	0.5032	0.5300	0.8541
Yahoo_Entertainment	0.6347	3.79	0.1379	0.5268	0.5513	0.8124
Yahoo_Health	0.5071	4.76	0.3234	0.6161	0.4943	0.8591
Yahoo_Recreation	0.7147	5.13	0.4900	0.4547	0.6111	0.7458
Yahoo_Reference	0.4981	4.43	0.1382	0.6021	0.4470	0.7902
Yahoo_Science	0.7527	8.78	0.2463	0.3963	0.5404	0.7405
Yahoo_Social	0.4917	4.37	0.1835	0.6370	0.5511	0.8604
yeast	0.2107	6.07	0.1980	0.7763	0.7131	0.8540
Yelp	0.3340	1.65	0.3949	0.7804	0.7277	0.7772

Table 129: Detailed results for MLC-DWkNN.Z

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5352	3.44	0.0665	0.5886	0.5550	0.5544
3s-bbc1000	0.5556	2.14	0.4722	0.5856	0.5462	0.5592
3s-guardian1000	0.6774	2.16	0.3790	0.5247	0.5508	0.5638
3s-reuters1000	0.8333	2.53	0.7500	0.4039	0.5121	0.4981
bibtex	0.6824	59.78	0.3467	0.2612	0.5217	0.5541
birds	0.4359	4.59	0.1400	0.6313	0.5995	0.6960
bookmarks	0.6134	56.83	0.2611	0.4128	0.6090	0.6433
CAL500	0.1176	143.20	0.4034	0.4863	0.4765	0.6606
corel16k001	0.7894	66.80	0.2603	0.2075	0.5393	0.6389
Corel5k	0.7680	141.31	0.6168	0.2253	0.3649	0.6564
delicious	0.3766	633.96	0.1721	0.3605	0.5203	0.6079
emotions	0.2167	1.60	0.1306	0.8303	0.8285	0.8429
enron	0.4094	16.42	0.1744	0.5894	0.5562	0.7392
EukaryoteGO	0.2188	0.96	0.0223	0.8540	0.7449	0.9267
EukaryotePseAAC	0.6525	3.60	0.0898	0.5234	0.4947	0.5879
Eurlex-dc	0.4232	28.38	0.1352	0.6454	0.4954	0.7241
Eurlex-sm	0.3214	15.77	0.1627	0.6870	0.5346	0.7424
foodtruck	0.2195	2.90	0.2913	0.7949	0.5530	0.7528
genbase	0.0299	0.25	0.0149	0.9838	0.6659	0.9984
GnegativeGO	0.0500	0.16	0.0214	0.9675	0.8226	0.9761
GnegativePseAAC	0.3500	0.92	0.2696	0.7736	0.5669	0.7798
GpositivePseAAC	0.2692	0.40	0.1538	0.8462	0.7379	0.7970
HumanGO	0.2830	1.04	0.0474	0.8104	0.7765	0.8655
HumanPseAAC	0.6720	3.22	0.1465	0.5074	0.5458	0.5734
Image	0.2750	0.86	0.1317	0.8211	0.7940	0.7941
IMDB-ECC-F	0.6424	8.66	0.1828	0.4581	0.4996	0.6226
IMDB-F	0.6375	8.84	0.1863	0.4565	0.4962	0.6058
LLOG-F	0.7951	17.48	0.3118	0.3099	0.2877	0.5356
mediamill	0.0931	15.41	0.0357	0.7928	0.7183	0.8719
medical	0.3776	3.09	0.0995	0.7316	0.4006	0.8208
Music	0.2000	1.88	0.1736	0.8222	0.8207	0.8278
OHSUMED-F	0.6418	7.45	0.2880	0.4356	0.4894	0.5367
PlantGO	0.6122	1.37	0.0612	0.6380	0.6669	0.7387
PlantPseAAC	0.7041	2.76	0.3452	0.5072	0.4699	0.5160
rcv1subset1	0.7183	32.23	0.2600	0.3627	0.6007	0.6437
REUTERS-K500-EX2	0.5150	9.43	0.1050	0.5981	0.5398	0.6891
scene	0.2573	0.45	0.0332	0.8548	0.8298	0.8218
sider_CDK_ECFP4	0.1056	18.72	0.0902	0.8501	0.5833	0.7760
sider_MordredDesc	0.0915	19.10	0.1173	0.8420	0.6116	0.7615
sider_RDKit_desc	0.0634	18.89	0.0975	0.8572	0.5400	0.7649
SLASHDOT-F	0.8522	6.40	0.2988	0.3512	0.4742	0.6427
Stackex_chemistry	0.7716	60.66	0.3981	0.2590	0.4630	0.5241
Stackex_chess	0.7500	83.71	0.3707	0.2383	0.2987	0.5427
Stackex_coffee	0.8261	60.61	0.2711	0.2106	0.1518	0.5869
Stackex_cooking	0.8232	182.04	0.4369	0.1769	0.4760	0.5231
Stackex_cs	0.6861	99.18	0.3404	0.2842	0.4943	0.5335
Stackex_philosophy	0.7739	79.57	0.2754	0.2758	0.3902	0.5286
tmc2007-500	0.3129	3.33	0.1015	0.7456	0.6945	0.7969
tox21_CDK_ECFP4	0.4863	4.04	0.1223	0.6136	0.6169	0.6763
tox21_RDKit_desc	0.4349	4.03	0.1278	0.6409	0.6549	0.6984
VirusGO	0.1429	0.67	0.0556	0.9024	0.7238	0.9089
VirusPseAAC	0.2857	0.67	0.0000	0.8230	0.6286	0.8632
Water-quality	0.2264	8.76	0.2172	0.7132	0.6894	0.7323
Yahoo_Arts	0.6809	6.44	0.4805	0.4647	0.5015	0.5263
Yahoo_Business	0.1248	2.77	0.1532	0.8738	0.5401	0.7887
Yahoo_Computers	0.4418	4.58	0.3958	0.6399	0.5267	0.6916
Yahoo_Education	0.6550	4.46	0.3337	0.5039	0.4652	0.5195
Yahoo_Entertainment	0.6308	3.76	0.1364	0.5322	0.5512	0.5805
Yahoo_Health	0.4853	4.72	0.3129	0.6291	0.4885	0.6535
Yahoo_Recreation	0.6820	4.99	0.4574	0.4781	0.5560	0.5344
Yahoo_Reference	0.4832	4.39	0.1395	0.6109	0.4404	0.7158
Yahoo_Science	0.7418	8.85	0.2471	0.4026	0.4949	0.5230
Yahoo_Social	0.4810	4.34	0.1830	0.6437	0.4561	0.6702
yeast	0.2025	5.93	0.1831	0.7875	0.7056	0.8443
Yelp	0.0678	1.30	0.1338	0.9163	0.8432	0.8873

Table 130: Detailed results for IBLR-ML

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5057	2.97	0.1284	0.6216	0.8753	0.8718
3s-bbc1000	0.7500	2.64	0.7917	0.4497	0.5636	0.5644
3s-guardian1000	0.5484	1.68	0.5968	0.6331	0.6015	0.7093
3s-reuters1000	0.8667	2.40	0.8667	0.4178	0.6226	0.5302
bibtex	0.7946	58.26	0.1857	0.2044	0.6946	0.7367
birds	0.5897	7.18	0.2450	0.4568	0.6377	0.7283
bookmarks	0.6946	46.40	0.1439	0.3440	0.7964	0.8474
CAL500	0.1373	131.20	0.4195	0.4912	0.5135	0.8148
corel16k001	0.7473	51.49	0.0710	0.2724	0.6043	0.8187
Corel5k	0.7480	109.18	0.5524	0.2296	0.3830	0.8640
delicious	0.4270	565.29	0.0916	0.2816	0.6098	0.8516
emotions	0.2667	1.88	0.1111	0.7937	0.8368	0.8527
enron	0.3860	15.03	0.0702	0.5537	0.4719	0.8626
EukaryoteGO	0.3243	1.50	0.0083	0.7739	0.7340	0.9296
EukaryotePseAAC	0.6705	3.23	0.0152	0.5129	0.5849	0.8601
Eurlex-dc	0.5510	26.78	0.0961	0.5373	0.6181	0.9302
Eurlex-sm	0.4703	20.33	0.3467	0.5302	0.6062	0.9167
foodtruck	0.2439	3.20	0.3538	0.7582	0.5051	0.7591
genbase	0.0149	0.39	0.0075	0.9862	0.6442	0.9904
GnegativeGO	0.2071	0.35	0.1571	0.8860	0.8432	0.9636
GnegativePseAAC	0.4286	1.05	0.3696	0.7254	0.7253	0.8955
GpositivePseAAC	0.3077	0.56	0.1923	0.8109	0.8963	0.8592
HumanGO	0.5177	2.14	0.0540	0.6295	0.7835	0.8737
HumanPseAAC	0.6752	2.70	0.0616	0.5193	0.6203	0.8150
Image	0.3350	0.85	0.0721	0.7984	0.8519	0.8457
IMDB-ECC-F	0.6403	7.54	0.1993	0.4676	0.5108	0.7958
IMDB-F	0.6350	7.68	0.2053	0.4702	0.5219	0.7984
LLOG-F	0.8115	16.01	0.2589	0.2793	0.3635	0.8078
mediamill	0.1575	19.53	0.0356	0.6894	0.6292	0.9223
medical	0.5102	4.40	0.1678	0.6065	0.4527	0.9233
Music	0.2833	1.95	0.1051	0.7921	0.8600	0.8626
OHSUMED-F	0.7006	7.24	0.3347	0.4090	0.5917	0.7575
PlantGO	0.6531	2.62	0.1522	0.5425	0.7244	0.7812
PlantPseAAC	0.7041	2.89	0.2364	0.4993	0.6873	0.7855
rcv1subset1	0.7317	33.16	0.2442	0.2707	0.4717	0.8028
REUTERS-K500-EX2	0.5717	10.50	0.0511	0.5302	0.6164	0.9146
scene	0.2490	0.54	0.0456	0.8497	0.9283	0.9276
sider_CDK_ECFP4	0.0986	19.27	0.0965	0.8446	0.5428	0.8067
sider_MordredDesc	0.0986	19.25	0.0947	0.8468	0.5749	0.8154
sider_RDKit_desc	0.0986	19.25	0.0937	0.8474	0.5629	0.8147
SLASHDOT-F	0.8443	5.14	0.0171	0.3525	0.5035	0.7724
Stackex_chemistry	0.7960	47.05	0.4066	0.2495	0.5369	0.8118
Stackex_chess	0.7679	68.50	0.1858	0.2421	0.3471	0.8205
Stackex_coffee	0.7826	64.09	0.2385	0.2471	0.1838	0.6672
Stackex_cooking	0.8261	125.41	0.1979	0.1785	0.6104	0.8060
Stackex_cs	0.6591	72.71	0.2640	0.2811	0.6132	0.8548
Stackex_philosophy	0.7864	60.86	0.1561	0.2706	0.4483	0.8294
tmc2007-500	0.3857	4.95	0.1906	0.6501	0.7776	0.8735
tox21_CDK_ECFP4	0.6267	4.60	0.0998	0.5253	0.5801	0.7000
tox21_RDKit_desc	0.5342	4.33	0.0877	0.5774	0.6270	0.7211
VirusGO	0.3810	1.10	0.0198	0.7479	0.6520	0.8301
VirusPseAAC	0.6190	1.62	0.0000	0.6063	0.5910	0.8176
Water-quality	0.2547	9.27	0.2336	0.6823	0.6617	0.6902
Yahoo_Arts	0.7210	6.23	0.4178	0.4500	0.5639	0.7999
Yahoo_Business	0.1319	2.51	0.1563	0.8675	0.4921	0.9264
Yahoo_Computers	0.4900	4.63	0.4330	0.6002	0.5276	0.8534
Yahoo_Education	0.6816	4.35	0.3390	0.4869	0.4771	0.8838
Yahoo_Entertainment	0.6292	3.55	0.1015	0.5486	0.5644	0.8450
Yahoo_Health	0.5103	4.08	0.3629	0.6052	0.4347	0.8957
Yahoo_Recreation	0.7459	5.15	0.5799	0.4260	0.6303	0.7778
Yahoo_Reference	0.4956	3.87	0.1597	0.5862	0.4482	0.8830
Yahoo_Science	0.7512	7.90	0.1693	0.4026	0.5458	0.8205
Yahoo_Social	0.5371	4.08	0.1711	0.6073	0.5765	0.8945
yeast	0.2603	6.26	0.2594	0.7403	0.6389	0.8240
Yelp	0.3360	1.63	0.4095	0.7798	0.6930	0.7873

Table 131: Detailed results for IBLR-ML+

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2705	1.04	0.0492	0.8201	0.9511	0.9511
3s-bbc1000	0.3889	1.28	0.2500	0.7384	0.7888	0.7802
3s-guardian1000	0.6129	1.87	0.1613	0.5863	0.7133	0.6942
3s-reuters1000	0.6667	1.60	0.3000	0.5622	0.7247	0.7069
bibtex	0.3541	26.81	0.0849	0.5989	0.8913	0.9102
birds	0.3590	4.74	0.1491	0.6673	0.7536	0.8467
bookmarks	0.5613	38.77	0.1080	0.4719	0.8713	0.8700
CAL500	0.1176	134.61	0.3842	0.4954	0.5336	0.8123
corel16k001	0.6412	65.18	0.2038	0.3237	0.7104	0.7798
Corel5k	0.6000	185.45	0.3150	0.3013	0.4719	0.7813
delicious	0.3176	497.89	0.0726	0.3831	0.7472	0.8963
emotions	0.3000	1.68	0.2014	0.7948	0.8576	0.8763
enron	0.2281	18.10	0.1187	0.6812	0.6256	0.8519
EukaryoteGO	0.2381	1.41	0.0479	0.8390	0.9688	0.9463
EukaryotePseAAC	0.5611	3.39	0.0816	0.5961	0.6941	0.8647
Eurlex-dc	0.2840	14.86	0.0245	0.7723	0.7099	0.9658
Eurlex-sm	0.1421	18.38	0.0435	0.8271	0.7679	0.9500
foodtruck	0.3415	3.02	0.2939	0.7143	0.6311	0.8094
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0643	0.16	0.0089	0.9635	0.8703	0.9910
GnegativePseAAC	0.2143	0.75	0.0571	0.8504	0.6812	0.9238
GpositivePseAAC	0.2692	0.40	0.0769	0.8462	0.9014	0.9144
HumanGO	0.2347	1.24	0.0787	0.8409	0.9204	0.9203
HumanPseAAC	0.5659	2.91	0.1422	0.6011	0.6700	0.8034
Image	0.2850	0.81	0.0983	0.8204	0.8446	0.8442
IMDB-ECC-F	0.6126	7.75	0.1768	0.4920	0.6511	0.8033
IMDB-F	0.5965	8.01	0.1814	0.4943	0.6440	0.8025
LLOG-F	0.5738	12.98	0.1547	0.4917	0.4747	0.8696
mediamill	0.1204	17.15	0.0326	0.7298	0.7120	0.9366
medical	0.1939	1.32	0.0383	0.8672	0.5190	0.9773
Music	0.1667	1.90	0.1685	0.8284	0.8516	0.8597
OHSUMED-F	0.3116	4.59	0.1104	0.7128	0.8523	0.8732
PlantGO	0.3367	1.09	0.0757	0.7901	0.9395	0.9203
PlantPseAAC	0.5918	3.11	0.2543	0.5504	0.6952	0.7454
rcv1subset1	0.4417	20.84	0.1064	0.5599	0.7680	0.8890
REUTERS-K500-EX2	0.4633	10.53	0.0776	0.6290	0.6728	0.9187
scene	0.2199	0.49	0.0840	0.8654	0.9306	0.9343
sider_CDK_ECFP4	0.1197	19.18	0.1241	0.8347	0.5931	0.7926
sider_MordredDesc	0.0634	19.20	0.1124	0.8449	0.5473	0.7936
sider_RDKit_desc	0.1127	19.18	0.1028	0.8445	0.5600	0.8101
SLASHDOT-F	0.3588	2.82	0.0786	0.7221	0.6761	0.9013
Stackex_chemistry	0.5632	48.01	0.1500	0.4345	0.7453	0.8310
Stackex_chess	0.4821	64.72	0.1600	0.4411	0.4488	0.8321
Stackex_coffee	0.9130	35.57	0.1416	0.2610	0.1926	0.7898
Stackex_cooking	0.4039	86.17	0.1048	0.5155	0.7819	0.8885
Stackex_cs	0.4177	57.73	0.1094	0.5258	0.7844	0.9048
Stackex_philosophy	0.4322	65.74	0.1528	0.4993	0.5982	0.8407
tmc2007-500	0.2087	3.00	0.0553	0.8185	0.9183	0.9403
tox21_CDK_ECFP4	0.4623	4.59	0.1687	0.6063	0.6963	0.7313
tox21_RDKit_desc	0.4795	4.30	0.1234	0.6092	0.6821	0.7572
VirusGO	0.1429	0.38	0.0714	0.9272	0.7472	0.9461
VirusPseAAC	0.3810	1.43	0.2738	0.7238	0.5978	0.7573
Water-quality	0.2264	8.92	0.2447	0.7109	0.6895	0.7252
Yahoo_Arts	0.4232	8.35	0.2045	0.5948	0.7054	0.7430
Yahoo_Business	0.1658	3.96	0.0827	0.8407	0.7259	0.9060
Yahoo_Computers	0.3357	7.30	0.2274	0.6902	0.7307	0.8201
Yahoo_Education	0.4788	10.71	0.2082	0.5622	0.7264	0.7237
Yahoo_Entertainment	0.3519	5.20	0.2150	0.6753	0.7814	0.7827
Yahoo_Health	0.2693	6.63	0.1280	0.7448	0.6332	0.8403
Yahoo_Recreation	0.3539	4.86	0.1592	0.6836	0.8341	0.8085
Yahoo_Reference	0.3512	5.70	0.1171	0.7083	0.5971	0.8428
Yahoo_Science	0.4588	11.79	0.2368	0.5640	0.7847	0.7390
Yahoo_Social	0.3210	8.28	0.1623	0.7086	0.7181	0.8130
yeast	0.1694	6.25	0.1977	0.7832	0.6894	0.8446
Yelp	0.1595	1.31	0.1145	0.8840	0.8293	0.8613

Table 132: Detailed results for FRONEC-1.H

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9508	9.63	0.7302	0.1785	0.7686	0.7583
3s-bbc1000	0.6944	3.06	0.7500	0.4491	0.5155	0.5175
3s-guardian1000	0.6452	2.55	0.6452	0.5344	0.5658	0.6122
3s-reuters1000	0.7667	2.33	0.6833	0.4433	0.5774	0.5452
bibtex	0.9338	94.47	0.8732	0.0777	0.9276	0.9265
birds	0.8974	9.59	0.6285	0.2983	0.6825	0.7988
bookmarks	0.9866	114.52	0.7410	0.0433	0.9151	0.8831
CAL500	0.4902	152.02	0.7676	0.3098	0.7769	0.9032
corel16k001	0.9463	112.62	0.8937	0.0790	0.9743	0.9754
Corel5k	0.9160	169.71	0.8841	0.1222	0.6614	0.9779
delicious	0.9086	908.90	0.8338	0.0541	0.9441	0.9493
emotions	0.6833	3.05	0.5444	0.5450	0.6370	0.6551
enron	0.5322	30.11	0.5088	0.3384	0.7229	0.9087
EukaryoteGO	0.7477	6.13	0.2783	0.3961	0.7202	0.7921
EukaryotePseAAC	0.7516	5.55	0.3579	0.4116	0.8580	0.8905
Eurlex-dc	0.9762	127.61	0.7661	0.0677	0.7359	0.9715
Eurlex-sm	0.8879	69.95	0.8741	0.1576	0.7811	0.9502
foodtruck	0.3171	4.49	0.4520	0.6698	0.5477	0.7379
genbase	0.7612	7.07	0.2056	0.3995	0.4274	0.7498
GnegativeGO	0.8714	1.86	0.5250	0.4662	0.5377	0.7546
GnegativePseAAC	0.6286	1.96	0.5696	0.5714	0.4551	0.7004
GpositivePseAAC	0.6538	1.08	0.6346	0.6090	0.6058	0.6718
HumanGO	0.7074	3.77	0.2483	0.4733	0.7943	0.8391
HumanPseAAC	0.7042	4.61	0.3705	0.4464	0.7776	0.8241
Image	0.7250	2.15	0.3604	0.5045	0.5123	0.5194
IMDB-ECC-F	0.7493	11.64	0.5830	0.3464	0.8042	0.8389
IMDB-F	0.7679	12.41	0.5229	0.3243	0.8177	0.8475
LLOG-F	0.8361	21.57	0.3175	0.2406	0.5604	0.8707
mediamill	0.4727	58.69	0.4574	0.4193	0.9364	0.9612
medical	0.7041	17.82	0.4442	0.3591	0.4685	0.9004
Music	0.5833	3.63	0.4861	0.5411	0.5880	0.6070
OHSUMED-F	0.8650	12.58	0.8072	0.2391	0.8957	0.9002
PlantGO	0.7653	3.56	0.1854	0.4306	0.6483	0.7196
PlantPseAAC	0.7143	4.11	0.4048	0.4304	0.7595	0.7930
rcv1subset1	0.8900	55.76	0.7662	0.1620	0.8567	0.9187
REUTERS-K500-EX2	0.9550	45.00	0.6647	0.1242	0.7102	0.9205
scene	0.8133	2.72	0.3496	0.4131	0.5299	0.5129
sider_CDK_ECFP4	0.4296	23.32	0.5475	0.6721	0.6691	0.7713
sider_MordredDesc	0.4014	22.96	0.5242	0.6781	0.6742	0.7836
sider_RDKit_desc	0.4085	23.35	0.5576	0.6749	0.6935	0.7942
SLASHDOT-F	0.8575	6.75	0.1231	0.2995	0.5661	0.7559
Stackex_chemistry	0.9526	106.29	0.8694	0.0854	0.8988	0.9793
Stackex_chess	0.9464	145.11	0.8808	0.0742	0.5322	0.9788
Stackex_coffee	1.0000	82.39	0.9611	0.0348	0.2474	0.9515
Stackex_cooking	0.9826	256.59	0.9590	0.0271	0.9022	0.9763
Stackex_cs	0.9102	175.78	0.9332	0.0826	0.8839	0.9863
Stackex_philosophy	0.9447	144.77	0.8928	0.0744	0.7322	0.9786
tmc2007-500	0.5640	8.86	0.4627	0.4624	0.7797	0.8399
tox21_CDK_ECFP4	0.7295	6.63	0.6511	0.4013	0.6639	0.6850
tox21_RDKit_desc	0.6986	6.31	0.5952	0.4154	0.6379	0.6621
VirusGO	0.3810	1.24	0.0635	0.7270	0.5363	0.8091
VirusPseAAC	0.6667	1.57	0.0714	0.5770	0.4825	0.7708
Water-quality	0.6132	10.77	0.6739	0.5257	0.7044	0.7171
Yahoo_Arts	0.8131	12.07	0.6375	0.3060	0.8023	0.8532
Yahoo_Business	0.1319	3.71	0.1779	0.8505	0.7159	0.9505
Yahoo_Computers	0.4932	6.61	0.5102	0.5556	0.6894	0.8683
Yahoo_Education	0.8537	9.24	0.6330	0.3032	0.7834	0.8853
Yahoo_Entertainment	0.8099	5.94	0.4683	0.3692	0.8203	0.8409
Yahoo_Health	0.5288	6.89	0.3528	0.5571	0.7005	0.9045
Yahoo_Recreation	0.8285	9.08	0.6007	0.3089	0.8259	0.8286
Yahoo_Reference	0.4944	5.82	0.3033	0.5703	0.6689	0.9043
Yahoo_Science	0.8429	15.03	0.6542	0.2733	0.8813	0.9116
Yahoo_Social	0.5710	6.98	0.2755	0.5372	0.8149	0.9327
yeast	0.5165	7.46	0.5571	0.6082	0.6806	0.7740
Yelp	0.3719	1.95	0.4140	0.7261	0.5546	0.6932

Table 133: Detailed results for FRONEC-2.H

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9523	9.73	0.7228	0.1741	0.7552	0.7445
3s-bbc1000	0.7222	3.03	0.7778	0.4324	0.5259	0.5212
3s-guardian1000	0.6452	2.55	0.6210	0.5376	0.4945	0.5946
3s-reuters1000	0.7667	2.53	0.7000	0.4303	0.5950	0.5310
bibtex	0.9770	96.11	0.9540	0.0505	0.9658	0.9653
birds	0.8974	9.21	0.5533	0.2793	0.6153	0.7472
bookmarks	0.9899	117.63	0.8351	0.0392	0.9401	0.9371
CAL500	0.4902	151.39	0.7678	0.3113	0.7768	0.9022
corel16k001	0.9317	110.83	0.8706	0.0883	0.9719	0.9730
Corel5k	0.8860	169.62	0.9416	0.1194	0.6725	0.9901
delicious	0.9329	919.25	0.9181	0.0430	0.9771	0.9827
emotions	0.6333	3.15	0.5111	0.5468	0.5234	0.5643
enron	0.4737	22.77	0.2368	0.4484	0.6768	0.8885
EukaryoteGO	0.7477	6.17	0.2718	0.3971	0.7067	0.7864
EukaryotePseAAC	0.7336	4.90	0.2781	0.4399	0.8508	0.8901
Eurlex-dc	0.9772	127.80	0.7643	0.0686	0.7358	0.9703
Eurlex-sm	0.8780	68.60	0.8514	0.1596	0.7746	0.9430
foodtruck	0.2683	4.15	0.3878	0.7190	0.5427	0.7602
genbase	0.7910	7.16	0.2172	0.3783	0.3890	0.7218
GnegativeGO	0.8786	1.86	0.5321	0.4627	0.5367	0.7540
GnegativePseAAC	0.5571	1.69	0.5214	0.6263	0.5033	0.7774
GpositivePseAAC	0.6538	1.08	0.6346	0.6090	0.6058	0.6718
HumanGO	0.6688	3.49	0.1977	0.5023	0.7779	0.8321
HumanPseAAC	0.6913	4.28	0.3098	0.4664	0.7666	0.8222
Image	0.7250	2.12	0.3513	0.5060	0.5231	0.5306
IMDB-ECC-F	0.7162	10.72	0.5040	0.3792	0.7691	0.8213
IMDB-F	0.7609	12.12	0.4941	0.3318	0.8083	0.8416
LLOG-F	0.9426	29.19	0.7391	0.1407	0.5322	0.9253
mediamill	0.3981	54.22	0.3924	0.4680	0.9184	0.9521
medical	0.6939	16.13	0.3957	0.3623	0.4672	0.8953
Music	0.6167	3.38	0.4065	0.5492	0.5276	0.5533
OHSUMED-F	0.8543	12.12	0.7533	0.2527	0.8664	0.8725
PlantGO	0.7653	3.56	0.1854	0.4306	0.6483	0.7196
PlantPseAAC	0.7143	3.42	0.2202	0.4710	0.7560	0.7929
rcv1subset1	0.8583	47.94	0.5600	0.1979	0.7917	0.8551
REUTERS-K500-EX2	0.9533	43.17	0.6289	0.1319	0.7082	0.9154
scene	0.8050	2.64	0.3154	0.4232	0.5344	0.5221
sider_CDK_ECFP4	0.3873	22.01	0.3957	0.7128	0.5994	0.7443
sider_MordredDesc	0.3803	23.20	0.4797	0.6896	0.6633	0.7781
sider_RDKit_desc	0.3803	22.83	0.5162	0.6858	0.6428	0.7674
SLASHDOT-F	0.8575	6.74	0.1205	0.2999	0.5665	0.7561
Stackex_chemistry	0.9425	105.82	0.8549	0.0881	0.8957	0.9756
Stackex_chess	0.9643	147.55	0.8998	0.0665	0.5388	0.9867
Stackex_coffee	1.0000	82.61	0.9891	0.0372	0.2552	0.9682
Stackex_cooking	0.9884	258.13	0.9841	0.0248	0.9151	0.9899
Stackex_cs	0.9069	176.32	0.9305	0.0862	0.8849	0.9874
Stackex_philosophy	0.9447	144.59	0.8888	0.0757	0.7336	0.9802
tmc2007-500	0.5231	8.22	0.3766	0.4912	0.7453	0.8285
tox21_CDK_ECFP4	0.6815	6.21	0.5684	0.4360	0.6389	0.6596
tox21_RDKit_desc	0.7123	6.34	0.5605	0.4165	0.6125	0.6491
VirusGO	0.4286	1.48	0.1111	0.6929	0.5645	0.8040
VirusPseAAC	0.5714	1.33	0.0476	0.6468	0.5899	0.7721
Water-quality	0.5755	10.91	0.6547	0.5277	0.7008	0.7187
Yahoo_Arts	0.8051	11.38	0.6019	0.3210	0.7904	0.8439
Yahoo_Business	0.1319	3.71	0.1781	0.8505	0.7139	0.9504
Yahoo_Computers	0.4924	6.55	0.5086	0.5561	0.6903	0.8681
Yahoo_Education	0.8712	8.28	0.5681	0.3039	0.7687	0.8725
Yahoo_Entertainment	0.7903	5.85	0.3774	0.3851	0.8050	0.8266
Yahoo_Health	0.5288	6.88	0.3493	0.5583	0.7002	0.9046
Yahoo_Recreation	0.8363	9.16	0.5976	0.3026	0.8153	0.8167
Yahoo_Reference	0.4944	5.84	0.3039	0.5699	0.6682	0.9040
Yahoo_Science	0.8616	15.35	0.6427	0.2582	0.8549	0.8839
Yahoo_Social	0.5710	6.91	0.2715	0.5395	0.8153	0.9327
yeast	0.4793	7.23	0.5169	0.6323	0.6145	0.7596
Yelp	0.3699	1.94	0.4168	0.7268	0.5534	0.6968

Table 134: Detailed results for FRONEC-3.H

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9497	9.70	0.7206	0.1772	0.7583	0.7470
3s-bbc1000	0.7222	2.97	0.7778	0.4361	0.5320	0.5287
3s-guardian1000	0.6452	2.65	0.6452	0.5263	0.5207	0.5887
3s-reuters1000	0.7667	2.33	0.6833	0.4433	0.5774	0.5452
bibtex	0.9811	95.98	0.9568	0.0500	0.9682	0.9679
birds	0.9231	8.87	0.5452	0.2878	0.6589	0.7758
bookmarks	0.9883	117.61	0.8356	0.0401	0.9410	0.9380
CAL500	0.5098	151.57	0.7652	0.3090	0.7763	0.9010
corel16k001	0.9492	112.18	0.8852	0.0795	0.9731	0.9742
Corel5k	0.8840	169.61	0.9420	0.1209	0.6732	0.9904
delicious	0.9341	919.42	0.9197	0.0427	0.9773	0.9830
emotions	0.6667	3.02	0.5667	0.5484	0.5952	0.6144
enron	0.4737	23.15	0.2573	0.4375	0.6793	0.8869
EukaryoteGO	0.7426	6.23	0.2805	0.3985	0.7113	0.7859
EukaryotePseAAC	0.7387	5.03	0.2878	0.4352	0.8518	0.8898
Eurlex-dc	0.9772	127.55	0.7643	0.0686	0.7360	0.9708
Eurlex-sm	0.8806	69.29	0.8611	0.1590	0.7781	0.9465
foodtruck	0.2683	4.12	0.4122	0.7217	0.5253	0.7536
genbase	0.7910	7.15	0.2172	0.3786	0.3938	0.7242
GnegativeGO	0.8714	1.86	0.5250	0.4662	0.5377	0.7546
GnegativePseAAC	0.5571	1.66	0.5214	0.6270	0.5073	0.7806
GpositivePseAAC	0.6538	1.08	0.6346	0.6090	0.6058	0.6718
HumanGO	0.6849	3.60	0.2210	0.4887	0.7783	0.8302
HumanPseAAC	0.6720	4.30	0.3179	0.4747	0.7689	0.8234
Image	0.7100	2.10	0.3412	0.5149	0.5239	0.5333
IMDB-ECC-F	0.7192	10.78	0.5114	0.3760	0.7711	0.8220
IMDB-F	0.7629	12.22	0.5042	0.3289	0.8114	0.8435
LLOG-F	0.9426	29.19	0.7391	0.1407	0.5322	0.9253
mediamill	0.4295	56.04	0.4181	0.4470	0.9256	0.9558
medical	0.6939	16.83	0.4135	0.3582	0.4654	0.8929
Music	0.6167	3.58	0.4370	0.5339	0.5333	0.5503
OHSUMED-F	0.8557	12.37	0.7824	0.2462	0.8836	0.8887
PlantGO	0.7653	3.56	0.1854	0.4306	0.6483	0.7196
PlantPseAAC	0.7347	3.52	0.2509	0.4513	0.7480	0.7851
rcv1subset1	0.8600	48.10	0.5655	0.1966	0.7928	0.8553
REUTERS-K500-EX2	0.9567	44.31	0.6448	0.1265	0.7078	0.9159
scene	0.8091	2.66	0.3226	0.4201	0.5310	0.5156
sider_CDK_ECFP4	0.4577	23.08	0.5587	0.6635	0.6586	0.7631
sider_MordredDesc	0.4014	22.87	0.5063	0.6830	0.6823	0.7922
sider_RDKit_desc	0.4085	23.22	0.5441	0.6731	0.6752	0.7788
SLASHDOT-F	0.8575	6.74	0.1205	0.2999	0.5665	0.7561
Stackex_chemistry	0.9425	106.48	0.8644	0.0871	0.8968	0.9768
Stackex_chess	0.9643	148.32	0.9028	0.0660	0.5390	0.9870
Stackex_coffee	1.0000	82.61	0.9891	0.0372	0.2552	0.9682
Stackex_cooking	0.9884	258.62	0.9872	0.0236	0.9159	0.9907
Stackex_cs	0.9102	177.18	0.9374	0.0823	0.8853	0.9878
Stackex_philosophy	0.9422	144.67	0.8919	0.0755	0.7337	0.9804
tmc2007-500	0.5350	8.46	0.4110	0.4819	0.7544	0.8297
tox21_CDK_ECFP4	0.6884	6.33	0.5977	0.4288	0.6382	0.6629
tox21_RDKit_desc	0.7021	6.26	0.5776	0.4181	0.6189	0.6510
VirusGO	0.3810	1.24	0.0635	0.7270	0.5435	0.8127
VirusPseAAC	0.5714	1.33	0.0476	0.6468	0.5899	0.7721
Water-quality	0.6038	10.92	0.6864	0.5192	0.6988	0.7138
Yahoo_Arts	0.8037	11.44	0.6095	0.3170	0.7876	0.8421
Yahoo_Business	0.1319	3.71	0.1779	0.8505	0.7158	0.9505
Yahoo_Computers	0.4932	6.58	0.5096	0.5568	0.6891	0.8684
Yahoo_Education	0.8637	8.51	0.5953	0.3017	0.7676	0.8707
Yahoo_Entertainment	0.7989	5.81	0.3942	0.3813	0.8074	0.8297
Yahoo_Health	0.5288	6.89	0.3493	0.5583	0.7001	0.9045
Yahoo_Recreation	0.8285	9.10	0.5965	0.3067	0.8178	0.8196
Yahoo_Reference	0.4944	5.82	0.3033	0.5703	0.6689	0.9043
Yahoo_Science	0.8569	15.14	0.6379	0.2627	0.8584	0.8879
Yahoo_Social	0.5718	6.93	0.2726	0.5387	0.8154	0.9328
yeast	0.4876	7.21	0.5252	0.6302	0.6464	0.7660
Yelp	0.3709	1.95	0.4149	0.7260	0.5538	0.6969

Table 135: Detailed results for FRONEC-1.Ld

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9523	9.71	0.7276	0.1754	0.7623	0.7523
3s-bbc1000	0.6667	2.94	0.7731	0.4637	0.5786	0.5606
3s-guardian1000	0.7097	2.42	0.5726	0.5070	0.5859	0.6364
3s-reuters1000	0.8000	2.40	0.6667	0.4319	0.5978	0.5625
bibtex	0.9797	95.49	0.9640	0.0510	0.9759	0.9755
birds	0.8974	8.95	0.5708	0.3064	0.6762	0.7898
bookmarks	0.9878	117.77	0.8438	0.0399	0.9465	0.9444
CAL500	0.4902	152.04	0.7830	0.2994	0.7700	0.8958
corel16k001	0.9448	112.29	0.8856	0.0813	0.9742	0.9752
Corel5k	0.8920	169.61	0.9324	0.1230	0.6733	0.9909
delicious	0.9441	919.49	0.9229	0.0410	0.9770	0.9828
emotions	0.7000	3.18	0.5833	0.5291	0.6269	0.6380
enron	0.4912	25.75	0.3765	0.3904	0.6822	0.8875
EukaryoteGO	0.7619	6.21	0.2876	0.3884	0.7200	0.7895
EukaryotePseAAC	0.7387	5.88	0.3847	0.4139	0.8692	0.8961
Eurlex-dc	0.9757	127.90	0.7674	0.0684	0.7359	0.9716
Eurlex-sm	0.8884	69.57	0.8701	0.1560	0.7799	0.9482
foodtruck	0.3415	4.68	0.4615	0.6651	0.5488	0.7274
genbase	0.7612	6.88	0.1907	0.4017	0.4421	0.7563
GnegativeGO	0.8500	1.81	0.5036	0.4793	0.5700	0.7695
GnegativePseAAC	0.6143	2.04	0.5554	0.5707	0.4910	0.6981
GpositivePseAAC	0.6923	1.19	0.6346	0.5785	0.5317	0.6069
HumanGO	0.7267	4.22	0.3220	0.4522	0.8059	0.8419
HumanPseAAC	0.7203	4.71	0.4001	0.4311	0.7909	0.8316
Image	0.7250	2.08	0.3817	0.5119	0.5233	0.5300
IMDB-ECC-F	0.7457	11.95	0.6007	0.3410	0.8161	0.8464
IMDB-F	0.7713	12.49	0.5305	0.3214	0.8188	0.8480
LLOG-F	0.9262	29.25	0.7411	0.1466	0.5410	0.9360
mediamill	0.4513	57.20	0.4384	0.4331	0.9300	0.9578
medical	0.7041	17.17	0.4314	0.3510	0.4585	0.8897
Music	0.6167	3.63	0.5167	0.5262	0.5455	0.5637
OHSUMED-F	0.8593	12.40	0.7959	0.2420	0.8875	0.8925
PlantGO	0.7653	3.56	0.1854	0.4306	0.6483	0.7196
PlantPseAAC	0.7347	3.69	0.2832	0.4496	0.7653	0.7942
rcv1subset1	0.8883	59.26	0.8188	0.1540	0.8870	0.9469
REUTERS-K500-EX2	0.9550	44.29	0.6515	0.1262	0.7093	0.9187
scene	0.8091	2.66	0.3496	0.4221	0.5366	0.5216
sider_CDK_ECFP4	0.4225	23.20	0.5451	0.6765	0.6708	0.7753
sider_MordredDesc	0.3873	23.15	0.5175	0.6839	0.6789	0.7874
sider_RDKit_desc	0.3944	23.21	0.5447	0.6789	0.6909	0.7884
SLASHDOT-F	0.8602	6.78	0.1258	0.2971	0.5660	0.7553
Stackex_chemistry	0.9483	106.26	0.8723	0.0873	0.9003	0.9805
Stackex_chess	0.9702	148.30	0.9062	0.0641	0.5387	0.9870
Stackex_coffee	1.0000	82.61	0.9891	0.0372	0.2552	0.9682
Stackex_cooking	0.9874	257.51	0.9845	0.0252	0.9168	0.9916
Stackex_cs	0.9080	176.84	0.9378	0.0831	0.8861	0.9885
Stackex_philosophy	0.9422	145.34	0.8993	0.0736	0.7343	0.9811
tmc2007-500	0.5493	8.71	0.4437	0.4701	0.7661	0.8331
tox21_CDK_ECFP4	0.7226	6.65	0.6482	0.4030	0.6656	0.6831
tox21_RDKit_desc	0.6918	6.22	0.5725	0.4236	0.6423	0.6689
VirusGO	0.2857	1.00	0.0159	0.7889	0.6010	0.8483
VirusPseAAC	0.6190	1.38	0.0714	0.6087	0.5299	0.7970
Water-quality	0.5943	10.77	0.6467	0.5324	0.7236	0.7367
Yahoo_Arts	0.8144	11.90	0.6323	0.3067	0.8213	0.8716
Yahoo_Business	0.1319	3.72	0.1782	0.8503	0.7161	0.9505
Yahoo_Computers	0.4932	6.63	0.5098	0.5555	0.6889	0.8678
Yahoo_Education	0.8537	9.15	0.6375	0.3037	0.7857	0.8863
Yahoo_Entertainment	0.7950	6.02	0.5053	0.3689	0.8234	0.8460
Yahoo_Health	0.5266	6.93	0.3555	0.5576	0.7006	0.9048
Yahoo_Recreation	0.8348	9.05	0.6154	0.3055	0.8302	0.8362
Yahoo_Reference	0.4944	5.82	0.3033	0.5707	0.6691	0.9045
Yahoo_Science	0.8414	15.52	0.6743	0.2661	0.8788	0.9084
Yahoo_Social	0.5767	7.23	0.2945	0.5344	0.8237	0.9349
yeast	0.4959	7.50	0.5580	0.6204	0.6764	0.7740
Yelp	0.3709	1.94	0.4123	0.7273	0.5556	0.6934

Table 136: Detailed results for FRONEC-2.Ld

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9503	9.72	0.7234	0.1757	0.7594	0.7495
3s-bbc1000	0.7222	3.03	0.8056	0.4324	0.5259	0.5196
3s-guardian1000	0.6452	2.29	0.6210	0.5522	0.5327	0.6202
3s-reuters1000	0.7333	2.43	0.7000	0.4558	0.6171	0.5291
bibtex	0.9770	95.92	0.9488	0.0516	0.9648	0.9640
birds	0.8718	8.85	0.5306	0.2983	0.6276	0.7607
bookmarks	0.9896	117.56	0.8351	0.0394	0.9404	0.9375
CAL500	0.4902	152.16	0.7519	0.3135	0.7771	0.9012
corel16k001	0.9332	109.84	0.8555	0.0910	0.9694	0.9704
Corel5k	0.8940	169.63	0.9378	0.1195	0.6722	0.9896
delicious	0.9316	919.83	0.9183	0.0433	0.9770	0.9827
emotions	0.6167	3.10	0.4986	0.5577	0.5267	0.5749
enron	0.4737	22.56	0.2339	0.4458	0.6712	0.8879
EukaryoteGO	0.7477	6.13	0.2699	0.3977	0.7184	0.7875
EukaryotePseAAC	0.7284	4.94	0.2830	0.4412	0.8515	0.8901
Eurlex-dc	0.9752	127.69	0.7622	0.0698	0.7361	0.9703
Eurlex-sm	0.8811	68.60	0.8516	0.1572	0.7737	0.9419
foodtruck	0.2439	3.95	0.3854	0.7313	0.5266	0.7580
genbase	0.7910	7.16	0.2172	0.3783	0.3890	0.7218
GnegativeGO	0.8500	1.80	0.5036	0.4817	0.5627	0.7676
GnegativePseAAC	0.5500	1.64	0.5179	0.6301	0.5196	0.7858
GpositivePseAAC	0.6731	1.10	0.6538	0.5994	0.5981	0.6674
HumanGO	0.6752	3.58	0.2137	0.4967	0.7781	0.8297
HumanPseAAC	0.6849	4.24	0.3054	0.4733	0.7847	0.8256
Image	0.7300	2.12	0.3438	0.5056	0.5246	0.5313
IMDB-ECC-F	0.7157	10.72	0.5039	0.3792	0.7688	0.8212
IMDB-F	0.7608	12.11	0.4921	0.3321	0.8082	0.8416
LLOG-F	0.9426	29.16	0.7391	0.1407	0.5325	0.9254
mediamill	0.3796	53.63	0.3802	0.4787	0.9154	0.9509
medical	0.6939	16.50	0.4059	0.3600	0.4657	0.8930
Music	0.6167	3.32	0.3898	0.5556	0.5334	0.5596
OHSUMED-F	0.8564	12.06	0.7417	0.2525	0.8564	0.8638
PlantGO	0.7653	3.56	0.1854	0.4306	0.6483	0.7196
PlantPseAAC	0.7245	3.37	0.2100	0.4687	0.7576	0.7959
rcv1subset1	0.8583	47.94	0.5600	0.1979	0.7917	0.8551
REUTERS-K500-EX2	0.9550	43.63	0.6339	0.1298	0.7085	0.9152
scene	0.8050	2.66	0.3195	0.4218	0.5327	0.5200
sider_CDK_ECFP4	0.3732	21.87	0.3893	0.7179	0.6009	0.7521
sider_MordredDesc	0.3592	23.24	0.4984	0.6890	0.6619	0.7822
sider_RDKit_desc	0.4085	22.77	0.5198	0.6832	0.6294	0.7603
SLASHDOT-F	0.8575	6.74	0.1205	0.2999	0.5665	0.7561
Stackex_chemistry	0.9468	106.52	0.8615	0.0841	0.8955	0.9756
Stackex_chess	0.9643	147.07	0.8924	0.0707	0.5389	0.9868
Stackex_coffee	1.0000	82.61	0.9891	0.0372	0.2552	0.9682
Stackex_cooking	0.9884	258.29	0.9827	0.0260	0.9157	0.9905
Stackex_cs	0.9037	175.73	0.9278	0.0873	0.8846	0.9870
Stackex_philosophy	0.9472	144.61	0.8900	0.0738	0.7334	0.9801
tmc2007-500	0.5227	8.14	0.3678	0.4947	0.7443	0.8287
tox21_CDK_ECFP4	0.6815	6.19	0.5619	0.4393	0.6483	0.6659
tox21_RDKit_desc	0.7021	6.20	0.5529	0.4263	0.6244	0.6577
VirusGO	0.4286	1.38	0.0952	0.7071	0.5942	0.8242
VirusPseAAC	0.5714	1.33	0.0476	0.6468	0.5899	0.7721
Water-quality	0.6038	11.00	0.6735	0.5147	0.6943	0.7111
Yahoo_Arts	0.8051	11.33	0.6074	0.3212	0.7917	0.8461
Yahoo_Business	0.1319	3.71	0.1781	0.8505	0.7139	0.9504
Yahoo_Computers	0.4924	6.58	0.5088	0.5554	0.6902	0.8678
Yahoo_Education	0.8712	8.41	0.5743	0.3012	0.7681	0.8718
Yahoo_Entertainment	0.7918	5.85	0.3894	0.3840	0.8007	0.8295
Yahoo_Health	0.5288	6.87	0.3487	0.5581	0.7002	0.9045
Yahoo_Recreation	0.8355	9.16	0.5962	0.3034	0.8153	0.8173
Yahoo_Reference	0.4944	5.84	0.3039	0.5699	0.6682	0.9040
Yahoo_Science	0.8554	15.12	0.6474	0.2630	0.8646	0.8924
Yahoo_Social	0.5701	6.88	0.2698	0.5401	0.8149	0.9327
yeast	0.5000	7.19	0.5153	0.6276	0.6134	0.7586
Yelp	0.3699	1.95	0.4178	0.7261	0.5514	0.6977

Table 137: Detailed results for FRONEC-3.Ld

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9513	9.71	0.7242	0.1752	0.7604	0.7501
3s-bbc1000	0.7222	2.97	0.8056	0.4361	0.5320	0.5270
3s-guardian1000	0.6452	2.39	0.6532	0.5425	0.5247	0.6113
3s-reuters1000	0.7667	2.53	0.7000	0.4319	0.5916	0.5234
bibtex	0.9784	96.09	0.9566	0.0494	0.9672	0.9667
birds	0.9231	9.05	0.5380	0.2818	0.6338	0.7658
bookmarks	0.9885	117.50	0.8361	0.0401	0.9417	0.9389
CAL500	0.4706	152.12	0.7614	0.3151	0.7772	0.9014
corel16k001	0.9346	111.05	0.8709	0.0874	0.9720	0.9729
Corel5k	0.8840	169.62	0.9420	0.1201	0.6729	0.9903
delicious	0.9329	919.53	0.9190	0.0430	0.9770	0.9828
emotions	0.6167	3.10	0.5403	0.5643	0.5745	0.6053
enron	0.4620	22.85	0.2419	0.4485	0.6796	0.8897
EukaryoteGO	0.7542	6.20	0.2776	0.3923	0.7130	0.7865
EukaryotePseAAC	0.7362	5.09	0.2971	0.4333	0.8563	0.8915
Eurlex-dc	0.9772	127.69	0.7645	0.0682	0.7358	0.9706
Eurlex-sm	0.8837	68.69	0.8565	0.1580	0.7759	0.9443
foodtruck	0.2683	4.29	0.4098	0.7162	0.5409	0.7455
genbase	0.7910	7.07	0.2206	0.3789	0.3916	0.7215
GnegativeGO	0.8429	1.79	0.4964	0.4853	0.5785	0.7728
GnegativePseAAC	0.5786	1.72	0.5464	0.6113	0.4941	0.7542
GpositivePseAAC	0.6731	1.10	0.6538	0.5994	0.5981	0.6674
HumanGO	0.6881	3.94	0.2751	0.4808	0.7941	0.8346
HumanPseAAC	0.6817	4.31	0.3187	0.4685	0.7730	0.8249
Image	0.7100	2.10	0.3463	0.5160	0.5270	0.5331
IMDB-ECC-F	0.7184	10.82	0.5139	0.3756	0.7721	0.8225
IMDB-F	0.7615	12.19	0.5011	0.3301	0.8107	0.8431
LLOG-F	0.9426	29.16	0.7391	0.1407	0.5328	0.9257
mediamill	0.4178	55.31	0.4081	0.4555	0.9217	0.9539
medical	0.6939	16.89	0.4161	0.3561	0.4627	0.8909
Music	0.6000	3.45	0.4176	0.5513	0.5361	0.5568
OHSUMED-F	0.8528	12.21	0.7602	0.2514	0.8671	0.8740
PlantGO	0.7653	3.56	0.1854	0.4306	0.6483	0.7196
PlantPseAAC	0.7347	3.48	0.2304	0.4569	0.7578	0.7924
rcv1subset1	0.8817	49.73	0.6338	0.1797	0.8058	0.8678
REUTERS-K500-EX2	0.9550	43.75	0.6370	0.1289	0.7080	0.9158
scene	0.8008	2.67	0.3278	0.4216	0.5327	0.5145
sider_CDK_ECFP4	0.4085	23.01	0.4971	0.6888	0.6435	0.7642
sider_MordredDesc	0.4577	22.85	0.5044	0.6796	0.6534	0.7693
sider_RDKit_desc	0.3873	23.33	0.5372	0.6797	0.6917	0.7880
SLASHDOT-F	0.8575	6.74	0.1205	0.2999	0.5665	0.7561
Stackex_chemistry	0.9454	106.36	0.8650	0.0846	0.8967	0.9768
Stackex_chess	0.9762	149.60	0.9162	0.0597	0.5384	0.9866
Stackex_coffee	1.0000	82.61	0.9891	0.0372	0.2552	0.9682
Stackex_cooking	0.9884	257.91	0.9832	0.0257	0.9159	0.9907
Stackex_cs	0.9058	176.30	0.9336	0.0843	0.8851	0.9875
Stackex_philosophy	0.9447	144.24	0.8904	0.0741	0.7337	0.9805
tmc2007-500	0.5301	8.38	0.3983	0.4860	0.7500	0.8290
tox21_CDK_ECFP4	0.6815	6.33	0.5885	0.4356	0.6480	0.6718
tox21_RDKit_desc	0.6918	6.25	0.5635	0.4304	0.6299	0.6579
VirusGO	0.3333	1.29	0.0635	0.7468	0.5884	0.8246
VirusPseAAC	0.6190	1.38	0.0476	0.6230	0.5935	0.7742
Water-quality	0.6226	10.94	0.6727	0.5163	0.6961	0.7133
Yahoo_Arts	0.8024	11.46	0.6161	0.3192	0.8009	0.8536
Yahoo_Business	0.1319	3.71	0.1779	0.8505	0.7160	0.9505
Yahoo_Computers	0.4924	6.61	0.5106	0.5559	0.6882	0.8675
Yahoo_Education	0.8728	8.55	0.5766	0.2994	0.7684	0.8721
Yahoo_Entertainment	0.8052	5.91	0.4209	0.3725	0.8024	0.8306
Yahoo_Health	0.5299	6.90	0.3531	0.5570	0.7001	0.9043
Yahoo_Recreation	0.8301	9.02	0.5904	0.3070	0.8187	0.8210
Yahoo_Reference	0.4944	5.82	0.3033	0.5703	0.6688	0.9043
Yahoo_Science	0.8523	14.93	0.6403	0.2679	0.8674	0.8956
Yahoo_Social	0.5693	6.91	0.2706	0.5409	0.8161	0.9328
yeast	0.4752	7.26	0.5275	0.6306	0.6346	0.7612
Yelp	0.3729	1.95	0.4189	0.7251	0.5516	0.6963

Table 138: Detailed results for MLRS

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5715	3.76	0.2058	0.5664	0.8955	0.8859
3s-bbc1000	0.6944	2.19	0.3542	0.5241	0.6440	0.6389
3s-guardian1000	0.6129	2.06	0.4274	0.5661	0.6299	0.6595
3s-reuters1000	0.8667	2.50	0.8250	0.3889	0.6109	0.5122
bibtex	0.6838	66.86	0.4925	0.2595	0.9346	0.9281
birds	0.5897	5.51	0.2104	0.5268	0.7374	0.8407
bookmarks	0.6564	74.69	0.4600	0.3648	0.9623	0.9655
CAL500	0.2941	145.57	0.4204	0.4783	0.5860	0.8255
corel16k001	0.7727	88.30	0.5581	0.2173	0.9201	0.9209
Corel5k	0.7740	156.81	0.6422	0.2039	0.6392	0.9529
delicious	0.4214	772.19	0.3546	0.3019	0.9266	0.9489
emotions	0.2833	1.80	0.1681	0.7901	0.8332	0.8510
enron	0.2632	19.89	0.2528	0.6102	0.7491	0.9344
EukaryoteGO	0.2136	1.35	0.0667	0.8511	0.9869	0.9894
EukaryotePseAAC	0.6589	4.48	0.2511	0.5110	0.8823	0.9145
Eurlex-dc	0.4356	39.16	0.2040	0.6344	0.7553	0.9959
Eurlex-sm	0.3225	21.40	0.2200	0.6741	0.8195	0.9907
foodtruck	0.2439	3.02	0.3337	0.7660	0.5897	0.7939
genbase	0.0149	0.24	0.0000	0.9900	0.6667	0.9997
GnegativeGO	0.0357	0.13	0.0143	0.9768	0.8711	0.9966
GnegativePseAAC	0.3786	0.95	0.2554	0.7607	0.8105	0.9374
GpositivePseAAC	0.2692	0.48	0.1154	0.8349	0.8679	0.8944
HumanGO	0.2701	1.22	0.0739	0.8123	0.9678	0.9674
HumanPseAAC	0.6559	3.55	0.2694	0.5096	0.8077	0.8398
Image	0.3150	0.87	0.1179	0.8045	0.8663	0.8617
IMDB-ECC-F	0.6616	9.85	0.3092	0.4408	0.7742	0.8341
IMDB-F	0.6577	10.04	0.3271	0.4397	0.7764	0.8420
LLOG-F	0.8197	23.37	0.4978	0.2686	0.5271	0.9174
mediamill	0.1634	25.11	0.0941	0.7145	0.9437	0.9704
medical	0.3163	4.45	0.1361	0.7700	0.5394	0.9833
Music	0.2167	1.87	0.1505	0.8186	0.8704	0.8777
OHSUMED-F	0.6827	8.63	0.3471	0.4079	0.7769	0.8040
PlantGO	0.4592	1.15	0.0867	0.7207	0.9668	0.9500
PlantPseAAC	0.7449	3.13	0.4396	0.4682	0.7914	0.8075
rcv1subset1	0.6817	35.41	0.3534	0.3602	0.8965	0.9336
REUTERS-K500-EX2	0.4867	14.27	0.1991	0.5866	0.7599	0.9773
scene	0.2573	0.56	0.0581	0.8459	0.9426	0.9414
sider_CDK_ECFP4	0.1127	19.30	0.1035	0.8506	0.5015	0.7895
sider_MordredDesc	0.1761	19.20	0.1151	0.8336	0.4957	0.7992
sider_RDKit_desc	0.1690	19.40	0.1139	0.8316	0.5141	0.8014
SLASHDOT-F	0.8259	8.78	0.4881	0.3329	0.7043	0.8813
Stackex_chemistry	0.7773	82.58	0.5903	0.2332	0.8560	0.9431
Stackex_chess	0.6964	107.63	0.5383	0.2515	0.5135	0.9589
Stackex_coffee	0.8696	73.87	0.5761	0.1952	0.2309	0.9161
Stackex_cooking	0.8435	225.10	0.7166	0.1382	0.8889	0.9644
Stackex_cs	0.6926	136.43	0.5501	0.2574	0.8551	0.9607
Stackex_philosophy	0.7638	113.54	0.5356	0.2579	0.7078	0.9580
tmc2007-500	0.3605	4.42	0.1566	0.7000	0.9145	0.9367
tox21_CDK_ECFP4	0.4966	4.25	0.1297	0.6053	0.7350	0.7759
tox21_RDKit_desc	0.5103	4.25	0.1421	0.6058	0.7316	0.7789
VirusGO	0.1429	0.76	0.1111	0.8804	0.7554	0.9168
VirusPseAAC	0.4762	0.86	0.0952	0.7373	0.7307	0.8835
Water-quality	0.2642	9.24	0.2450	0.6800	0.6261	0.6881
Yahoo_Arts	0.7036	8.45	0.5309	0.4270	0.7724	0.8455
Yahoo_Business	0.1248	3.19	0.1675	0.8613	0.7822	0.9704
Yahoo_Computers	0.4361	5.62	0.4491	0.6177	0.8092	0.9342
Yahoo_Education	0.6883	6.88	0.3934	0.4599	0.7913	0.9062
Yahoo_Entertainment	0.6347	4.32	0.1990	0.5149	0.8230	0.8659
Yahoo_Health	0.4777	5.69	0.3117	0.6121	0.7243	0.9283
Yahoo_Recreation	0.7264	6.41	0.4674	0.4064	0.7962	0.8113
Yahoo_Reference	0.4795	5.14	0.2717	0.6022	0.7430	0.9509
Yahoo_Science	0.7512	11.75	0.3700	0.3622	0.8391	0.8779
Yahoo_Social	0.4893	5.94	0.2489	0.6124	0.8443	0.9478
yeast	0.2397	6.23	0.2316	0.7564	0.7200	0.8399
Yelp	0.2941	1.59	0.3597	0.8033	0.7165	0.7933

Table 139: Detailed results for MLRS-LC

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5617	3.84	0.1321	0.5670	0.8302	0.8262
3s-bbc1000	0.6944	2.22	0.3125	0.5250	0.6059	0.6220
3s-guardian1000	0.6452	2.03	0.4919	0.5618	0.6192	0.6572
3s-reuters1000	0.8333	2.83	0.7917	0.3844	0.5637	0.4677
bibtex	0.6811	56.85	0.3258	0.2684	0.8094	0.8032
birds	0.5897	5.36	0.1945	0.5247	0.7069	0.8214
bookmarks	0.6683	53.16	0.1607	0.3628	0.7932	0.8325
CAL500	0.1765	138.98	0.4205	0.4669	0.5296	0.8010
corel16k001	0.8126	66.56	0.1738	0.2041	0.6479	0.7585
Corel5k	0.7780	157.69	0.5070	0.1927	0.5191	0.8349
delicious	0.4164	575.67	0.1427	0.3325	0.8004	0.8945
emotions	0.3000	1.80	0.1792	0.7887	0.8121	0.8324
enron	0.2749	16.42	0.1353	0.6051	0.5824	0.8662
EukaryoteGO	0.2175	1.00	0.0175	0.8550	0.9245	0.9732
EukaryotePseAAC	0.6744	3.91	0.0662	0.5062	0.6967	0.8444
Eurlex-dc	0.4340	32.39	0.1531	0.6358	0.7357	0.9804
Eurlex-sm	0.3178	16.63	0.1510	0.6771	0.7685	0.9664
foodtruck	0.3415	3.24	0.3192	0.7168	0.5875	0.7886
genbase	0.0149	0.24	0.0000	0.9900	0.6667	0.9993
GnegativeGO	0.0429	0.16	0.0107	0.9719	0.8575	0.9884
GnegativePseAAC	0.3429	0.99	0.2268	0.7771	0.7859	0.9153
GpositivePseAAC	0.2885	0.50	0.1346	0.8253	0.8614	0.8913
HumanGO	0.2508	1.07	0.0575	0.8268	0.9007	0.9475
HumanPseAAC	0.6624	3.19	0.1956	0.5112	0.6294	0.7848
Image	0.3600	0.91	0.1204	0.7818	0.8505	0.8447
IMDB-ECC-F	0.6854	9.04	0.2232	0.4275	0.5342	0.7630
IMDB-F	0.6666	9.27	0.2308	0.4267	0.5418	0.7608
LLOG-F	0.8197	19.18	0.2972	0.2772	0.4319	0.8041
mediamill	0.1292	16.91	0.0287	0.7369	0.8201	0.9472
medical	0.2755	2.82	0.1046	0.7999	0.5215	0.9705
Music	0.2000	1.78	0.1495	0.8384	0.8759	0.8850
OHSUMED-F	0.7136	8.31	0.2347	0.3885	0.6049	0.7235
PlantGO	0.4592	1.18	0.0731	0.7267	0.9525	0.9344
PlantPseAAC	0.7449	3.03	0.4966	0.4610	0.7193	0.7712
rcv1subset1	0.7350	30.81	0.2293	0.3395	0.7299	0.8480
REUTERS-K500-EX2	0.4883	10.57	0.0889	0.5915	0.6950	0.9427
scene	0.2656	0.55	0.0539	0.8431	0.9346	0.9347
sider_CDK_ECFP4	0.1056	19.01	0.0969	0.8495	0.5225	0.7949
sider_MordredDesc	0.1268	19.21	0.1007	0.8434	0.5283	0.7947
sider_RDKit_desc	0.0845	19.44	0.0969	0.8498	0.5527	0.8049
SLASHDOT-F	0.8338	7.07	0.2193	0.3456	0.5463	0.7387
Stackex_chemistry	0.7816	58.11	0.3753	0.2312	0.5733	0.7838
Stackex_chess	0.6964	77.34	0.3126	0.2602	0.4127	0.8337
Stackex_coffee	0.8696	70.74	0.4399	0.2085	0.2194	0.8725
Stackex_cooking	0.8551	180.38	0.3420	0.1317	0.6090	0.7485
Stackex_cs	0.7186	98.54	0.3018	0.2544	0.6393	0.8232
Stackex_philosophy	0.7588	81.86	0.2513	0.2538	0.4950	0.8043
tmc2007-500	0.3357	4.01	0.1274	0.7121	0.8492	0.9107
tox21_CDK_ECFP4	0.5445	4.30	0.1187	0.5823	0.6848	0.7528
tox21_RDKit_desc	0.4658	4.32	0.1211	0.6082	0.6941	0.7618
VirusGO	0.1429	0.81	0.1111	0.8788	0.7554	0.9125
VirusPseAAC	0.5238	1.00	0.0952	0.7103	0.7011	0.8501
Water-quality	0.2170	8.88	0.2480	0.7101	0.6818	0.7235
Yahoo_Arts	0.7210	6.88	0.4494	0.4181	0.5802	0.7850
Yahoo_Business	0.1248	2.59	0.1429	0.8659	0.5693	0.9325
Yahoo_Computers	0.4426	5.09	0.3885	0.6112	0.6172	0.8643
Yahoo_Education	0.7099	4.94	0.4270	0.4534	0.5335	0.8716
Yahoo_Entertainment	0.6496	4.33	0.1354	0.4989	0.5997	0.8208
Yahoo_Health	0.4951	4.56	0.2709	0.6099	0.5215	0.8964
Yahoo_Recreation	0.7295	5.82	0.4117	0.4097	0.6362	0.7662
Yahoo_Reference	0.4757	5.50	0.2156	0.5980	0.5598	0.8606
Yahoo_Science	0.7729	9.76	0.2394	0.3557	0.5882	0.7837
Yahoo_Social	0.4909	5.11	0.2268	0.6153	0.5919	0.8782
yeast	0.2521	6.33	0.2109	0.7408	0.6484	0.8257
Yelp	0.2413	1.56	0.2681	0.8207	0.7200	0.7964

Table 140: Detailed results for ML-DT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.8130	7.29	0.5727	0.3242	0.8529	0.8545
3s-bbc1000	0.8889	3.06	0.7199	0.3646	0.5574	0.5701
3s-guardian1000	0.7419	2.48	0.4839	0.4930	0.5850	0.6076
3s-reuters1000	0.8000	2.57	0.6333	0.4261	0.6212	0.6035
bibtex	0.7797	72.00	0.6587	0.1989	0.9180	0.9185
birds	0.5641	7.08	0.4525	0.4859	0.7976	0.8947
bookmarks	0.7172	87.88	0.5874	0.3013	0.9367	0.9431
CAL500	0.3333	145.59	0.4650	0.4449	0.6226	0.8160
corel16k001	0.8068	90.58	0.6151	0.1852	0.9305	0.9384
Corel5k	0.7740	154.47	0.7140	0.1941	0.6454	0.9678
delicious	0.4506	785.63	0.4273	0.2819	0.9219	0.9440
emotions	0.3667	2.12	0.2361	0.7343	0.8386	0.8439
enron	0.3216	22.32	0.2844	0.5761	0.7456	0.9355
EukaryoteGO	0.2046	1.50	0.0846	0.8554	0.9820	0.9896
EukaryotePseAAC	0.7143	6.97	0.5319	0.4114	0.9179	0.9329
Eurlex-dc	0.4682	65.61	0.3680	0.5618	0.7528	0.9946
Eurlex-sm	0.3256	29.22	0.2912	0.6413	0.8141	0.9881
foodtruck	0.3659	3.59	0.3584	0.6711	0.6218	0.7841
genbase	0.0000	0.55	0.0075	0.9907	0.6588	0.9988
GnegativeGO	0.0214	0.16	0.0250	0.9812	0.8661	0.9930
GnegativePseAAC	0.3357	1.29	0.2607	0.7548	0.8025	0.9416
GpositivePseAAC	0.5000	1.00	0.3462	0.6827	0.8250	0.8513
HumanGO	0.2412	1.48	0.1395	0.8211	0.9478	0.9688
HumanPseAAC	0.6881	4.86	0.5024	0.4467	0.8590	0.8805
Image	0.3650	1.16	0.2300	0.7471	0.8354	0.8380
IMDB-ECC-F	0.7216	11.19	0.4928	0.3709	0.8333	0.8649
IMDB-F	0.7141	11.39	0.4887	0.3739	0.8303	0.8637
LLOG-F	0.9180	31.52	0.7204	0.1690	0.5406	0.9350
mediamill	0.2005	36.34	0.2002	0.6508	0.9280	0.9610
medical	0.3776	9.92	0.2806	0.6528	0.5274	0.9721
Music	0.2500	2.18	0.2153	0.7874	0.8753	0.8669
OHSUMED-F	0.7653	10.47	0.5684	0.3316	0.7896	0.8177
PlantGO	0.2245	0.71	0.0714	0.8580	0.9841	0.9803
PlantPseAAC	0.8163	4.40	0.6327	0.3681	0.8339	0.8454
rcv1subset1	0.6567	43.87	0.5146	0.3251	0.8656	0.9350
REUTERS-K500-EX2	0.7650	35.62	0.5180	0.3161	0.7418	0.9579
scene	0.4274	1.38	0.2977	0.7008	0.8807	0.8849
sider_CDK_ECFP4	0.1408	19.37	0.1131	0.8338	0.9517	0.8192
sider_MordredDesc	0.1056	20.13	0.1485	0.8222	0.8241	0.7873
sider_RDKit_desc	0.0986	19.58	0.1174	0.8370	0.9312	0.8196
SLASHDOT-F	0.5963	7.06	0.3986	0.4909	0.6720	0.9087
Stackex_chemistry	0.7931	86.12	0.6538	0.2047	0.8782	0.9606
Stackex_chess	0.7381	123.23	0.6586	0.1958	0.5170	0.9632
Stackex_coffee	0.8696	75.09	0.7198	0.1753	0.2358	0.9358
Stackex_cooking	0.8473	242.73	0.8240	0.1172	0.8994	0.9745
Stackex_cs	0.7110	149.42	0.6622	0.2154	0.8634	0.9684
Stackex_philosophy	0.7714	126.47	0.6717	0.1975	0.7162	0.9651
tmc2007-500	0.4434	7.06	0.3005	0.5885	0.8712	0.9084
tox21_CDK_ECFP4	0.5616	5.37	0.3443	0.5326	0.7512	0.7811
tox21_RDKit_desc	0.6027	5.46	0.3821	0.5085	0.7786	0.8010
VirusGO	0.1429	0.67	0.1349	0.8944	0.7995	0.9778
VirusPseAAC	0.5238	1.76	0.3095	0.6310	0.6140	0.8248
Water-quality	0.3302	9.61	0.3774	0.6471	0.6978	0.7199
Yahoo_Arts	0.7450	10.61	0.5361	0.3706	0.7946	0.8541
Yahoo_Business	0.1390	3.34	0.1677	0.8526	0.7771	0.9655
Yahoo_Computers	0.4916	6.72	0.4546	0.5616	0.8278	0.9422
Yahoo_Education	0.7140	8.50	0.4887	0.4261	0.8141	0.9218
Yahoo_Entertainment	0.6214	4.83	0.4107	0.5071	0.8484	0.8809
Yahoo_Health	0.5418	7.36	0.4406	0.5422	0.7572	0.9387
Yahoo_Recreation	0.7724	7.77	0.5890	0.3744	0.8346	0.8465
Yahoo_Reference	0.5504	5.74	0.3902	0.5427	0.7375	0.9458
Yahoo_Science	0.7823	13.88	0.5690	0.3239	0.8665	0.9045
Yahoo_Social	0.5198	7.71	0.3690	0.5640	0.8621	0.9573
yeast	0.3843	6.63	0.3374	0.6874	0.7239	0.8152
Yelp	0.1456	1.34	0.1742	0.8829	0.8218	0.8623

Table 141: Detailed results for PCT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7184	5.72	0.4869	0.4220	0.9005	0.9019
3s-bbc1000	0.6667	2.64	0.6528	0.4951	0.6331	0.6334
3s-guardian1000	0.8065	2.58	0.5565	0.4723	0.5767	0.6035
3s-reuters1000	0.7000	2.33	0.5833	0.4822	0.6273	0.6191
bibtex	0.7757	83.69	0.7420	0.1961	0.9628	0.9661
birds	0.6667	8.28	0.5140	0.3989	0.6998	0.8152
bookmarks	0.8638	72.03	0.1987	0.1972	0.9096	0.7471
CAL500	0.2745	150.94	0.5167	0.4336	0.6536	0.8335
corel16k001	0.8272	94.39	0.6520	0.1712	0.9410	0.9467
Corel5k	0.7300	153.82	0.7018	0.2138	0.6482	0.9705
delicious	0.5221	810.64	0.4779	0.2537	0.9310	0.9490
emotions	0.4333	2.10	0.3611	0.7263	0.7660	0.7789
enron	0.2515	20.73	0.2733	0.5899	0.7547	0.9384
EukaryoteGO	0.2964	2.23	0.1550	0.7753	0.9735	0.9826
EukaryotePseAAC	0.7207	5.63	0.3522	0.4397	0.8687	0.9015
Eurlex-dc	0.5996	85.61	0.5161	0.4326	0.7565	0.9970
Eurlex-sm	0.5209	43.25	0.4545	0.4721	0.8152	0.9868
foodtruck	0.2927	3.17	0.3294	0.7571	0.6897	0.8356
genbase	0.0000	0.69	0.0149	0.9868	0.6655	0.9998
GnegativeGO	0.1143	0.31	0.0679	0.9277	0.8644	0.9922
GnegativePseAAC	0.4214	1.29	0.3179	0.7060	0.7531	0.9109
GpositivePseAAC	0.4038	0.75	0.2115	0.7484	0.8161	0.8397
HumanGO	0.3666	1.81	0.1763	0.7441	0.9483	0.9634
HumanPseAAC	0.7460	4.14	0.3546	0.4357	0.8093	0.8456
Image	0.5100	1.34	0.2338	0.6697	0.7718	0.7666
IMDB-ECC-F	0.7448	11.61	0.5269	0.3474	0.8202	0.8532
IMDB-F	0.7516	12.15	0.5503	0.3396	0.8293	0.8593
LLOG-F	0.8115	29.55	0.7336	0.2296	0.5525	0.9484
mediamill	0.2793	41.67	0.2551	0.5915	0.9401	0.9650
medical	0.3980	11.15	0.3104	0.6247	0.5281	0.9762
Music	0.3333	2.42	0.3106	0.7312	0.7707	0.7882
OHSUMED-F	0.7078	10.30	0.5685	0.3636	0.8235	0.8456
PlantGO	0.3958	1.74	0.2075	0.7135	0.9321	0.9452
PlantPseAAC	0.7347	3.50	0.3571	0.4542	0.7804	0.8100
rcv1subset1	0.7033	33.15	0.2383	0.2853	0.9236	0.8246
REUTERS-K500-EX2	0.7045	37.03	0.5644	0.3605	0.7657	0.9801
scene	0.5768	1.56	0.3071	0.6142	0.8055	0.8144
sider_CDK_ECFP4	0.1831	20.55	0.2178	0.7943	0.6534	0.8031
sider_MordredDesc	0.1690	19.89	0.1911	0.8022	0.6309	0.7975
sider_RDKit_desc	0.1690	20.28	0.2185	0.7907	0.6511	0.7949
SLASHDOT-F	0.6720	7.53	0.4288	0.4386	0.6666	0.9032
Stackex_chemistry	0.8300	95.21	0.7405	0.1691	0.8881	0.9693
Stackex_chess	0.7857	125.99	0.7036	0.1754	0.5297	0.9767
Stackex_coffee	0.8696	79.09	0.7101	0.1270	0.2401	0.9447
Stackex_cooking	0.7971	229.54	0.7729	0.1547	0.9082	0.9832
Stackex_cs	0.7270	120.36	0.4987	0.2231	0.8557	0.9045
Stackex_philosophy	0.7789	97.58	0.4563	0.2230	0.6795	0.9004
tmc2007-500	0.4136	6.18	0.2443	0.6088	0.8185	0.8799
tox21_CDK_ECFP4	0.6096	4.90	0.2315	0.5213	0.7408	0.7470
tox21_RDKit_desc	0.6096	5.09	0.2295	0.5147	0.7148	0.7450
VirusGO	0.2619	0.98	0.1825	0.8171	0.7570	0.9162
VirusPseAAC	0.6667	1.52	0.1905	0.5889	0.5307	0.7991
Water-quality	0.3019	9.49	0.3763	0.6615	0.6744	0.7100
Yahoo_Arts	0.7356	6.40	0.3991	0.4408	0.9448	0.8148
Yahoo_Business	0.1310	2.52	0.1462	0.8681	0.8512	0.9388
Yahoo_Computers	0.4916	4.70	0.4342	0.5966	0.8239	0.8760
Yahoo_Education	0.6750	4.57	0.4062	0.4789	0.9042	0.8937
Yahoo_Entertainment	0.6551	3.81	0.0951	0.5188	0.9919	0.8617
Yahoo_Health	0.4734	3.92	0.3243	0.6298	0.8266	0.9194
Yahoo_Recreation	0.7529	5.72	0.6002	0.4083	0.9714	0.7792
Yahoo_Reference	0.4944	3.92	0.1583	0.5856	0.7423	0.9008
Yahoo_Science	0.7434	8.19	0.1508	0.4047	0.9630	0.8296
Yahoo_Social	0.4554	4.07	0.1831	0.6519	0.8990	0.9098
yeast	0.3843	7.09	0.3623	0.6765	0.6702	0.7996
Yelp	0.2293	1.48	0.2055	0.8388	0.7935	0.8335

Table 142: Detailed results for OPCT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.8611	7.64	0.5592	0.2785	0.6394	0.6324
3s-bbc1000	0.7778	2.53	0.7639	0.4546	0.5211	0.5332
3s-guardian1000	0.5806	1.90	0.5323	0.5970	0.5282	0.6609
3s-reuters1000	0.8667	2.20	0.8000	0.4667	0.5596	0.5232
bibtex	0.8230	38.79	0.1571	0.8910	0.3419	0.3632
birds	0.5128	6.46	0.2144	0.4929	0.6642	0.7625
bookmarks	0.8164	62.69	0.1648	0.2324	0.8024	0.7760
CAL500	0.1569	144.00	0.4279	0.4809	0.4931	0.7971
corel16k001	0.7444	52.46	0.0729	0.3221	0.6077	0.7848
Corel5k	0.7420	116.51	0.5384	0.2318	0.5790	0.8592
delicious	0.5681	547.22	0.0871	0.0770	0.6393	0.7341
emotions	0.4333	1.95	0.2375	0.7248	0.7978	0.8009
enron	0.3801	15.68	0.0939	0.5560	0.5325	0.8710
EukaryoteGO	0.5714	2.56	0.0175	0.5959	0.9009	0.9147
EukaryotePseAAC	0.6680	3.25	0.0273	0.5195	0.6161	0.8681
Eurlex-dc	0.8458	59.01	0.1912	0.3774	0.3169	0.6471
Eurlex-sm	0.7426	31.63	0.5100	0.6057	0.3543	0.6113
foodtruck	0.2683	3.00	0.3355	0.7778	0.6238	0.8004
genbase	0.6418	3.72	0.6517	0.5250	0.6582	0.9076
GnegativeGO	0.2286	0.63	0.0804	0.8540	0.8000	0.9518
GnegativePseAAC	0.4143	1.15	0.2679	0.7188	0.7368	0.9066
GpositivePseAAC	0.4038	0.62	0.1154	0.7692	0.8197	0.8383
HumanGO	0.5531	2.30	0.0789	0.6069	0.8683	0.8673
HumanPseAAC	0.6817	2.80	0.0750	0.5134	0.5999	0.8112
Image	0.2700	0.93	0.0754	0.8128	0.8517	0.8460
IMDB-ECC-F	0.6347	7.48	0.2046	0.4721	0.8977	0.8175
IMDB-F	0.6301	7.62	0.2046	0.4736	0.6034	0.8078
LLOG-F	0.8115	17.06	0.2749	0.2686	0.5225	0.8060
mediamill	0.1829	19.66	0.0342	0.6623	0.7381	0.9319
medical	0.6020	6.50	0.5255	0.5203	0.4896	0.8983
Music	0.2667	2.12	0.2190	0.8097	0.7860	0.7941
OHSUMED-F	0.7502	8.00	0.5566	0.3859	0.6008	0.7278
PlantGO	0.6020	2.33	0.2304	0.5666	0.9066	0.8414
PlantPseAAC	0.7347	3.34	0.3827	0.4605	0.6008	0.7250
rcv1subset1	0.7100	31.53	0.2193	0.3904	0.6036	0.7710
REUTERS-K500-EX2	0.8600	19.77	0.0782	0.2458	0.7606	0.8349
scene	0.3900	0.80	0.1089	0.7613	0.8839	0.8814
sider_CDK_ECFP4	0.1197	19.35	0.1196	0.8394	0.5091	0.7928
sider_MordredDesc	0.0845	19.17	0.1045	0.8517	0.5487	0.8043
sider_RDKit_desc	0.0986	19.73	0.1820	0.8252	0.5433	0.7760
SLASHDOT-F	0.7573	4.45	0.0251	0.4394	0.6786	0.8176
Stackex_chemistry	0.8118	43.80	0.2887	0.4843	0.4617	0.6249
Stackex_chess	0.7798	69.42	0.1336	0.2827	0.3093	0.7800
Stackex_coffee	0.9130	28.17	0.0752	0.1348	0.0455	0.1696
Stackex_cooking	0.9014	127.02	0.2015	0.4874	0.3820	0.5291
Stackex_cs	0.7922	64.10	0.2275	0.8036	0.2783	0.4802
Stackex_philosophy	0.8241	60.80	0.1725	0.3903	0.5154	0.6898
tmc2007-500	0.4136	5.56	0.1970	0.6094	0.7637	0.8581
tox21_CDK_ECFP4	0.6199	4.53	0.0912	0.5305	0.7204	0.7197
tox21_RDKit_desc	0.6027	4.63	0.1057	0.5315	0.6814	0.7123
VirusGO	0.3333	0.76	0.1270	0.8796	0.6492	0.7497
VirusPseAAC	0.5714	0.90	0.0000	0.6921	0.5136	0.8383
Water-quality	0.2264	9.05	0.2720	0.6932	0.6648	0.7126
Yahoo_Arts	0.7303	6.36	0.3923	0.4432	0.7403	0.8092
Yahoo_Business	0.1310	2.48	0.1427	0.8798	0.6994	0.8980
Yahoo_Computers	0.4924	2.52	0.2137	0.0466	0.1715	0.2695
Yahoo_Education	0.6958	3.94	0.3506	0.5977	0.4274	0.6855
Yahoo_Entertainment	0.6709	3.84	0.0943	0.5093	0.6122	0.8444
Yahoo_Health	0.4734	3.98	0.3184	0.6286	0.4638	0.9075
Yahoo_Recreation	0.7521	5.73	0.6023	0.4077	0.7641	0.7706
Yahoo_Reference	0.4944	3.91	0.1728	0.5875	0.6356	0.8954
Yahoo_Science	0.7574	7.62	0.1340	0.4692	0.7338	0.7269
Yahoo_Social	0.4554	4.07	0.1831	0.6519	0.8990	0.9098
yeast	0.2603	6.62	0.3083	0.7178	0.6021	0.8034
Yelp	0.3430	1.69	0.3981	0.7666	0.6741	0.7643

Table 143: Detailed results for RFML-DT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6804	4.30	0.1703	0.4699	0.7901	0.7945
3s-bbc1000	0.8333	2.65	0.7859	0.4414	0.4922	0.5411
3s-guardian1000	0.6452	2.15	0.5524	0.5546	0.5780	0.6689
3s-reuters1000	0.8833	2.30	0.8292	0.4196	0.5141	0.5182
bibtex	0.6628	47.67	0.2053	0.3068	0.7606	0.8192
birds	0.4487	4.14	0.1155	0.6171	0.7670	0.8658
bookmarks	0.6302	49.32	0.1685	0.3948	0.8162	0.8593
CAL500	0.1471	130.80	0.3917	0.5109	0.5356	0.8236
corel16k001	0.7059	48.89	0.1075	0.2990	0.7071	0.8394
Corel5k	0.6940	113.10	0.4545	0.2729	0.5200	0.8934
delicious	0.3741	606.26	0.1572	0.3530	0.8191	0.8992
emotions	0.1917	1.55	0.1292	0.8386	0.8642	0.8857
enron	0.2105	12.86	0.0663	0.6808	0.6388	0.9146
EukaryoteGO	0.1854	0.61	0.0087	0.8883	0.9759	0.9912
EukaryotePseAAC	0.5689	2.48	0.0168	0.6051	0.7401	0.9032
Eurlex-dc	0.2644	14.54	0.0506	0.7703	0.7386	0.9860
Eurlex-sm	0.1796	8.70	0.0984	0.7984	0.7998	0.9849
foodtruck	0.2439	2.90	0.3104	0.7867	0.6168	0.8048
genbase	0.0000	0.54	0.0075	0.9919	0.6571	0.9978
GnegativeGO	0.0214	0.09	0.0107	0.9871	0.8678	0.9959
GnegativePseAAC	0.2714	0.69	0.1152	0.8263	0.7808	0.9496
GpositivePseAAC	0.2981	0.51	0.1731	0.8205	0.8618	0.8682
HumanGO	0.2154	0.76	0.0282	0.8629	0.9248	0.9728
HumanPseAAC	0.5997	2.32	0.0698	0.5874	0.7020	0.8545
Image	0.1950	0.72	0.0650	0.8616	0.8986	0.8980
IMDB-ECC-F	0.6382	8.12	0.1954	0.4626	0.5979	0.7895
IMDB-F	0.6453	8.33	0.1970	0.4598	0.5960	0.7878
LLOG-F	0.7828	16.16	0.2213	0.3214	0.3909	0.8271
mediamill	0.1065	12.87	0.0156	0.7758	0.8796	0.9636
medical	0.2755	2.93	0.1097	0.7789	0.5218	0.9681
Music	0.2167	1.89	0.1475	0.8155	0.8609	0.8703
OHSUMED-F	0.6777	7.35	0.3029	0.4253	0.6070	0.7559
PlantGO	0.2216	0.54	0.0309	0.8724	0.9710	0.9750
PlantPseAAC	0.6276	2.13	0.1390	0.5755	0.7784	0.8386
rcv1subset1	0.5275	20.83	0.1411	0.4894	0.7829	0.8988
REUTERS-K500-EX2	0.5727	10.65	0.0827	0.5291	0.6930	0.9339
scene	0.1784	0.41	0.0482	0.8898	0.9459	0.9543
sider_CDK_ECFP4	0.1303	19.17	0.0964	0.8409	0.6220	0.8089
sider_MordredDesc	0.0599	19.13	0.0973	0.8596	0.6368	0.8065
sider_RDKit_desc	0.0704	19.19	0.0963	0.8501	0.7203	0.8091
SLASHDOT-F	0.5746	3.45	0.0873	0.5706	0.6224	0.8808
Stackex_chemistry	0.7129	44.79	0.2990	0.3072	0.7497	0.8823
Stackex_chess	0.6577	68.12	0.2170	0.2895	0.4281	0.8755
Stackex_coffee	0.8913	50.72	0.2219	0.2297	0.2103	0.8020
Stackex_cooking	0.7845	162.27	0.3290	0.1931	0.7556	0.8582
Stackex_cs	0.6156	83.43	0.2727	0.3152	0.7261	0.8875
Stackex_philosophy	0.7236	71.78	0.2303	0.2887	0.5616	0.8629
tmc2007-500	0.3605	4.02	0.1207	0.6925	0.8362	0.9081
tox21_CDK_ECFP4	0.4880	4.05	0.1014	0.6170	0.6977	0.7674
tox21_RDKit_desc	0.4640	3.86	0.0972	0.6376	0.7182	0.7820
VirusGO	0.0714	0.50	0.0516	0.9381	0.7769	0.9614
VirusPseAAC	0.2143	0.57	0.0000	0.8607	0.6952	0.9263
Water-quality	0.2406	8.73	0.2210	0.7197	0.7032	0.7416
Yahoo_Arts	0.6575	5.97	0.3584	0.4895	0.6213	0.8136
Yahoo_Business	0.1243	2.23	0.1426	0.8845	0.6740	0.9515
Yahoo_Computers	0.4277	4.16	0.3812	0.6476	0.6482	0.8861
Yahoo_Education	0.6446	4.17	0.3030	0.5209	0.6755	0.9000
Yahoo_Entertainment	0.5609	3.47	0.1172	0.5795	0.7222	0.8648
Yahoo_Health	0.4435	3.67	0.2745	0.6590	0.6456	0.9238
Yahoo_Recreation	0.6820	4.85	0.4835	0.4765	0.6636	0.7932
Yahoo_Reference	0.4489	3.43	0.1350	0.6431	0.6223	0.9138
Yahoo_Science	0.7100	8.00	0.1859	0.4245	0.6510	0.8247
Yahoo_Social	0.4224	4.00	0.1363	0.6829	0.6781	0.9137
yeast	0.2376	6.15	0.2205	0.7608	0.7204	0.8482
Yelp	0.0728	1.17	0.1441	0.9261	0.8430	0.9007

Table 144: Detailed results for EPCT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6842	4.29	0.1693	0.4517	0.7751	0.7786
3s-bbc1000	0.8056	2.56	0.8009	0.4514	0.5434	0.5683
3s-guardian1000	0.5161	1.84	0.5565	0.6199	0.6247	0.7059
3s-reuters1000	0.8667	2.57	0.8667	0.3917	0.5513	0.4985
bibtex	0.6528	47.89	0.1995	0.3132	0.7682	0.7960
birds	0.5385	4.62	0.1481	0.5695	0.7612	0.8364
bookmarks	0.6247	48.98	0.1591	0.4111	0.8263	0.8609
CAL500	0.1373	130.90	0.4015	0.5026	0.5277	0.8204
corel16k001	0.6761	49.52	0.1127	0.2762	0.6915	0.8381
Corel5k	0.6200	96.33	0.4060	0.3269	0.5325	0.9072
delicious	0.3800	612.33	0.1598	0.3335	0.8363	0.8909
emotions	0.2333	1.60	0.1361	0.8287	0.8616	0.8812
enron	0.1988	13.16	0.0624	0.6899	0.6051	0.9081
EukaryoteGO	0.1636	0.59	0.0034	0.8664	0.9937	0.9751
EukaryotePseAAC	0.6499	2.93	0.0198	0.5407	0.6987	0.8885
Eurlex-dc	0.3488	19.84	0.0642	0.6835	0.7330	0.9521
Eurlex-sm	0.2462	11.13	0.1521	0.7488	0.7893	0.9624
foodtruck	0.2439	2.68	0.3069	0.7941	0.6760	0.8203
genbase	0.0000	0.49	0.0075	0.9932	0.6667	0.9983
GnegativeGO	0.0214	0.09	0.0107	0.9863	0.8718	0.9970
GnegativePseAAC	0.3643	1.00	0.1661	0.7585	0.7591	0.9134
GpositivePseAAC	0.4615	0.69	0.1154	0.7372	0.8806	0.8616
HumanGO	0.2290	0.77	0.0121	0.8460	0.9199	0.9717
HumanPseAAC	0.6592	2.41	0.0612	0.5480	0.6557	0.8369
Image	0.2500	0.80	0.0479	0.8341	0.8710	0.8647
IMDB-ECC-F	0.6489	8.08	0.1753	0.4653	0.5784	0.7839
IMDB-F	0.6415	8.35	0.1802	0.4700	0.5886	0.7946
LLOG-F	0.7295	12.64	0.1525	0.3693	0.4396	0.8606
mediamill	0.1007	13.11	0.0034	0.7584	0.8718	0.9688
medical	0.1735	2.16	0.1097	0.8487	0.5390	0.9768
Music	0.2833	2.07	0.1421	0.7704	0.8515	0.8539
OHSUMED-F	0.6423	7.36	0.2843	0.4402	0.6048	0.7515
PlantGO	0.2396	0.56	0.0260	0.8555	0.9649	0.9667
PlantPseAAC	0.6633	2.70	0.1811	0.5293	0.7399	0.7992
rcv1subset1	0.4866	18.48	0.1267	0.5191	0.8046	0.8999
REUTERS-K500-EX2	0.4795	7.87	0.0487	0.5958	0.7090	0.9249
scene	0.2863	0.51	0.0695	0.8389	0.9257	0.9218
sider_CDK_ECFP4	0.0845	18.68	0.0898	0.8647	0.5844	0.8141
sider_MordredDesc	0.0775	19.11	0.0941	0.8611	0.5560	0.8090
sider_RDKit_desc	0.0915	19.01	0.0923	0.8597	0.5671	0.8103
SLASHDOT-F	0.5848	3.58	0.0802	0.5465	0.6147	0.8917
Stackex_chemistry	0.6758	31.78	0.1822	0.3609	0.7749	0.9004
Stackex_chess	0.5714	48.76	0.1179	0.3773	0.4619	0.9058
Stackex_coffee	0.7826	40.91	0.1428	0.3195	0.2355	0.8243
Stackex_cooking	0.7619	137.63	0.2424	0.2338	0.7290	0.8211
Stackex_cs	0.5103	41.69	0.1566	0.4539	0.8026	0.9367
Stackex_philosophy	0.5628	43.32	0.1176	0.4249	0.6214	0.9084
tmc2007-500	0.3486	3.99	0.1145	0.7017	0.8471	0.9190
tox21_CDK_ECFP4	0.5171	3.98	0.0891	0.6050	0.7285	0.7771
tox21_RDKit_desc	0.4760	3.98	0.0692	0.6164	0.7129	0.7727
VirusGO	0.0476	0.43	0.0476	0.9540	0.7568	0.9485
VirusPseAAC	0.4286	0.76	0.0000	0.7556	0.6492	0.8818
Water-quality	0.2547	8.75	0.2067	0.7160	0.7047	0.7391
Yahoo_Arts	0.6052	5.52	0.3343	0.4967	0.6510	0.8225
Yahoo_Business	0.1183	2.05	0.1331	0.8889	0.7307	0.9511
Yahoo_Computers	0.4214	3.94	0.3916	0.6399	0.6661	0.8747
Yahoo_Education	0.6277	3.90	0.2737	0.5418	0.6602	0.9083
Yahoo_Entertainment	0.5375	3.24	0.1061	0.5684	0.7259	0.8548
Yahoo_Health	0.4348	3.50	0.2754	0.6785	0.6232	0.9117
Yahoo_Recreation	0.6552	4.42	0.5041	0.5089	0.6927	0.8074
Yahoo_Reference	0.4595	3.02	0.1140	0.6320	0.6198	0.9200
Yahoo_Science	0.7136	7.06	0.1310	0.4505	0.6667	0.8363
Yahoo_Social	0.4151	3.68	0.1265	0.6698	0.6950	0.8981
yeast	0.2603	6.28	0.2579	0.7400	0.6970	0.8284
Yelp	0.0688	1.14	0.1453	0.9328	0.8859	0.9059

Table 145: Detailed results for RFPCT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6918	4.27	0.1632	0.4723	0.7799	0.8084
3s-bbc1000	0.7500	2.31	0.7917	0.4719	0.5843	0.5995
3s-guardian1000	0.5484	1.84	0.5484	0.6142	0.5385	0.6787
3s-reuters1000	0.8667	2.47	0.8667	0.4036	0.5816	0.5207
bibtex	0.6648	47.87	0.2014	0.2881	0.7705	0.8107
birds	0.5385	4.56	0.1601	0.5725	0.7655	0.8419
bookmarks	0.6125	49.01	0.1682	0.3860	0.8035	0.8409
CAL500	0.1373	131.57	0.4051	0.5014	0.5178	0.8183
corel16k001	0.6536	43.19	0.0808	0.3426	0.7475	0.8646
Corel5k	0.6260	95.11	0.4009	0.3213	0.5276	0.9072
delicious	0.3313	514.26	0.0952	0.3911	0.7965	0.9008
emotions	0.2667	1.53	0.1264	0.8245	0.8532	0.8749
enron	0.1813	12.88	0.0597	0.6973	0.6321	0.9127
EukaryoteGO	0.1649	0.59	0.0089	0.8824	0.9818	0.9945
EukaryotePseAAC	0.6577	2.94	0.0158	0.5358	0.7333	0.8886
Eurlex-dc	0.3429	19.85	0.0752	0.6994	0.7075	0.9632
Eurlex-sm	0.2297	11.13	0.1329	0.7210	0.7732	0.9849
foodtruck	0.2439	2.80	0.3130	0.7842	0.6402	0.8107
genbase	0.0000	0.22	0.0000	0.9975	0.6667	1.0000
GnegativeGO	0.0286	0.09	0.0071	0.9833	0.8722	0.9978
GnegativePseAAC	0.3500	1.04	0.2375	0.7625	0.7214	0.9101
GpositivePseAAC	0.4231	0.69	0.1346	0.7500	0.8809	0.8512
HumanGO	0.1993	0.77	0.0100	0.8398	0.9386	0.9757
HumanPseAAC	0.6495	2.43	0.0560	0.5469	0.7243	0.8400
Image	0.2650	0.85	0.0517	0.8215	0.8703	0.8655
IMDB-ECC-F	0.6260	8.10	0.1743	0.4628	0.5751	0.7814
IMDB-F	0.6342	8.35	0.1964	0.4358	0.5787	0.7884
LLOG-F	0.6721	12.24	0.1261	0.3891	0.4542	0.8659
mediamill	0.0930	13.11	0.0205	0.7839	0.8779	0.9461
medical	0.1735	1.81	0.0893	0.8643	0.5420	0.9800
Music	0.2833	2.10	0.1560	0.7645	0.8539	0.8567
OHSUMED-F	0.5327	4.98	0.1695	0.5640	0.8231	0.8555
PlantGO	0.2500	0.67	0.0260	0.8518	0.9595	0.9640
PlantPseAAC	0.6531	2.74	0.1854	0.5286	0.6967	0.7887
rcv1subset1	0.4855	18.49	0.1002	0.5100	0.7928	0.9103
REUTERS-K500-EX2	0.4876	7.88	0.0582	0.5910	0.7167	0.9487
scene	0.2365	0.48	0.0622	0.8621	0.9322	0.9301
sider_CDK_ECFP4	0.0704	18.65	0.0893	0.8643	0.5924	0.8143
sider_MordredDesc	0.0704	19.17	0.0943	0.8586	0.5582	0.8082
sider_RDKit_desc	0.0915	19.04	0.0915	0.8581	0.5657	0.8096
SLASHDOT-F	0.3915	2.25	0.0112	0.7077	0.6909	0.9244
Stackex_chemistry	0.6542	31.72	0.2074	0.3698	0.7725	0.9006
Stackex_chess	0.5417	45.50	0.1133	0.4030	0.4702	0.9105
Stackex_coffee	0.6522	40.39	0.1437	0.3855	0.2424	0.8229
Stackex_cooking	0.7454	137.65	0.2307	0.2222	0.7113	0.8398
Stackex_cs	0.5038	42.40	0.1571	0.4545	0.7965	0.9361
Stackex_philosophy	0.5729	44.12	0.1179	0.4331	0.6257	0.9109
tmc2007-500	0.3070	3.01	0.0821	0.7580	0.9169	0.9395
tox21_CDK_ECFP4	0.4795	3.98	0.0967	0.6149	0.7105	0.7740
tox21_RDKit_desc	0.4589	3.89	0.0713	0.6337	0.7188	0.7770
VirusGO	0.0476	0.48	0.0556	0.9500	0.7656	0.9465
VirusPseAAC	0.1429	0.57	0.0000	0.8921	0.6974	0.9029
Water-quality	0.2358	8.79	0.2124	0.7229	0.7008	0.7375
Yahoo_Arts	0.6180	5.51	0.3416	0.5129	0.6617	0.8353
Yahoo_Business	0.1082	2.06	0.1341	0.8647	0.7057	0.9592
Yahoo_Computers	0.4418	3.96	0.3696	0.6325	0.6513	0.8863
Yahoo_Education	0.6541	3.91	0.2676	0.5433	0.6815	0.8883
Yahoo_Entertainment	0.5596	3.25	0.1125	0.6020	0.7271	0.8603
Yahoo_Health	0.4473	3.52	0.2739	0.6638	0.6281	0.9166
Yahoo_Recreation	0.6398	4.44	0.4923	0.4737	0.6770	0.8051
Yahoo_Reference	0.4550	3.01	0.1125	0.6495	0.6343	0.9229
Yahoo_Science	0.6981	7.06	0.1420	0.4523	0.6732	0.8430
Yahoo_Social	0.3902	3.69	0.1325	0.6710	0.6646	0.9279
yeast	0.2603	6.17	0.2476	0.7451	0.6983	0.8344
Yelp	0.0678	1.14	0.1441	0.9320	0.8911	0.9082

Table 146: Detailed results for EML-DT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7057	4.60	0.1856	0.4486	0.7748	0.7782
3s-bbc1000	0.7917	2.47	0.7431	0.4633	0.5052	0.5531
3s-guardian1000	0.6774	2.15	0.5363	0.5367	0.5878	0.6512
3s-reuters1000	0.8000	2.25	0.7792	0.4547	0.5427	0.5289
bibtex	0.6885	50.91	0.2428	0.2866	0.7606	0.8119
birds	0.4744	4.09	0.1219	0.6173	0.7689	0.8708
bookmarks	0.6350	51.62	0.1854	0.3955	0.8110	0.8687
CAL500	0.1471	130.53	0.3891	0.5126	0.5353	0.8240
corel16k001	0.7092	49.11	0.1056	0.2952	0.7078	0.8381
Corel5k	0.7110	114.01	0.4600	0.2643	0.5209	0.8929
delicious	0.3813	646.54	0.1847	0.3446	0.8373	0.9044
emotions	0.2167	1.55	0.1243	0.8349	0.8561	0.8831
enron	0.2251	13.33	0.0660	0.6753	0.6354	0.9127
EukaryoteGO	0.1836	0.73	0.0184	0.8861	0.9678	0.9900
EukaryotePseAAC	0.5714	2.48	0.0140	0.6053	0.7460	0.9033
Eurlex-dc	0.3057	21.28	0.0751	0.7330	0.7342	0.9834
Eurlex-sm	0.2028	11.08	0.1108	0.7778	0.7912	0.9817
foodtruck	0.2927	3.00	0.3154	0.7563	0.6213	0.8049
genbase	0.0000	0.54	0.0075	0.9919	0.6580	0.9986
GnegativeGO	0.0214	0.10	0.0107	0.9858	0.8680	0.9943
GnegativePseAAC	0.2607	0.66	0.1179	0.8342	0.7736	0.9485
GpositivePseAAC	0.3558	0.61	0.1923	0.7853	0.8369	0.8534
HumanGO	0.2187	0.88	0.0416	0.8569	0.9267	0.9683
HumanPseAAC	0.5820	2.30	0.0736	0.5967	0.6763	0.8499
Image	0.2100	0.77	0.0733	0.8493	0.8921	0.8927
IMDB-ECC-F	0.6460	8.30	0.2029	0.4565	0.6101	0.7872
IMDB-F	0.6518	8.46	0.1946	0.4659	0.6092	0.7770
LLOG-F	0.8033	15.95	0.2200	0.3063	0.3930	0.8296
mediamill	0.1091	13.63	0.0187	0.7705	0.8721	0.9612
medical	0.3367	3.90	0.1186	0.7319	0.5169	0.9619
Music	0.1917	1.90	0.1486	0.8220	0.8644	0.8749
OHSUMED-F	0.6942	7.73	0.3205	0.4113	0.5968	0.7441
PlantGO	0.2135	0.48	0.0260	0.8788	0.9714	0.9749
PlantPseAAC	0.6582	2.28	0.1437	0.5514	0.7521	0.8301
rcv1subset1	0.5492	25.85	0.1795	0.4554	0.7436	0.8754
REUTERS-K500-EX2	0.6692	15.01	0.1357	0.4438	0.6718	0.9154
scene	0.2075	0.46	0.0482	0.8742	0.9393	0.9472
sider_CDK_ECFP4	0.1268	19.19	0.0974	0.8401	0.6110	0.8084
sider_MordredDesc	0.0669	19.20	0.0990	0.8576	0.6415	0.8042
sider_RDKit_desc	0.0775	19.19	0.0970	0.8483	0.7088	0.8088
SLASHDOT-F	0.5701	3.58	0.0833	0.5672	0.6164	0.8757
Stackex_chemistry	0.7298	50.24	0.3116	0.2944	0.7585	0.8835
Stackex_chess	0.6637	71.29	0.2323	0.2843	0.4301	0.8768
Stackex_coffee	0.8261	54.93	0.2713	0.2435	0.2067	0.8108
Stackex_cooking	0.7870	174.47	0.3871	0.1844	0.7733	0.8669
Stackex_cs	0.6371	96.45	0.3153	0.2952	0.7415	0.8891
Stackex_philosophy	0.7249	78.19	0.2665	0.2823	0.5788	0.8709
tmc2007-500	0.3526	4.19	0.1206	0.6911	0.8269	0.9043
tox21_CDK_ECFP4	0.4983	4.14	0.1153	0.6122	0.6802	0.7572
tox21_RDKit_desc	0.4469	3.87	0.0880	0.6403	0.7193	0.7820
VirusGO	0.1429	0.50	0.0476	0.9175	0.7769	0.9568
VirusPseAAC	0.2143	0.64	0.0000	0.8516	0.7235	0.9268
Water-quality	0.2264	8.51	0.2235	0.7220	0.7027	0.7417
Yahoo_Arts	0.6642	6.24	0.3583	0.4816	0.6221	0.8083
Yahoo_Business	0.1230	2.30	0.1429	0.8828	0.6666	0.9502
Yahoo_Computers	0.4178	4.26	0.3844	0.6579	0.6464	0.8845
Yahoo_Education	0.6538	4.41	0.3203	0.5075	0.6805	0.8950
Yahoo_Entertainment	0.5648	3.58	0.1220	0.5739	0.7287	0.8599
Yahoo_Health	0.4457	3.90	0.2833	0.6523	0.6487	0.9208
Yahoo_Recreation	0.6931	4.96	0.4802	0.4661	0.6596	0.8004
Yahoo_Reference	0.4527	3.62	0.1430	0.6381	0.6204	0.9101
Yahoo_Science	0.7263	8.44	0.2013	0.4084	0.6584	0.8181
Yahoo_Social	0.4215	4.15	0.1505	0.6693	0.6952	0.9135
yeast	0.2355	6.21	0.2258	0.7570	0.7189	0.8456
Yelp	0.0833	1.18	0.1387	0.9221	0.8385	0.8993

Table 147: Detailed results for ExPCT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6831	4.28	0.1705	0.4692	0.7907	0.7950
3s-bbc1000	0.7778	2.69	0.8079	0.4427	0.5153	0.5435
3s-guardian1000	0.6129	2.06	0.5645	0.5772	0.5397	0.6591
3s-reuters1000	0.8667	2.43	0.8667	0.4039	0.5129	0.5112
bibtex	0.6703	47.88	0.2093	0.3058	0.7614	0.8182
birds	0.4872	3.85	0.1073	0.6428	0.7981	0.8838
bookmarks	0.6274	49.00	0.1663	0.3975	0.8164	0.8595
CAL500	0.1373	131.67	0.3925	0.5108	0.5379	0.8226
corel16k001	0.7008	49.53	0.1057	0.3010	0.7044	0.8390
Corel5k	0.6900	111.24	0.4551	0.2719	0.5232	0.8941
delicious	0.3692	612.34	0.1603	0.3535	0.8218	0.9002
emotions	0.1833	1.48	0.1056	0.8550	0.8630	0.8851
enron	0.1988	12.74	0.0598	0.6856	0.6432	0.9157
EukaryoteGO	0.1804	0.59	0.0061	0.8901	0.9787	0.9918
EukaryotePseAAC	0.6100	2.75	0.0169	0.5693	0.7337	0.8935
Eurlex-dc	0.3461	19.85	0.0665	0.7011	0.7253	0.9760
Eurlex-sm	0.2470	11.15	0.1573	0.7388	0.7887	0.9778
foodtruck	0.2683	3.05	0.3187	0.7625	0.5957	0.7960
genbase	0.0000	0.54	0.0075	0.9932	0.6588	0.9984
GnegativeGO	0.0214	0.09	0.0107	0.9871	0.8676	0.9958
GnegativePseAAC	0.2929	0.83	0.1661	0.8022	0.8075	0.9344
GpositivePseAAC	0.2885	0.56	0.1538	0.8173	0.8683	0.8638
HumanGO	0.2187	0.79	0.0330	0.8624	0.9347	0.9721
HumanPseAAC	0.6367	2.39	0.0693	0.5610	0.7083	0.8444
Image	0.1900	0.70	0.0612	0.8650	0.8949	0.8967
IMDB-ECC-F	0.6412	8.10	0.1960	0.4616	0.5992	0.7900
IMDB-F	0.6428	8.34	0.1968	0.4605	0.5951	0.7878
LLOG-F	0.7869	16.14	0.1995	0.3196	0.3882	0.8271
mediamill	0.1100	13.11	0.0159	0.7746	0.8797	0.9631
medical	0.2653	2.99	0.1122	0.7796	0.5213	0.9669
Music	0.2167	1.93	0.1630	0.8068	0.8745	0.8796
OHSUMED-F	0.6633	7.37	0.3038	0.4305	0.6103	0.7565
PlantGO	0.2292	0.51	0.0365	0.8704	0.9719	0.9748
PlantPseAAC	0.6531	2.53	0.1658	0.5450	0.7341	0.7991
rcv1subset1	0.5000	18.49	0.1210	0.5172	0.8040	0.9117
REUTERS-K500-EX2	0.4983	7.89	0.0587	0.6029	0.7161	0.9486
scene	0.1826	0.37	0.0415	0.8934	0.9492	0.9578
sider_CDK_ECFP4	0.1268	19.18	0.0950	0.8427	0.6023	0.8091
sider_MordredDesc	0.0634	19.18	0.0983	0.8572	0.6329	0.8058
sider_RDKit_desc	0.0915	19.12	0.0950	0.8545	0.6354	0.8086
SLASHDOT-F	0.5714	3.57	0.0810	0.5692	0.6191	0.8782
Stackex_chemistry	0.6960	37.08	0.2671	0.3304	0.7332	0.8820
Stackex_chess	0.6786	54.21	0.1350	0.2998	0.4322	0.8817
Stackex_coffee	0.9130	49.61	0.1996	0.2397	0.2096	0.7879
Stackex_cooking	0.7536	137.64	0.2459	0.2230	0.7220	0.8457
Stackex_cs	0.5948	65.96	0.2193	0.3585	0.7164	0.8931
Stackex_philosophy	0.7236	63.75	0.1849	0.3099	0.5310	0.8540
tmc2007-500	0.3577	3.98	0.1200	0.6938	0.8398	0.9093
tox21_CDK_ECFP4	0.4726	4.07	0.1123	0.6220	0.6959	0.7659
tox21_RDKit_desc	0.4692	3.83	0.0849	0.6366	0.7241	0.7845
VirusGO	0.0952	0.57	0.0476	0.9206	0.7784	0.9517
VirusPseAAC	0.2857	0.67	0.0000	0.8230	0.6878	0.9067
Water-quality	0.2170	8.58	0.2029	0.7300	0.7158	0.7467
Yahoo_Arts	0.6208	5.51	0.3456	0.5205	0.6668	0.8284
Yahoo_Business	0.1275	2.05	0.1437	0.8867	0.7177	0.9580
Yahoo_Computers	0.4337	3.95	0.3873	0.6542	0.6657	0.8948
Yahoo_Education	0.6434	3.92	0.2857	0.5302	0.6686	0.9036
Yahoo_Entertainment	0.5546	3.26	0.1038	0.5918	0.7300	0.8718
Yahoo_Health	0.4528	3.51	0.2680	0.6639	0.6342	0.9293
Yahoo_Recreation	0.6633	4.43	0.4926	0.4987	0.7019	0.8117
Yahoo_Reference	0.4508	3.02	0.1183	0.6538	0.6305	0.9223
Yahoo_Science	0.7014	7.08	0.1379	0.4476	0.6814	0.8438
Yahoo_Social	0.4109	3.69	0.1321	0.6877	0.6894	0.9190
yeast	0.2603	6.15	0.2343	0.7502	0.6931	0.8420
Yelp	0.0708	1.17	0.1404	0.9276	0.8424	0.9008

Table 148: Detailed results for ExML-DT

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.6886	4.30	0.1754	0.4676	0.7900	0.7944
3s-bbc1000	0.7778	2.61	0.7986	0.4474	0.5358	0.5526
3s-guardian1000	0.5806	2.06	0.5484	0.5866	0.5466	0.6757
3s-reuters1000	0.8667	2.70	0.8667	0.3856	0.4878	0.4924
bibtex	0.6622	47.33	0.2074	0.3063	0.7680	0.8214
birds	0.4615	3.92	0.1214	0.6338	0.7901	0.8780
bookmarks	0.6313	49.11	0.1652	0.3949	0.8168	0.8598
CAL500	0.1373	132.92	0.3937	0.5051	0.5449	0.8225
corel16k001	0.7052	49.23	0.1051	0.2980	0.7092	0.8403
Corel5k	0.6960	113.01	0.4645	0.2665	0.5178	0.8920
delicious	0.3773	608.16	0.1599	0.3531	0.8213	0.9000
emotions	0.2333	1.52	0.1125	0.8370	0.8574	0.8839
enron	0.2047	12.67	0.0674	0.6825	0.6463	0.9134
EukaryoteGO	0.1853	0.60	0.0048	0.8885	0.9769	0.9913
EukaryotePseAAC	0.6345	2.79	0.0195	0.5581	0.7211	0.8939
Eurlex-dc	0.3518	19.72	0.0649	0.6957	0.7276	0.9767
Eurlex-sm	0.2460	11.03	0.1588	0.7377	0.7897	0.9781
foodtruck	0.2683	3.15	0.3209	0.7566	0.6337	0.8005
genbase	0.0000	0.54	0.0075	0.9932	0.6582	0.9983
GnegativeGO	0.0214	0.09	0.0107	0.9871	0.8675	0.9955
GnegativePseAAC	0.3000	0.84	0.1821	0.8005	0.8068	0.9331
GpositivePseAAC	0.3077	0.62	0.1538	0.8013	0.8207	0.8458
HumanGO	0.2283	0.76	0.0279	0.8592	0.9230	0.9723
HumanPseAAC	0.6495	2.42	0.0625	0.5584	0.6725	0.8446
Image	0.2150	0.77	0.0646	0.8468	0.8928	0.8950
IMDB-ECC-F	0.6386	8.09	0.1976	0.4626	0.5990	0.7900
IMDB-F	0.6445	8.33	0.1978	0.4605	0.5960	0.7876
LLOG-F	0.7787	15.58	0.2180	0.3171	0.3851	0.8289
mediamill	0.1071	13.08	0.0161	0.7755	0.8796	0.9632
medical	0.2653	2.72	0.0995	0.7811	0.5238	0.9694
Music	0.2167	1.80	0.1380	0.8243	0.8751	0.8785
OHSUMED-F	0.6762	7.32	0.3058	0.4280	0.6113	0.7560
PlantGO	0.2041	0.45	0.0153	0.8838	0.9715	0.9758
PlantPseAAC	0.6429	2.37	0.1556	0.5603	0.7548	0.8126
rcv1subset1	0.5233	18.81	0.1210	0.5068	0.8109	0.9126
REUTERS-K500-EX2	0.4867	7.09	0.0532	0.6104	0.7213	0.9522
scene	0.1826	0.37	0.0446	0.8955	0.9504	0.9575
sider_CDK_ECFP4	0.1338	19.15	0.0960	0.8400	0.6100	0.8087
sider_MordredDesc	0.0704	19.20	0.0983	0.8563	0.6484	0.8063
sider_RDKit_desc	0.0775	19.19	0.0974	0.8525	0.6311	0.8076
SLASHDOT-F	0.5831	3.45	0.0794	0.5645	0.6217	0.8800
Stackex_chemistry	0.7026	37.41	0.2752	0.3301	0.7310	0.8820
Stackex_chess	0.6905	60.19	0.1560	0.3019	0.4313	0.8779
Stackex_coffee	0.8696	48.48	0.1923	0.2443	0.2075	0.7908
Stackex_cooking	0.7662	139.62	0.2414	0.2191	0.7268	0.8469
Stackex_cs	0.5909	66.33	0.2201	0.3567	0.7158	0.8940
Stackex_philosophy	0.7362	65.07	0.1858	0.3061	0.5328	0.8552
tmc2007-500	0.3580	3.98	0.1217	0.6931	0.8396	0.9097
tox21_CDK_ECFP4	0.4897	4.03	0.1111	0.6202	0.6982	0.7676
tox21_RDKit_desc	0.4658	3.88	0.0879	0.6344	0.7174	0.7807
VirusGO	0.0952	0.57	0.0476	0.9246	0.7714	0.9549
VirusPseAAC	0.3333	0.71	0.0000	0.7992	0.6786	0.9139
Water-quality	0.2170	8.61	0.2082	0.7313	0.7156	0.7483
Yahoo_Arts	0.6422	5.58	0.3662	0.5070	0.6529	0.8265
Yahoo_Business	0.1257	2.01	0.1434	0.8887	0.7155	0.9589
Yahoo_Computers	0.4281	3.84	0.3865	0.6558	0.6776	0.8965
Yahoo_Education	0.6426	3.93	0.2866	0.5303	0.6515	0.9042
Yahoo_Entertainment	0.5428	3.25	0.0999	0.5951	0.7380	0.8733
Yahoo_Health	0.4539	3.54	0.2728	0.6603	0.6533	0.9287
Yahoo_Recreation	0.6586	4.41	0.4862	0.5026	0.7006	0.8117
Yahoo_Reference	0.4521	3.12	0.1152	0.6520	0.6276	0.9206
Yahoo_Science	0.6874	7.16	0.1517	0.4513	0.6842	0.8441
Yahoo_Social	0.4117	3.54	0.1246	0.6885	0.6895	0.9191
yeast	0.2603	6.21	0.2381	0.7468	0.7116	0.8403
Yelp	0.0678	1.17	0.1414	0.9289	0.8438	0.9015

Table 149: Detailed results for BASICBP

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7187	4.71	0.2076	0.4382	0.6848	0.6877
3s-bbc1000	0.3333	1.28	0.2500	0.7569	0.7720	0.7782
3s-guardian1000	0.5484	2.32	0.2258	0.5782	0.6612	0.6330
3s-reuters1000	0.5667	1.13	0.2333	0.6550	0.7728	0.7692
bibtex	0.7973	79.89	0.3441	0.1754	0.5546	0.5968
birds	0.3846	6.21	0.1613	0.6168	0.6909	0.7668
bookmarks	0.8366	98.51	0.3599	0.1906	0.5567	0.5881
CAL500	0.6667	168.71	0.4662	0.2438	0.4562	0.5202
corel16k001	0.8998	107.90	0.4641	0.1016	0.5184	0.5196
Corel5k	0.8880	276.13	0.4554	0.0772	0.3492	0.5227
delicious	0.6600	905.15	0.3840	0.1203	0.4941	0.5615
emotions	0.3000	1.95	0.2125	0.7652	0.8154	0.8180
enron	0.6433	38.25	0.4650	0.2621	0.4108	0.4738
EukaryoteGO	0.5174	5.18	0.2141	0.5713	0.6445	0.7508
EukaryotePseAAC	0.8044	9.73	0.4489	0.3005	0.5065	0.5600
Eurlex-dc	0.8148	139.64	0.2765	0.2203	0.3979	0.5635
Eurlex-sm	0.6832	75.80	0.4362	0.2965	0.4310	0.6377
foodtruck	0.4878	4.76	0.2793	0.5840	0.5985	0.7250
genbase	0.5821	6.91	0.0970	0.4966	0.6196	0.7848
GnegativeGO	0.1286	0.52	0.0196	0.9047	0.8438	0.9535
GnegativePseAAC	0.3286	1.14	0.0482	0.7677	0.6925	0.8536
GpositivePseAAC	0.3269	0.48	0.1346	0.8125	0.7894	0.8606
HumanGO	0.3601	2.68	0.1929	0.7146	0.7211	0.7867
HumanPseAAC	0.7267	5.51	0.4040	0.4119	0.5685	0.5997
Image	0.3750	1.02	0.1467	0.7625	0.8011	0.7974
IMDB-ECC-F	0.8462	16.77	0.4775	0.2303	0.5130	0.5141
IMDB-F	0.8470	16.99	0.4856	0.2285	0.4952	0.5093
LLOG-F	0.6885	24.59	0.2705	0.3669	0.4308	0.7240
mediamill	0.5086	68.57	0.4181	0.3421	0.5491	0.5845
medical	0.5612	8.08	0.2126	0.5422	0.4058	0.8070
Music	0.2667	2.10	0.2125	0.7806	0.8026	0.8035
OHSUMED-F	0.6511	9.63	0.3182	0.4043	0.5875	0.6315
PlantGO	0.4082	2.20	0.2049	0.6945	0.7832	0.7897
PlantPseAAC	0.6531	4.05	0.3308	0.4826	0.7050	0.6423
rcv1subset1	0.8150	62.07	0.3970	0.1803	0.4757	0.5547
REUTERS-K500-EX2	0.7883	36.65	0.2648	0.2840	0.4482	0.6148
scene	0.3402	0.78	0.1214	0.7842	0.8352	0.8371
sider_CDK_ECFP4	0.3662	23.41	0.4212	0.6370	0.5484	0.5705
sider_MordredDesc	0.4155	22.62	0.4094	0.6298	0.5158	0.5837
sider_RDKit_desc	0.4155	21.50	0.3407	0.6725	0.4396	0.5901
SLASHDOT-F	0.7045	6.84	0.2748	0.4257	0.4699	0.6496
Stackex_chemistry	0.9095	103.88	0.4286	0.1081	0.4757	0.5397
Stackex_chess	0.8869	143.56	0.4520	0.0927	0.2915	0.5499
Stackex_coffee	0.9130	68.65	0.3810	0.0918	0.1461	0.5913
Stackex_cooking	0.9488	247.19	0.4491	0.0567	0.4713	0.5294
Stackex_cs	0.8810	180.64	0.4441	0.0946	0.4486	0.5405
Stackex_philosophy	0.9196	142.82	0.4355	0.0943	0.3712	0.5189
tmc2007-500	0.4608	8.82	0.2475	0.5445	0.6891	0.6912
tox21_CDK_ECFP4	0.6815	5.91	0.3165	0.4425	0.5858	0.5962
tox21_RDKit_desc	0.6438	5.87	0.3085	0.4779	0.5895	0.6127
VirusGO	0.1429	0.48	0.0794	0.9209	0.7395	0.9216
VirusPseAAC	0.5714	1.95	0.3690	0.6004	0.4817	0.5994
Water-quality	0.5094	10.16	0.3813	0.5725	0.6343	0.6345
Yahoo_Arts	0.7583	12.75	0.3180	0.3273	0.5438	0.5665
Yahoo_Business	0.4875	12.45	0.1184	0.5080	0.4749	0.6542
Yahoo_Computers	0.6618	13.23	0.2888	0.4069	0.5008	0.6173
Yahoo_Education	0.8470	17.63	0.4579	0.2388	0.4516	0.5053
Yahoo_Entertainment	0.6324	7.44	0.2702	0.4582	0.5280	0.6195
Yahoo_Health	0.5592	10.75	0.3050	0.4865	0.4957	0.6665
Yahoo_Recreation	0.7046	8.05	0.3062	0.4013	0.5788	0.6252
Yahoo_Reference	0.8493	19.19	0.6011	0.2206	0.3999	0.4368
Yahoo_Science	0.8087	18.04	0.4446	0.2673	0.5180	0.5671
Yahoo_Social	0.6518	14.21	0.3305	0.4206	0.4940	0.6437
yeast	0.5083	9.34	0.3222	0.5421	0.6082	0.6012
Yelp	0.4187	2.12	0.1633	0.7009	0.7163	0.6814

Table 150: Detailed results for DL

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9109	9.19	0.4131	0.2150	0.5240	0.5214
3s-bbc1000	0.6944	2.83	0.7176	0.4660	0.5521	0.5263
3s-guardian1000	0.6452	1.97	0.3629	0.5747	0.6041	0.6371
3s-reuters1000	0.8667	2.73	0.3167	0.3756	0.4838	0.4973
bibtex	0.7649	73.91	0.3157	0.1969	0.5496	0.6445
birds	0.9487	11.18	0.1310	0.2187	0.4800	0.4565
bookmarks	0.6637	39.91	0.0815	0.3725	0.8270	0.8723
CAL500	0.7059	165.59	0.4927	0.2272	0.4462	0.5748
corel16k001	0.7763	56.44	0.0816	0.2506	0.5067	0.7849
Corel5k	0.7720	144.55	0.5863	0.2065	0.3369	0.7796
delicious	0.5395	679.33	0.1138	0.2368	0.5485	0.8353
emotions	0.6500	2.92	0.2111	0.5586	0.6472	0.5985
enron	0.8655	32.31	0.1371	0.2711	0.3660	0.6707
EukaryoteGO	0.3436	1.90	0.0398	0.7530	0.7191	0.9111
EukaryotePseAAC	0.6486	3.30	0.0280	0.5310	0.5821	0.8670
Eurlex-dc	0.7863	68.01	0.2565	0.2683	0.4420	0.7943
Eurlex-sm	0.5023	30.99	0.4342	0.4613	0.5879	0.9007
foodtruck	0.6585	4.90	0.2832	0.5208	0.4870	0.6703
genbase	0.9701	13.18	0.2711	0.1016	0.4576	0.5096
GnegativeGO	0.6071	1.63	0.5982	0.5964	0.7408	0.8135
GnegativePseAAC	0.3571	1.20	0.3304	0.7487	0.6028	0.8569
GpositivePseAAC	0.6346	1.02	0.3269	0.6250	0.5553	0.6691
HumanGO	0.5113	2.62	0.0387	0.6275	0.5762	0.7864
HumanPseAAC	0.6720	3.04	0.0818	0.5097	0.5033	0.7903
Image	0.3900	0.94	0.1154	0.7648	0.8229	0.8147
IMDB-ECC-F	0.6118	6.96	0.1664	0.4963	0.6354	0.8256
IMDB-F	0.6817	8.34	0.2109	0.4368	0.5065	0.7822
LLOG-F	0.9918	37.36	0.8436	0.0675	0.3132	0.5379
mediamill	0.1249	17.62	0.0301	0.7158	0.7156	0.9431
medical	0.9898	21.46	0.4510	0.1147	0.2833	0.5739
Music	0.5500	2.90	0.2685	0.6219	0.6117	0.6505
OHSUMED-F	0.4745	5.37	0.1963	0.5851	0.7136	0.8250
PlantGO	0.9082	5.63	0.0349	0.2784	0.4927	0.4976
PlantPseAAC	0.9286	5.19	0.0782	0.2609	0.5777	0.5597
rcv1subset1	0.6033	30.05	0.2078	0.3880	0.5931	0.8257
REUTERS-K500-EX2	0.9867	55.89	0.9379	0.0627	0.3893	0.5078
scene	0.3071	0.61	0.0985	0.8175	0.8979	0.9094
sider_CDK_ECFP4	0.1549	20.32	0.1658	0.7639	0.5579	0.7629
sider_MordredDesc	0.2113	20.94	0.1286	0.7708	0.5524	0.7520
sider_RDKit_desc	0.1549	21.49	0.2507	0.7628	0.5303	0.7165
SLASHDOT-F	0.9551	9.25	0.7003	0.2094	0.3809	0.5724
Stackex_chemistry	0.8233	54.73	0.4991	0.2206	0.4675	0.6968
Stackex_chess	0.9881	136.82	0.4483	0.0445	0.2573	0.5154
Stackex_coffee	0.9565	74.35	0.4680	0.0754	0.1420	0.5376
Stackex_cooking	0.9034	153.12	0.2626	0.1157	0.4540	0.6365
Stackex_cs	0.7316	93.42	0.3044	0.2076	0.4366	0.7130
Stackex_philosophy	0.8090	82.51	0.1811	0.2453	0.3603	0.6747
tmc2007-500	0.2413	2.94	0.0589	0.7950	0.8976	0.9437
tox21_CDK_ECFP4	0.6747	5.35	0.1090	0.4705	0.5844	0.6419
tox21_RDKit_desc	0.6575	5.64	0.2662	0.4480	0.5799	0.6105
VirusGO	0.8095	2.71	0.5556	0.4197	0.3855	0.4899
VirusPseAAC	0.6667	1.43	0.0714	0.5929	0.5339	0.7594
Water-quality	0.5472	11.11	0.5112	0.5215	0.5272	0.5502
Yahoo_Arts	0.5167	5.25	0.2891	0.5798	0.5981	0.7985
Yahoo_Business	0.1248	2.32	0.1342	0.8843	0.5653	0.9360
Yahoo_Computers	0.3671	3.74	0.2706	0.6993	0.6267	0.8820
Yahoo_Education	0.5511	3.65	0.3020	0.5885	0.5914	0.8907
Yahoo_Entertainment	0.3331	2.64	0.0690	0.7308	0.7450	0.8828
Yahoo_Health	0.3181	3.19	0.1604	0.7353	0.5369	0.9091
Yahoo_Recreation	0.4209	3.60	0.2943	0.6596	0.7470	0.8462
Yahoo_Reference	0.4608	3.93	0.1281	0.6270	0.5285	0.8642
Yahoo_Science	0.6112	8.11	0.0920	0.4788	0.5727	0.7675
Yahoo_Social	0.3614	3.81	0.1239	0.7216	0.6682	0.9071
yeast	0.3140	7.70	0.3125	0.6545	0.5637	0.7511
Yelp	0.2144	1.40	0.2074	0.8503	0.7996	0.8549

Table 151: Detailed results for BPMLL

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9052	9.26	0.5117	0.2164	0.5743	0.5711
3s-bbc1000	0.5000	1.53	0.3264	0.6650	0.7459	0.7383
3s-guardian1000	0.4839	1.58	0.3306	0.6672	0.6571	0.6607
3s-reuters1000	0.7333	2.17	0.5333	0.4889	0.6184	0.5703
bibtex	0.3932	27.59	0.0976	0.5682	0.8942	0.9024
birds	0.3846	3.77	0.0764	0.6807	0.7611	0.8822
bookmarks	0.7111	71.30	0.3803	0.3306	0.8959	0.8991
CAL500	0.5686	151.25	0.5012	0.3111	0.5307	0.7275
corel16k001	0.7473	56.85	0.2066	0.2572	0.7137	0.7963
Corel5k	0.6860	167.78	0.3128	0.2482	0.4790	0.7904
delicious	0.6072	614.34	0.1676	0.2739	0.7307	0.8274
emotions	0.3333	2.02	0.1722	0.7625	0.8308	0.8374
enron	0.2866	17.50	0.1097	0.6388	0.5774	0.8460
EukaryoteGO	0.3282	2.58	0.1849	0.7505	0.9606	0.9475
EukaryotePseAAC	0.5689	4.65	0.3145	0.5522	0.8862	0.9199
Eurlex-dc	0.1878	17.87	0.0556	0.8258	0.7004	0.9547
Eurlex-sm	0.1230	13.42	0.0663	0.8491	0.7775	0.9646
foodtruck	0.4390	3.68	0.3233	0.6416	0.5026	0.7030
genbase	0.0000	0.24	0.0000	0.9963	0.6665	0.9999
GnegativeGO	0.0429	0.12	0.0214	0.9744	0.8667	0.9934
GnegativePseAAC	0.2429	0.70	0.1125	0.8432	0.7348	0.9326
GpositivePseAAC	0.2692	0.38	0.0962	0.8478	0.8971	0.9101
HumanGO	0.1961	0.82	0.0265	0.8744	0.9428	0.9532
HumanPseAAC	0.5916	2.99	0.1023	0.5707	0.6715	0.7872
Image	0.2650	0.71	0.0854	0.8390	0.8833	0.8829
IMDB-ECC-F	0.7599	12.46	0.5923	0.3305	0.8668	0.8841
IMDB-F	0.8143	14.15	0.7289	0.2742	0.8981	0.9101
LLOG-F	0.6393	20.56	0.2127	0.4280	0.4553	0.7943
mediamill	0.1221	12.80	0.0155	0.7709	0.8874	0.9629
medical	0.1224	1.38	0.0179	0.9048	0.5075	0.9666
Music	0.2333	2.07	0.1611	0.8085	0.8356	0.8434
OHSUMED-F	0.3676	4.21	0.1219	0.6747	0.8471	0.8882
PlantGO	0.6939	4.05	0.3078	0.4658	0.6473	0.6753
PlantPseAAC	0.6429	2.54	0.2134	0.5503	0.7491	0.8042
rcv1subset1	0.5317	33.55	0.2610	0.4771	0.8214	0.8859
REUTERS-K500-EX2	0.9850	60.30	0.9699	0.0621	0.7662	0.9735
scene	0.2199	0.56	0.0913	0.8623	0.9448	0.9492
sider_CDK_ECFP4	0.2606	19.71	0.1832	0.8012	0.7167	0.8279
sider_MordredDesc	0.2817	20.38	0.2463	0.7716	0.7263	0.8293
sider_RDKit_desc	0.3169	20.09	0.2389	0.7600	0.6783	0.7841
SLASHDOT-F	0.7282	7.04	0.3015	0.4008	0.4935	0.6944
Stackex_chemistry	0.8736	96.03	0.4818	0.1375	0.5381	0.6111
Stackex_chess	0.5952	73.95	0.1025	0.3778	0.4044	0.7830
Stackex_coffee	0.5652	34.65	0.1446	0.3989	0.1629	0.6731
Stackex_cooking	0.5681	99.63	0.1453	0.3788	0.7296	0.8344
Stackex_cs	0.7511	147.85	0.4246	0.2109	0.5658	0.6488
Stackex_philosophy	0.5653	75.22	0.1891	0.4030	0.5627	0.7873
tmc2007-500	0.3832	5.83	0.2966	0.6565	0.9491	0.9603
tox21_CDK_ECFP4	0.5137	4.56	0.2110	0.5924	0.7161	0.7506
tox21_RDKit_desc	0.5651	4.78	0.2664	0.5462	0.7003	0.7424
VirusGO	0.0476	0.48	0.0556	0.9563	0.7358	0.9430
VirusPseAAC	0.3810	1.00	0.0119	0.7476	0.6548	0.8531
Water-quality	0.2736	8.81	0.2538	0.7048	0.7210	0.7518
Yahoo_Arts	0.5033	7.15	0.2761	0.5725	0.7176	0.8174
Yahoo_Business	0.1061	2.79	0.0882	0.8777	0.7223	0.9284
Yahoo_Computers	0.3598	5.25	0.2591	0.6872	0.7387	0.8828
Yahoo_Education	0.5062	6.12	0.2694	0.5894	0.6986	0.8371
Yahoo_Entertainment	0.3370	3.06	0.1387	0.7247	0.8203	0.8783
Yahoo_Health	0.2942	4.37	0.1758	0.7489	0.6332	0.8842
Yahoo_Recreation	0.4178	4.11	0.2137	0.6615	0.8366	0.8677
Yahoo_Reference	0.3699	3.97	0.1405	0.7002	0.6215	0.8728
Yahoo_Science	0.4697	8.14	0.1631	0.5888	0.7244	0.8170
Yahoo_Social	0.2888	4.35	0.1171	0.7561	0.7325	0.8959
yeast	0.4174	7.08	0.2773	0.6704	0.7094	0.7969
Yelp	0.0927	1.16	0.0874	0.9236	0.8956	0.9258

Table 152: Detailed results for MLARAM

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.9197	9.14	0.6350	0.2096	0.5748	0.5716
3s-bbc1000	0.6389	2.39	0.5741	0.5444	0.8747	0.8400
3s-guardian1000	0.5161	2.06	0.5000	0.6099	0.8642	0.8706
3s-reuters1000	0.9333	2.77	0.8333	0.3528	0.8009	0.7540
bibtex	0.4716	49.80	0.3100	0.4738	0.9481	0.9540
birds	0.6667	6.92	0.3132	0.4525	0.7383	0.8357
bookmarks	0.7677	61.17	0.1512	0.2838	0.7451	0.7945
CAL500	0.5490	148.16	0.5782	0.3692	0.6937	0.8379
corel16k001	0.7938	96.39	0.7001	0.2080	0.9706	0.9717
Corel5k	0.7300	145.45	0.7301	0.2483	0.6668	0.9875
delicious	0.5295	651.91	0.1579	0.2683	0.6872	0.8489
emotions	0.6667	2.78	0.6847	0.5563	0.8130	0.7322
enron	0.4678	16.61	0.1475	0.5733	0.6486	0.8927
EukaryoteGO	0.4813	3.48	0.2269	0.6288	0.9172	0.9426
EukaryotePseAAC	0.6512	3.70	0.1348	0.5241	0.8427	0.8941
Eurlex-dc	0.8976	63.59	0.2049	0.2023	0.4839	0.8547
Eurlex-sm	0.7566	38.55	0.6024	0.2584	0.5030	0.8754
foodtruck	0.3902	3.76	0.4244	0.7130	0.8054	0.9239
genbase	0.0149	0.22	0.0075	0.9938	0.6667	0.9991
GnegativeGO	0.3214	0.78	0.1286	0.8038	0.8387	0.9563
GnegativePseAAC	0.2214	0.60	0.0821	0.8524	0.8282	0.9695
GpositivePseAAC	0.4808	0.92	0.2692	0.6987	0.8337	0.8235
HumanGO	0.3087	1.75	0.1734	0.7770	0.9475	0.9581
HumanPseAAC	0.6206	3.21	0.2599	0.5364	0.8692	0.8747
Image	0.5700	1.41	0.1696	0.6418	0.7707	0.7529
IMDB-ECC-F	0.6353	7.26	0.1704	0.4773	0.6257	0.8133
IMDB-F	0.6454	7.96	0.2039	0.4595	0.5069	0.7920
LLOG-F	0.8115	25.61	0.6346	0.2565	0.5520	0.9424
mediamill	0.1701	20.99	0.0545	0.6661	0.7694	0.9275
medical	0.2551	9.71	0.2296	0.7374	0.5453	0.9916
Music	0.6333	3.02	0.6185	0.5644	0.8466	0.7393
OHSUMED-F	0.4889	7.16	0.3204	0.5548	0.8732	0.8926
PlantGO	0.7857	3.23	0.3622	0.4401	0.7299	0.7761
PlantPseAAC	0.6122	2.95	0.3912	0.5399	0.8703	0.8821
rcv1subset1	0.7150	32.94	0.3291	0.3525	0.8814	0.9275
REUTERS-K500-EX2	0.9833	53.05	0.9054	0.0664	0.5135	0.6400
scene	0.5394	1.72	0.3600	0.6280	0.8871	0.8681
sider_CDK_ECFP4	0.2676	20.43	0.3428	0.7720	0.5808	0.7060
sider_MordredDesc	0.1127	20.45	0.1325	0.7872	0.7165	0.7626
sider_RDKit_desc	0.4437	23.13	0.4382	0.7031	0.9041	0.8780
SLASHDOT-F	0.7282	9.66	0.6282	0.3545	0.6998	0.9304
Stackex_chemistry	0.8147	73.97	0.6028	0.2127	0.7059	0.8434
Stackex_chess	0.7679	114.16	0.5116	0.2152	0.4751	0.9170
Stackex_coffee	0.8696	72.96	0.6087	0.1938	0.2531	0.9671
Stackex_cooking	0.8599	191.97	0.5023	0.1344	0.7874	0.8783
Stackex_cs	0.7262	143.39	0.5939	0.1920	0.7741	0.8994
Stackex_philosophy	0.7789	104.62	0.4925	0.2420	0.6760	0.9337
tmc2007-500	0.2895	4.96	0.2311	0.7287	0.9422	0.9566
tox21_CDK_ECFP4	0.4966	4.68	0.3098	0.5914	0.8062	0.8257
tox21_RDKit_desc	0.6781	7.63	0.7091	0.3713	1.0000	0.8211
VirusGO	0.3810	1.05	0.1508	0.7643	0.6844	0.8859
VirusPseAAC	0.5238	1.48	0.3095	0.6508	0.8048	0.9295
Water-quality	0.7547	10.73	0.7568	0.4906	0.8354	0.7724
Yahoo_Arts	0.7543	6.47	0.4336	0.4327	0.5765	0.7765
Yahoo_Business	0.1319	3.52	0.1949	0.8540	0.7264	0.9502
Yahoo_Computers	0.4827	4.65	0.4396	0.6036	0.5867	0.8551
Yahoo_Education	0.6891	4.85	0.3973	0.4725	0.5172	0.8549
Yahoo_Entertainment	0.7243	4.25	0.0993	0.4625	0.5402	0.8014
Yahoo_Health	0.5103	4.25	0.3645	0.6055	0.5213	0.8865
Yahoo_Recreation	0.6836	5.82	0.6027	0.4684	0.8612	0.8691
Yahoo_Reference	0.4782	5.50	0.3021	0.6029	0.7247	0.9376
Yahoo_Science	0.7714	10.50	0.2913	0.3724	0.7105	0.8252
Yahoo_Social	0.5017	6.72	0.3334	0.5934	0.8345	0.9402
yeast	0.3678	6.38	0.3382	0.7087	0.8422	0.8877
Yelp	0.1206	1.27	0.1221	0.8997	0.8504	0.8917

Table 153: Detailed results for BAGGING(BR(DT))

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2477	1.30	0.1079	0.8252	0.9672	0.9688
3s-bbc1000	0.5278	1.78	0.5000	0.6389	0.7457	0.7198
3s-guardian1000	0.5806	2.10	0.4355	0.5790	0.6601	0.6899
3s-reuters1000	0.8000	2.13	0.6833	0.4675	0.6108	0.5921
bibtex	0.3514	32.89	0.2015	0.5966	0.9553	0.9669
birds	0.3333	4.23	0.1521	0.6818	0.7884	0.8877
bookmarks	0.5706	74.00	0.4728	0.4170	0.9683	0.9713
CAL500	0.1569	141.51	0.4146	0.4863	0.5444	0.8061
corel16k001	0.7879	95.74	0.6232	0.1984	0.9324	0.9376
Corel5k	0.6820	137.94	0.5138	0.2548	0.6352	0.9609
delicious	0.4425	838.14	0.6370	0.2549	0.9603	0.9693
emotions	0.2667	1.67	0.1833	0.8075	0.8535	0.8758
enron	0.1696	15.09	0.1408	0.7093	0.7119	0.9294
EukaryoteGO	0.1737	0.45	0.0077	0.9024	0.9928	0.9949
EukaryotePseAAC	0.5701	2.60	0.0605	0.6106	0.8126	0.9141
Eurlex-dc	0.1655	14.89	0.0643	0.8544	0.7573	0.9984
Eurlex-sm	0.0925	9.37	0.0688	0.8805	0.8251	0.9965
foodtruck	0.2927	3.02	0.3068	0.7561	0.6466	0.8137
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0214	0.09	0.0143	0.9863	0.8739	0.9994
GnegativePseAAC	0.2571	0.69	0.1429	0.8353	0.7954	0.9468
GpositivePseAAC	0.2692	0.46	0.1346	0.8381	0.8646	0.8782
HumanGO	0.1929	0.64	0.0344	0.8844	0.9813	0.9876
HumanPseAAC	0.5820	2.29	0.0865	0.6072	0.7628	0.8622
Image	0.2100	0.71	0.0675	0.8570	0.8923	0.8945
IMDB-ECC-F	0.8311	14.36	0.8372	0.2487	0.9557	0.9592
IMDB-F	0.8291	14.83	0.8483	0.2455	0.9577	0.9614
LLOG-F	0.6148	12.23	0.2362	0.4784	0.5234	0.9201
mediamill	0.0931	15.84	0.0359	0.7965	0.9220	0.9686
medical	0.1122	1.61	0.0434	0.9174	0.5517	0.9969
Music	0.2500	1.90	0.1917	0.8042	0.8478	0.8626
OHSUMED-F	0.3094	3.78	0.1178	0.7287	0.8833	0.9170
PlantGO	0.2041	0.59	0.0408	0.8789	0.9854	0.9861
PlantPseAAC	0.6327	2.19	0.1480	0.5761	0.7294	0.8285
rcv1subset1	0.4033	17.76	0.1427	0.5997	0.9002	0.9660
REUTERS-K500-EX2	0.4100	12.91	0.1915	0.6525	0.7615	0.9795
scene	0.1950	0.41	0.0612	0.8862	0.9502	0.9598
sider_CDK_ECFP4	0.1127	18.59	0.1050	0.8460	0.5901	0.8009
sider_MordredDesc	0.0704	19.26	0.1197	0.8382	0.5720	0.7960
sider_RDKit_desc	0.0986	19.11	0.1124	0.8444	0.5864	0.7999
SLASHDOT-F	0.3852	3.40	0.1763	0.6952	0.7198	0.9553
Stackex_chemistry	0.6106	57.19	0.3747	0.3816	0.8774	0.9629
Stackex_chess	0.5179	71.82	0.3308	0.4316	0.5304	0.9767
Stackex_coffee	0.6957	60.96	0.3976	0.3315	0.2487	0.9649
Stackex_cooking	0.4628	133.66	0.3576	0.4547	0.9025	0.9828
Stackex_cs	0.4264	80.93	0.3021	0.5001	0.8700	0.9786
Stackex_philosophy	0.4698	74.25	0.3284	0.4661	0.7193	0.9722
tmc2007-500	0.2329	2.74	0.0699	0.8090	0.9321	0.9553
tox21_CDK_ECFP4	0.4692	4.16	0.1558	0.6175	0.7196	0.7760
tox21_RDKit_desc	0.4452	3.98	0.1258	0.6399	0.7261	0.7883
VirusGO	0.0476	0.33	0.0476	0.9643	0.8212	0.9905
VirusPseAAC	0.2857	0.76	0.0000	0.8071	0.6370	0.9126
Water-quality	0.1792	8.56	0.2388	0.7393	0.7141	0.7496
Yahoo_Arts	0.3832	7.57	0.3405	0.6265	0.9031	0.9452
Yahoo_Business	0.0838	2.25	0.1167	0.9059	0.8326	0.9849
Yahoo_Computers	0.3566	4.79	0.3748	0.6797	0.8672	0.9670
Yahoo_Education	0.4613	6.38	0.4040	0.6115	0.8756	0.9687
Yahoo_Entertainment	0.3645	3.07	0.3446	0.7042	0.9675	0.9706
Yahoo_Health	0.2769	4.15	0.1991	0.7676	0.8160	0.9786
Yahoo_Recreation	0.3320	4.26	0.2885	0.7114	0.9690	0.9711
Yahoo_Reference	0.3736	3.14	0.3073	0.7051	0.7875	0.9745
Yahoo_Science	0.4059	8.67	0.3338	0.6236	0.9359	0.9649
Yahoo_Social	0.3069	5.11	0.2794	0.7163	0.8997	0.9828
yeast	0.2025	6.21	0.2002	0.7782	0.7250	0.8524
Yelp	0.0778	1.08	0.0799	0.9377	0.9104	0.9394

Table 154: Detailed results for Discrete AdaBoost.MH

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2642	1.70	0.0951	0.8044	0.9540	0.9218
3s-bbc1000	0.7778	2.11	0.4051	0.5075	0.6476	0.6512
3s-guardian1000	0.5806	1.94	0.5645	0.5839	0.6359	0.7127
3s-reuters1000	0.8333	2.37	0.7333	0.4261	0.5875	0.5543
bibtex	0.3932	41.05	0.1595	0.4740	0.9066	0.8564
birds	0.2821	3.51	0.1189	0.7248	0.7959	0.8957
bookmarks	0.6270	68.09	0.2427	0.3669	0.7581	0.7438
CAL500	0.1765	137.29	0.4151	0.4683	0.5180	0.8008
corel16k001	0.9673	54.99	0.0681	0.1127	0.7134	0.7869
Corel5k	0.7380	135.21	0.4828	0.2208	0.6246	0.9491
delicious	0.5277	828.51	0.4343	0.1994	0.7212	0.6694
emotions	0.2333	1.62	0.1500	0.8250	0.8491	0.8779
enron	0.6959	23.75	0.2034	0.3350	0.5562	0.7841
EukaryoteGO	0.2960	0.96	0.0026	0.8085	0.9793	0.9684
EukaryotePseAAC	0.5405	2.36	0.0311	0.6261	0.8177	0.9156
Eurlex-dc	0.1790	15.17	0.0527	0.8273	0.7542	0.9916
Eurlex-sm	0.1054	7.87	0.0720	0.8525	0.8188	0.9868
foodtruck	0.2927	2.88	0.2322	0.7639	0.6869	0.8285
genbase	0.0000	0.21	0.0000	1.0000	0.6356	0.9987
GnegativeGO	0.0214	0.13	0.0161	0.9836	0.8655	0.9916
GnegativePseAAC	0.2286	0.63	0.1232	0.8532	0.8025	0.9504
GpositivePseAAC	0.2885	0.52	0.1731	0.8221	0.8744	0.8789
HumanGO	0.2058	0.66	0.0265	0.8746	0.9645	0.9711
HumanPseAAC	0.5756	2.22	0.0753	0.6045	0.7342	0.8598
Image	0.1900	0.68	0.0542	0.8667	0.9021	0.9048
IMDB-ECC-F	0.9195	13.87	0.6733	0.2245	0.8760	0.8482
IMDB-F	0.9037	14.47	0.6458	0.2237	0.8691	0.8318
LLOG-F	0.6311	11.33	0.1979	0.4566	0.5098	0.9072
mediamill	0.1002	16.14	0.0244	0.7622	0.9020	0.9568
medical	0.1429	2.02	0.0485	0.8674	0.5433	0.9871
Music	0.2500	1.98	0.2389	0.7899	0.8482	0.8661
OHSUMED-F	0.3195	3.54	0.1099	0.7250	0.8679	0.9097
PlantGO	0.3367	1.59	0.2041	0.7487	0.9161	0.8902
PlantPseAAC	0.5918	2.16	0.1548	0.5936	0.7614	0.8345
rcv1subset1	0.5250	20.89	0.1175	0.4613	0.8816	0.9163
REUTERS-K500-EX2	0.5267	12.32	0.1435	0.5539	0.7509	0.9583
scene	0.1950	0.41	0.0571	0.8843	0.9573	0.9528
sider_CDK_ECFP4	0.1056	19.75	0.1397	0.8289	0.5847	0.7838
sider_MordredDesc	0.0915	19.39	0.1251	0.8417	0.5798	0.7969
sider_RDKit_desc	0.0845	19.52	0.1188	0.8326	0.5864	0.7911
SLASHDOT-F	0.3905	2.97	0.0796	0.6762	0.6990	0.9164
Stackex_chemistry	0.6724	47.84	0.2547	0.3276	0.8455	0.9199
Stackex_chess	0.6250	64.73	0.2648	0.3966	0.5225	0.9675
Stackex_coffee	0.7826	54.43	0.3524	0.3273	0.2500	0.9669
Stackex_cooking	0.5604	116.73	0.3545	0.3544	0.8773	0.9474
Stackex_cs	0.5314	67.61	0.2832	0.4121	0.8560	0.9504
Stackex_philosophy	0.5553	60.18	0.2203	0.4025	0.7049	0.9536
tmc2007-500	0.3441	4.77	0.1163	0.6853	0.8054	0.8791
tox21_CDK_ECFP4	0.5651	4.53	0.0694	0.5552	0.6897	0.7229
tox21_RDKit_desc	0.5514	4.76	0.1012	0.5492	0.6630	0.7181
VirusGO	0.0952	0.71	0.0595	0.9087	0.8122	0.9251
VirusPseAAC	0.3810	0.71	0.0119	0.7794	0.6677	0.8974
Water-quality	0.2075	8.92	0.2590	0.7228	0.7079	0.7394
Yahoo_Arts	0.4219	7.08	0.3246	0.6170	0.8931	0.9359
Yahoo_Business	0.0945	2.29	0.1186	0.8983	0.8292	0.9834
Yahoo_Computers	0.3863	4.54	0.4044	0.6731	0.8588	0.9616
Yahoo_Education	0.4730	5.89	0.3408	0.6157	0.8599	0.9571
Yahoo_Entertainment	0.3511	2.98	0.2865	0.7184	0.9564	0.9625
Yahoo_Health	0.2584	3.68	0.1785	0.7854	0.8105	0.9758
Yahoo_Recreation	0.3297	3.79	0.2484	0.7215	0.9567	0.9525
Yahoo_Reference	0.3213	2.93	0.1673	0.7549	0.7817	0.9760
Yahoo_Science	0.4323	8.88	0.3316	0.6091	0.9295	0.9589
Yahoo_Social	0.2541	3.95	0.1652	0.7846	0.8967	0.9828
yeast	0.2107	6.25	0.1983	0.7761	0.7322	0.8518
Yelp	0.2443	1.47	0.1019	0.8337	0.8346	0.7955

Table 155: Detailed results for Real AdaBoost.MH

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2642	1.70	0.0951	0.8044	0.9540	0.9218
3s-bbc1000	0.6111	1.94	0.4421	0.5912	0.6230	0.6005
3s-guardian1000	0.6774	1.94	0.4597	0.5613	0.6415	0.7020
3s-reuters1000	0.8333	2.23	0.8000	0.4275	0.6640	0.5764
bibtex	0.3851	40.15	0.1491	0.5034	0.9120	0.8609
birds	0.3333	3.79	0.0819	0.7042	0.7610	0.8784
bookmarks	0.6618	48.44	0.0858	0.3708	0.8033	0.8258
CAL500	0.2549	137.41	0.4475	0.4593	0.5218	0.8028
corel16k001	0.9673	54.99	0.0681	0.1127	0.7134	0.7869
Corel5k	0.7360	129.35	0.4567	0.2282	0.6124	0.9392
delicious	0.7321	652.27	0.2192	0.1828	0.7104	0.8081
emotions	0.2833	1.63	0.1431	0.8044	0.8634	0.8790
enron	0.3275	16.21	0.1331	0.6200	0.5993	0.8762
EukaryoteGO	0.1789	0.62	0.0019	0.8900	0.9840	0.9830
EukaryotePseAAC	0.5495	2.42	0.0249	0.6189	0.8087	0.9104
Eurlex-dc	0.1723	14.94	0.0446	0.8332	0.7537	0.9904
Eurlex-sm	0.1054	7.87	0.0720	0.8525	0.8188	0.9868
foodtruck	0.2927	2.76	0.2351	0.7655	0.6821	0.8285
genbase	0.0000	0.21	0.0000	1.0000	0.6352	0.9987
GnegativeGO	0.0214	0.11	0.0107	0.9851	0.8671	0.9920
GnegativePseAAC	0.2500	0.68	0.1339	0.8382	0.8098	0.9436
GpositivePseAAC	0.3462	0.56	0.1923	0.7965	0.8555	0.8819
HumanGO	0.1608	0.61	0.0216	0.8965	0.9591	0.9752
HumanPseAAC	0.5820	2.27	0.0692	0.5943	0.7151	0.8552
Image	0.2050	0.67	0.0608	0.8662	0.9018	0.9037
IMDB-ECC-F	0.8515	11.82	0.4519	0.2660	0.6207	0.6791
IMDB-F	0.8911	13.95	0.5989	0.2136	0.6037	0.6270
LLOG-F	0.6066	12.78	0.2162	0.4810	0.4842	0.8909
mediamill	0.0962	15.19	0.0207	0.7784	0.9038	0.9587
medical	0.1429	1.58	0.0408	0.8883	0.5464	0.9899
Music	0.2167	1.85	0.2306	0.8202	0.8661	0.8772
OHSUMED-F	0.3037	3.58	0.1060	0.7282	0.8613	0.9063
PlantGO	0.2143	0.60	0.0204	0.8730	0.9634	0.9612
PlantPseAAC	0.6224	2.34	0.1862	0.5709	0.7087	0.8149
rcv1subset1	0.4500	16.06	0.1087	0.5599	0.8674	0.9253
REUTERS-K500-EX2	0.4350	11.21	0.1949	0.6124	0.7210	0.9219
scene	0.1992	0.49	0.0633	0.8732	0.9457	0.9468
sider_CDK_ECFP4	0.0775	19.45	0.1323	0.8390	0.5919	0.7959
sider_MordredDesc	0.0775	19.42	0.1244	0.8372	0.5680	0.7940
sider_RDKit_desc	0.0845	19.77	0.1331	0.8366	0.5820	0.7934
SLASHDOT-F	0.4222	2.89	0.0407	0.6550	0.6809	0.9003
Stackex_chemistry	0.6724	46.30	0.2554	0.3245	0.8374	0.9019
Stackex_chess	0.6190	62.54	0.2468	0.3436	0.5139	0.9531
Stackex_coffee	0.8261	56.13	0.3137	0.3005	0.2458	0.9491
Stackex_cooking	0.5604	116.73	0.3545	0.3544	0.8773	0.9474
Stackex_cs	0.4957	66.02	0.2865	0.4215	0.8511	0.9454
Stackex_philosophy	0.5377	54.90	0.1853	0.4158	0.6976	0.9465
tmc2007-500	0.2843	3.61	0.0863	0.7561	0.8627	0.9175
tox21_CDK_ECFP4	0.5274	4.53	0.2011	0.5861	0.6919	0.7407
tox21_RDKit_desc	0.4760	4.52	0.0914	0.5955	0.6664	0.7333
VirusGO	0.0476	0.48	0.0476	0.9524	0.8014	0.9612
VirusPseAAC	0.3333	0.81	0.0000	0.7833	0.6422	0.9000
Water-quality	0.2264	8.82	0.2564	0.7252	0.6952	0.7328
Yahoo_Arts	0.5848	5.01	0.4402	0.5529	0.7492	0.8490
Yahoo_Business	0.1185	1.88	0.1300	0.8872	0.7311	0.9594
Yahoo_Computers	0.4827	3.19	0.1938	0.6635	0.7406	0.9099
Yahoo_Education	0.5611	3.38	0.4956	0.5849	0.7836	0.9194
Yahoo_Entertainment	0.4446	2.76	0.0796	0.6574	0.8486	0.8870
Yahoo_Health	0.3648	2.71	0.2031	0.7352	0.7398	0.9482
Yahoo_Recreation	0.5019	3.63	0.4692	0.6133	0.8029	0.8583
Yahoo_Reference	0.4645	2.43	0.0802	0.6732	0.7207	0.9399
Yahoo_Science	0.5863	5.08	0.0778	0.5576	0.8299	0.8966
Yahoo_Social	0.3573	2.51	0.0713	0.7440	0.7702	0.9415
yeast	0.2190	6.24	0.2181	0.7664	0.7183	0.8461
Yelp	0.0887	1.13	0.0959	0.9277	0.8705	0.9054

Table 156: Detailed results for BPMLL(CV)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5161	1.54	0.0842	0.6683	0.9255	0.9208
3s-bbc1000	0.8333	3.06	0.6637	0.3979	0.6469	0.6617
3s-guardian1000	0.6452	1.81	0.3153	0.5874	0.6439	0.6584
3s-reuters1000	0.7333	1.73	0.3483	0.5356	0.6676	0.6560
bibtex	0.6392	28.26	0.0978	0.4461	0.8837	0.8962
birds	0.4615	4.69	0.1573	0.6158	0.7400	0.8403
bookmarks	0.8243	62.28	0.2489	0.2342	0.6910	0.7086
CAL500	0.2549	132.22	0.2024	0.4919	0.5212	0.8032
corel16k001	0.7291	48.39	0.1618	0.2966	0.7127	0.8361
Corel5k	0.7380	133.73	0.1569	0.2597	0.4696	0.8471
delicious	0.4363	439.77	0.0965	0.3404	0.7979	0.9071
emotions	0.2500	1.63	0.1381	0.8200	0.8556	0.8706
enron	0.1988	16.25	0.1107	0.6800	0.6261	0.8753
EukaryoteGO	0.3537	1.40	0.0555	0.7998	0.8485	0.9732
EukaryotePseAAC	0.6190	2.96	0.1255	0.5707	0.7336	0.8783
Eurlex-dc	0.9940	86.94	0.7611	0.0787	0.6789	0.9527
Eurlex-sm	0.7249	44.48	0.6834	0.2923	0.7761	0.9396
foodtruck	0.3171	3.37	0.1427	0.7330	0.6196	0.7786
genbase	0.8507	7.67	0.5807	0.3266	0.6206	0.8230
GnegativeGO	0.1143	0.34	0.0369	0.9272	0.8414	0.9607
GnegativePseAAC	0.2643	0.76	0.0973	0.8273	0.7204	0.9213
GpositivePseAAC	0.2500	0.35	0.1154	0.8606	0.8840	0.9116
HumanGO	0.6827	2.64	0.2868	0.5343	1.0000	1.0000
HumanPseAAC	0.6270	3.26	0.2210	0.5529	0.6422	0.7828
Image	0.4050	1.05	0.2742	0.7444	0.8317	0.8251
IMDB-ECC-F	0.8073	10.22	0.2683	0.3503	0.5662	0.7098
IMDB-F	0.8707	13.55	0.6970	0.2402	0.7604	0.8001
LLOG-F	0.6475	22.75	0.2518	0.4055	0.4363	0.7406
mediamill	0.1914	16.01	0.0439	0.6995	0.7581	0.9460
medical	0.2449	2.52	0.0394	0.8045	0.5129	0.9565
Music	0.2333	1.88	0.1607	0.8209	0.8214	0.8446
OHSUMED-F	0.4551	4.51	0.1281	0.6192	0.8115	0.8670
PlantGO	0.5429	2.22	0.2900	0.6342	0.9322	0.9338
PlantPseAAC	0.6327	2.77	0.2278	0.5470	0.7177	0.7719
rcv1subset1	0.5862	25.70	0.1310	0.4491	0.7517	0.8813
REUTERS-K500-EX2	0.5017	9.18	0.0615	0.6097	0.6956	0.9325
scene	0.2573	0.50	0.0789	0.8523	0.9268	0.9216
sider_CDK_ECFP4	0.1690	20.78	0.1848	0.7980	0.6257	0.7736
sider_MordredDesc	0.1831	20.23	0.1798	0.7916	0.6049	0.7769
sider_RDKit_desc	0.1831	19.61	0.1344	0.8278	0.5982	0.8134
SLASHDOT-F	0.5330	4.47	0.1750	0.5889	0.6152	0.8168
Stackex_chemistry	0.6882	36.03	0.1201	0.3649	0.7331	0.8682
Stackex_chess	0.5536	62.58	0.1474	0.3957	0.4277	0.8391
Stackex_coffee	0.9425	49.27	0.2599	0.1866	0.1991	0.8184
Stackex_cooking	0.6116	82.20	0.1141	0.3912	0.7591	0.8864
Stackex_cs	0.5076	39.45	0.0719	0.4613	0.7864	0.9304
Stackex_philosophy	0.6877	72.92	0.2016	0.3411	0.5726	0.8203
tmc2007-500	0.4297	3.34	0.1020	0.7132	0.9341	0.9385
tox21_CDK_ECFP4	0.7375	5.93	0.4732	0.4179	0.7422	0.7638
tox21_RDKit_desc	0.5845	5.63	0.4098	0.5100	0.6639	0.6572
VirusGO	0.3537	0.72	0.0157	0.8547	0.7555	0.9204
VirusPseAAC	0.6511	1.33	0.1352	0.6262	0.6640	0.8240
Water-quality	0.2561	9.24	0.2796	0.6706	0.6359	0.6525
Yahoo_Arts	0.7295	8.11	0.4924	0.3897	0.7029	0.8316
Yahoo_Business	0.2396	5.38	0.0986	0.7904	0.6647	0.8723
Yahoo_Computers	0.4358	6.43	0.3896	0.6052	0.7312	0.8673
Yahoo_Education	0.7556	7.20	0.6718	0.3881	0.6577	0.8415
Yahoo_Entertainment	0.6296	4.42	0.2890	0.5653	0.7878	0.8871
Yahoo_Health	0.5878	6.56	0.5174	0.6070	0.6160	0.8515
Yahoo_Recreation	0.5871	5.64	0.4331	0.5288	0.8378	0.7992
Yahoo_Reference	0.4494	5.17	0.1293	0.6328	0.6220	0.8536
Yahoo_Science	0.7581	10.79	0.3612	0.3888	0.7796	0.7975
Yahoo_Social	0.6760	6.42	0.2037	0.5557	0.6380	0.8613
yeast	0.1984	6.91	0.2123	0.7696	0.6923	0.8323
Yelp	0.3222	1.86	0.4571	0.7887	0.8110	0.8148

Table 157: Detailed results for IBLR-ML+(CV)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.2719	1.02	0.0725	0.8404	0.9494	0.9512
3s-bbc1000	0.4722	1.64	0.2530	0.6660	0.7135	0.7136
3s-guardian1000	0.6129	2.26	0.3831	0.5608	0.6139	0.6076
3s-reuters1000	0.7000	1.63	0.3158	0.5442	0.7052	0.6848
bibtex	0.5581	43.88	0.1750	0.3608	0.8090	0.8034
birds	0.3590	4.79	0.1528	0.6460	0.7338	0.8548
bookmarks	0.6976	51.01	0.1741	0.3279	0.6517	0.7529
CAL500	0.1176	134.76	0.1890	0.4981	0.5331	0.8135
corel16k001	0.6935	43.92	0.1465	0.3045	0.6887	0.8456
Corel5k	0.6860	95.29	0.1084	0.2595	0.4887	0.8898
delicious	0.3380	497.87	0.0829	0.3910	0.7554	0.9172
emotions	0.3000	1.67	0.1417	0.8004	0.8590	0.8777
enron	0.2047	12.80	0.0836	0.6992	0.5028	0.8743
EukaryoteGO	0.2345	0.82	0.0286	0.8463	0.8012	0.9551
EukaryotePseAAC	0.5367	2.40	0.0993	0.6242	0.7729	0.9082
Eurlex-dc	0.2716	14.87	0.0113	0.7761	0.7338	0.9610
Eurlex-sm	0.1228	18.37	0.0518	0.8454	0.7820	0.9266
foodtruck	0.2683	2.80	0.1213	0.7653	0.6252	0.8073
genbase	0.0000	0.21	0.0000	1.0000	0.6667	0.9999
GnegativeGO	0.0429	0.11	0.0077	0.9762	0.8647	0.9888
GnegativePseAAC	0.2214	0.54	0.0696	0.8625	0.7779	0.9553
GpositivePseAAC	0.2308	0.37	0.1218	0.8638	0.9282	0.9246
HumanGO	0.2315	0.85	0.0473	0.8446	0.8406	0.9357
HumanPseAAC	0.5788	2.28	0.1468	0.6065	0.7139	0.8548
Image	0.2700	0.82	0.1487	0.8265	0.8551	0.8537
IMDB-ECC-F	0.6401	7.37	0.1748	0.4712	0.5636	0.7934
IMDB-F	0.6337	7.55	0.1751	0.4747	0.5555	0.7903
LLOG-F	0.6721	14.29	0.1492	0.4064	0.4256	0.8449
mediamill	0.1273	17.89	0.0507	0.7174	0.7278	0.9366
medical	0.3061	2.30	0.0352	0.7828	0.4645	0.9488
Music	0.1667	1.87	0.1428	0.8320	0.8527	0.8606
OHSUMED-F	0.5334	6.00	0.1830	0.5243	0.7197	0.8094
PlantGO	0.2917	0.64	0.0480	0.8294	0.9474	0.9469
PlantPseAAC	0.5714	2.17	0.1801	0.5971	0.7903	0.8434
rcv1subset1	0.4483	20.85	0.1112	0.5509	0.7720	0.9055
REUTERS-K500-EX2	0.4742	7.60	0.0511	0.6131	0.6597	0.9334
scene	0.2158	0.49	0.0747	0.8674	0.9366	0.9405
sider_CDK_ECFP4	0.0845	18.77	0.1111	0.8591	0.5841	0.8191
sider_MordredDesc	0.3169	20.54	0.2069	0.7501	0.5592	0.7442
sider_RDKit_desc	0.1056	19.11	0.1201	0.8482	0.5680	0.8109
SLASHDOT-F	0.6667	3.67	0.1504	0.5050	0.6188	0.8520
Stackex_chemistry	0.6960	32.52	0.1132	0.3334	0.6507	0.8477
Stackex_chess	0.5714	46.35	0.1039	0.3851	0.4000	0.8528
Stackex_coffee	0.6957	27.65	0.1251	0.3871	0.1814	0.7687
Stackex_cooking	0.6986	93.87	0.1311	0.2829	0.6519	0.8306
Stackex_cs	0.5980	50.20	0.0937	0.3636	0.6110	0.8582
Stackex_philosophy	0.6106	44.97	0.1046	0.3814	0.4860	0.8358
tmc2007-500	0.3080	3.94	0.0905	0.7240	0.7567	0.8917
tox21_CDK_ECFP4	0.4829	4.17	0.2230	0.6043	0.6758	0.7516
tox21_RDKit_desc	0.4555	4.05	0.2095	0.6298	0.6965	0.7684
VirusGO	0.0952	0.57	0.0737	0.9193	0.7069	0.9117
VirusPseAAC	0.3333	0.71	0.1202	0.7952	0.6866	0.8780
Water-quality	0.2358	8.81	0.2509	0.7160	0.6906	0.7266
Yahoo_Arts	0.5033	4.70	0.1163	0.6042	0.6135	0.8243
Yahoo_Business	0.1257	1.97	0.0316	0.8873	0.4788	0.9231
Yahoo_Computers	0.4000	3.45	0.0685	0.6835	0.6144	0.8719
Yahoo_Education	0.5669	3.45	0.0794	0.5826	0.5476	0.8760
Yahoo_Entertainment	0.4226	2.74	0.0929	0.6825	0.6813	0.8613
Yahoo_Health	0.2679	6.64	0.1032	0.7618	0.6406	0.8162
Yahoo_Recreation	0.3533	4.85	0.1832	0.7033	0.8153	0.8331
Yahoo_Reference	0.3338	5.69	0.1127	0.7198	0.6188	0.8422
Yahoo_Science	0.4536	11.78	0.2207	0.5670	0.7657	0.7393
Yahoo_Social	0.3209	8.29	0.1807	0.6996	0.7086	0.8046
yeast	0.1570	6.23	0.1579	0.7863	0.6866	0.8436
Yelp	0.1266	1.27	0.1063	0.8972	0.7675	0.8444

Table 158: Detailed results for ML-DT(CV)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.8128	7.30	0.6105	0.3242	0.8548	0.8564
3s-bbc1000	0.8611	2.64	0.4885	0.4067	0.6377	0.5814
3s-guardian1000	0.7097	2.45	0.5379	0.5054	0.5422	0.5633
3s-reuters1000	0.8667	2.80	0.6833	0.3786	0.5847	0.5087
bibtex	0.7500	56.12	0.2812	0.2311	0.7255	0.7828
birds	0.5641	6.08	0.3397	0.5196	0.7824	0.8749
bookmarks	0.7172	87.88	0.5932	0.3013	0.9367	0.9432
CAL500	0.2157	144.16	0.2862	0.4598	0.6051	0.8110
corel16k001	0.7785	57.06	0.2022	0.2499	0.8847	0.8034
Corel5k	0.7720	120.22	0.1748	0.2114	0.5311	0.8535
delicious	0.4736	616.98	0.1527	0.2652	0.7786	0.8644
emotions	0.3167	1.72	0.1864	0.7794	0.8497	0.8567
enron	0.2456	16.05	0.1339	0.6294	0.6235	0.8968
EukaryoteGO	0.2049	1.26	0.0822	0.8616	0.9808	0.9898
EukaryotePseAAC	0.6589	2.98	0.1363	0.5369	0.7139	0.8815
Eurlex-dc	0.4811	56.71	0.3057	0.5631	0.7492	0.9918
Eurlex-sm	0.3416	26.70	0.2184	0.6325	0.8084	0.9846
foodtruck	0.3659	3.56	0.3251	0.6728	0.6215	0.7858
genbase	0.0000	0.51	0.0081	0.9932	0.6588	0.9994
GnegativeGO	0.0214	0.16	0.0205	0.9803	0.8587	0.9897
GnegativePseAAC	0.3500	0.87	0.1295	0.7789	0.7776	0.9348
GpositivePseAAC	0.5000	1.00	0.4231	0.6827	0.8250	0.8513
HumanGO	0.2412	1.40	0.1409	0.8249	0.9541	0.9715
HumanPseAAC	0.6720	2.81	0.2116	0.5292	0.6685	0.8157
Image	0.4050	1.06	0.2183	0.7438	0.8029	0.8061
IMDB-ECC-F	0.6403	7.59	0.1812	0.4670	0.6688	0.8069
IMDB-F	0.6358	7.71	0.1808	0.4682	0.6609	0.8062
LLOG-F	0.8770	23.20	0.3970	0.2234	0.4521	0.8444
mediamill	0.1675	18.19	0.0541	0.6802	0.7615	0.9394
medical	0.3878	10.62	0.3216	0.6419	0.5294	0.9743
Music	0.2667	2.03	0.2217	0.7920	0.8517	0.8428
OHSUMED-F	0.7028	7.45	0.2479	0.3964	0.6160	0.7541
PlantGO	0.2292	0.73	0.1056	0.8550	0.9859	0.9808
PlantPseAAC	0.7449	3.16	0.3366	0.4634	0.7055	0.7662
rcv1subset1	0.7117	29.65	0.1698	0.3293	0.6764	0.8383
REUTERS-K500-EX2	0.8299	16.05	0.1462	0.3058	0.6170	0.8781
scene	0.4191	0.96	0.1820	0.7390	0.8633	0.8665
sider_CDK_ECFP4	0.1479	19.34	0.1295	0.8329	0.9630	0.8197
sider_MordredDesc	0.0986	19.94	0.1657	0.8290	0.8355	0.7923
sider_RDKit_desc	0.0915	19.50	0.1357	0.8394	0.9365	0.8202
SLASHDOT-F	0.6032	7.16	0.4426	0.4854	0.6779	0.9128
Stackex_chemistry	0.7709	48.60	0.1975	0.2589	0.7070	0.8335
Stackex_chess	0.7262	79.34	0.3244	0.2372	0.4181	0.8544
Stackex_coffee	0.8696	73.04	0.6882	0.1763	0.2333	0.9234
Stackex_cooking	0.8812	154.10	0.2881	0.1320	0.6250	0.7709
Stackex_cs	0.7281	93.02	0.2204	0.2180	0.6052	0.8264
Stackex_philosophy	0.7789	72.58	0.2329	0.2589	0.5318	0.8272
tmc2007-500	0.4423	5.36	0.1420	0.6009	0.7434	0.8622
tox21_CDK_ECFP4	0.6096	4.42	0.2688	0.5437	0.6420	0.7261
tox21_RDKit_desc	0.5411	4.30	0.2489	0.5762	0.6657	0.7442
VirusGO	0.1429	0.67	0.1349	0.8944	0.7995	0.9778
VirusPseAAC	0.5238	1.76	0.4071	0.6310	0.6140	0.8248
Water-quality	0.3491	9.24	0.3167	0.6682	0.6895	0.7180
Yahoo_Arts	0.7383	6.12	0.1770	0.4429	0.5779	0.8060
Yahoo_Business	0.1390	3.57	0.1707	0.8469	0.8082	0.9753
Yahoo_Computers	0.4924	4.58	0.1011	0.6007	0.5832	0.8712
Yahoo_Education	0.6933	4.58	0.1153	0.4718	0.6089	0.8847
Yahoo_Entertainment	0.6410	3.69	0.1410	0.5315	0.6447	0.8498
Yahoo_Health	0.5049	4.03	0.0862	0.6072	0.5913	0.9098
Yahoo_Recreation	0.7966	5.49	0.2190	0.3864	0.6079	0.7581
Yahoo_Reference	0.4869	3.82	0.1032	0.5984	0.5656	0.8955
Yahoo_Science	0.7745	8.40	0.1801	0.3832	0.5990	0.8158
Yahoo_Social	0.5041	4.22	0.0898	0.6223	0.5877	0.8980
yeast	0.2314	6.69	0.1981	0.7409	0.6619	0.8160
Yelp	0.1446	1.35	0.1797	0.8822	0.8298	0.8657

Table 159: Detailed results for RAkELo(DT)(CV)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5270	5.18	0.5063	0.5532	0.9931	0.9916
3s-bbc1000	0.7500	2.94	0.7479	0.4417	0.9646	0.8612
3s-guardian1000	0.5484	2.35	0.5871	0.5785	0.9888	0.9246
3s-reuters1000	0.8000	2.33	0.7442	0.4394	0.9858	0.8288
bibtex	0.4662	77.44	0.6119	0.3811	0.9917	0.9925
birds	0.6410	7.87	0.6428	0.4465	0.8590	0.9635
bookmarks	0.6903	56.65	0.2385	0.4670	0.8622	0.8621
CAL500	0.3529	150.82	0.6228	0.4096	0.8050	0.9239
corel16k001	0.8700	114.22	0.9320	0.0943	0.9952	0.9954
Corel5k	0.8260	163.54	0.9103	0.1626	0.6756	0.9962
delicious	0.5805	903.50	0.8580	0.1383	0.9919	0.9970
emotions	0.6167	2.65	0.4910	0.6137	0.9236	0.7865
enron	0.3333	24.42	0.4481	0.5177	0.8021	0.9652
EukaryoteGO	0.2178	1.43	0.0942	0.8473	0.9949	0.9935
EukaryotePseAAC	0.9807	10.89	0.9846	0.1579	0.9991	0.9991
Eurlex-dc	0.3070	42.96	0.2634	0.7787	0.7909	1.0000
Eurlex-sm	0.1548	18.99	0.2340	0.8764	0.8580	1.0000
foodtruck	0.2439	4.71	0.4124	0.7236	0.8233	0.9373
genbase	0.0000	0.21	0.0012	1.0000	0.6667	0.9999
GnegativeGO	0.0214	0.16	0.0199	0.9815	0.8744	0.9978
GnegativePseAAC	0.3857	1.54	0.3194	0.7165	0.8661	0.9481
GpositivePseAAC	0.4423	1.00	0.4423	0.7067	0.9838	0.9348
HumanGO	0.4598	3.50	0.4872	0.6183	0.9945	0.9878
HumanPseAAC	0.6977	5.10	0.7294	0.4198	0.9928	0.9570
Image	0.7100	2.03	0.6029	0.5190	0.9831	0.7349
IMDB-ECC-F	0.8950	15.23	0.9507	0.1980	0.9929	0.9940
IMDB-F	0.6887	13.87	0.8149	0.3160	0.9890	0.9819
LLOG-F	0.7951	31.26	0.8242	0.2261	0.5963	0.9955
mediamill	0.3306	69.05	0.6145	0.4087	0.9971	0.9957
medical	0.1735	6.08	0.1689	0.8195	0.5529	0.9973
Music	0.4667	2.97	0.4378	0.6292	0.9108	0.7425
OHSUMED-F	0.4709	10.00	0.5859	0.4931	0.9853	0.9859
PlantGO	0.3646	2.25	0.3260	0.7178	0.9922	0.9813
PlantPseAAC	0.8980	4.48	0.9694	0.3099	0.9875	0.9872
rcv1subset1	0.4799	33.69	0.3294	0.5106	0.9311	0.9863
REUTERS-K500-EX2	0.7749	48.60	0.7927	0.2543	0.7855	0.9989
scene	0.5851	1.71	0.5009	0.6154	0.9510	0.8748
sider_CDK_ECFP4	0.5282	20.12	0.3283	0.7179	0.6733	0.7786
sider_MordredDesc	0.5634	20.63	0.3618	0.6963	0.8660	0.8540
sider_RDKit_desc	0.3592	20.41	0.3222	0.7356	0.9059	0.8681
SLASHDOT-F	0.6481	9.33	0.6963	0.3877	0.7668	0.9938
Stackex_chemistry	0.8718	112.02	0.9527	0.0950	0.9194	0.9994
Stackex_chess	0.7857	143.07	0.8745	0.1342	0.5492	0.9978
Stackex_coffee	0.8696	74.26	0.8324	0.1350	0.2537	0.9853
Stackex_cooking	0.6580	227.73	0.7920	0.2125	0.9243	0.9992
Stackex_cs	0.8234	168.15	0.9040	0.1488	0.8970	0.9991
Stackex_philosophy	0.8342	144.74	0.8927	0.1160	0.7501	0.9990
tmc2007-500	0.4217	8.31	0.4816	0.5537	0.9764	0.9741
tox21_CDK_ECFP4	0.7671	6.80	0.8508	0.3600	0.9605	0.9623
tox21_RDKit_desc	0.8938	7.26	0.9551	0.2968	0.9818	0.9817
VirusGO	0.0476	0.67	0.1021	0.9352	0.8272	0.9913
VirusPseAAC	0.5714	1.14	0.2333	0.6619	0.7534	0.8894
Water-quality	0.3208	10.46	0.6047	0.6239	0.9171	0.8536
Yahoo_Arts	0.4078	6.78	0.3522	0.6821	0.9559	0.9880
Yahoo_Business	0.1225	2.54	0.1858	0.9291	0.8770	1.0000
Yahoo_Computers	0.4105	5.02	0.3541	0.7093	0.8662	1.0000
Yahoo_Education	0.8605	11.16	0.9895	0.3722	0.9242	0.9944
Yahoo_Entertainment	0.3333	2.90	0.2569	0.7661	1.0000	1.0000
Yahoo_Health	0.2527	4.25	0.2418	0.7964	0.8148	0.9834
Yahoo_Recreation	0.3512	4.21	0.3300	0.7268	0.9795	0.9482
Yahoo_Reference	0.3787	3.39	0.2515	0.7339	0.8287	1.0000
Yahoo_Science	0.4863	9.05	0.3757	0.6837	0.9949	1.0000
Yahoo_Social	0.3187	4.44	0.2143	0.7869	0.8974	0.9929
yeast	0.3239	6.94	0.3240	0.7259	0.7194	0.8341
Yelp	0.1699	1.19	0.1059	0.9924	0.9043	0.9924

Table 160: Detailed results for HOMER-K(DT)(CV)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.7360	7.17	0.7275	0.3766	0.9951	0.9934
3s-bbc1000	0.7500	2.97	0.9093	0.4347	0.9831	0.9839
3s-guardian1000	0.5484	2.48	0.9516	0.5624	0.9634	0.9680
3s-reuters1000	0.8333	2.37	0.7817	0.4283	0.9713	0.8332
bibtex	0.6946	86.87	0.7578	0.2361	0.9972	0.9965
birds	0.7692	8.46	0.8487	0.3557	0.8808	0.9851
bookmarks	0.8733	108.34	0.8410	0.1753	1.0000	0.9932
CAL500	0.4314	151.63	0.7846	0.3717	0.8678	0.9721
corel16k001	0.9187	94.53	0.7677	0.1536	0.9988	0.9833
Corel5k	0.9220	167.94	0.9673	0.1306	0.6789	0.9997
delicious	0.5537	900.87	0.7861	0.1404	0.9908	0.9738
emotions	0.4000	3.00	0.6090	0.6468	0.9933	0.8319
enron	0.3041	28.96	0.4900	0.5119	0.8204	0.9682
EukaryoteGO	0.5412	4.37	0.3789	0.6018	0.9989	0.9889
EukaryotePseAAC	0.7207	6.11	0.5501	0.4333	0.9990	0.9668
Eurlex-dc	0.6881	105.59	0.6497	0.3067	0.7808	1.0000
Eurlex-sm	0.4841	56.17	0.5430	0.4281	0.8381	0.9932
foodtruck	0.3415	3.54	0.3869	0.6940	0.8398	0.9080
genbase	0.0597	0.63	0.0377	0.9577	0.6611	0.9982
GnegativeGO	0.1357	0.47	0.0849	0.9014	0.8617	0.9966
GnegativePseAAC	0.6000	2.02	0.6107	0.5710	0.8708	0.9449
GpositivePseAAC	0.5192	1.13	0.5385	0.6603	0.9632	0.9413
HumanGO	0.7363	3.31	0.5043	0.5138	0.9970	0.9707
HumanPseAAC	0.6945	4.53	0.6551	0.4361	0.9971	0.9226
Image	0.6500	1.88	0.5658	0.5736	0.9065	0.8478
IMDB-ECC-F	0.9266	14.52	0.7446	0.2389	0.9826	0.9251
IMDB-F	0.9360	14.86	0.7520	0.2321	0.9770	0.9244
LLOG-F	0.9672	38.03	0.9836	0.0889	0.5995	0.9994
mediamill	0.3340	63.14	0.5210	0.4306	0.9999	0.9930
medical	0.5510	15.74	0.5528	0.4665	0.5553	0.9960
Music	0.4667	3.10	0.5910	0.6199	0.9816	0.8337
OHSUMED-F	0.6425	8.71	0.5255	0.4445	0.9433	0.9056
PlantGO	0.4271	2.99	0.5079	0.6289	0.9755	0.9785
PlantPseAAC	0.8980	4.45	0.9694	0.3118	0.9917	0.9918
rcv1subset1	0.7660	58.38	0.8108	0.2074	0.9161	0.9981
REUTERS-K500-EX2	0.9107	55.71	0.9247	0.1337	0.7861	0.9997
scene	0.5975	1.86	0.5001	0.5978	0.9313	0.9084
sider_CDK_ECFP4	0.2394	20.71	0.2140	0.7912	0.6182	0.7770
sider_MordredDesc	0.1338	20.37	0.2164	0.8120	0.8709	0.7993
sider_RDKit_desc	0.2535	20.48	0.2213	0.7909	0.6862	0.7888
SLASHDOT-F	0.8175	9.46	0.5990	0.3269	0.7662	0.9096
Stackex_chemistry	0.9352	113.85	0.9938	0.0583	0.9199	0.9999
Stackex_chess	0.8810	148.27	0.9247	0.0908	0.5497	0.9989
Stackex_coffee	0.9565	81.70	0.9855	0.0472	0.2602	0.9989
Stackex_cooking	0.8207	236.51	0.8537	0.1280	0.9041	1.0000
Stackex_cs	0.7456	162.40	0.7700	0.2232	0.9049	0.9743
Stackex_philosophy	0.9648	151.08	0.9739	0.0407	0.7508	0.9996
tmc2007-500	0.4790	10.32	0.6579	0.4434	0.9876	0.9788
tox21_CDK_ECFP4	0.8733	6.18	0.6782	0.3710	0.9769	0.8479
tox21_RDKit_desc	0.8938	6.23	0.6936	0.3598	0.9821	0.8523
VirusGO	0.1429	0.71	0.1381	0.9008	0.8287	0.9917
VirusPseAAC	0.6667	1.24	0.3810	0.6183	0.7477	0.9375
Water-quality	0.5189	10.83	0.5390	0.5665	0.8611	0.7430
Yahoo_Arts	0.6083	12.88	0.7310	0.4027	0.9307	1.0000
Yahoo_Business	0.1334	3.91	0.2358	0.8280	0.8402	1.0000
Yahoo_Computers	0.4575	6.35	0.5517	0.5905	0.8874	0.9799
Yahoo_Education	0.6911	10.28	0.7182	0.4287	0.9260	1.0000
Yahoo_Entertainment	0.7564	5.48	0.7364	0.4407	1.0000	0.9682
Yahoo_Health	0.5190	7.51	0.5883	0.5666	0.8246	0.9788
Yahoo_Recreation	0.5617	7.40	0.5498	0.5115	0.9978	0.9601
Yahoo_Reference	0.6343	6.53	0.6521	0.4702	0.7965	1.0000
Yahoo_Science	0.7328	16.48	0.7747	0.2930	0.9761	0.9776
Yahoo_Social	0.5604	6.06	0.3035	0.5721	0.8941	0.9749
yeast	0.3371	7.31	0.5569	0.6612	0.8393	0.8798
Yelp	0.2754	1.89	0.2282	0.7440	0.7720	0.7882

Table 161: Detailed results for RFPCT(CV)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro	Actual labels	Predicted
20NG-F	0.3968	1.77	0.0914	0.7254	0.9301	0.9167	1.02	0.00
3s-bbc1000	0.7500	2.53	0.4377	0.4592	0.6139	0.5819	1.25	0.00
3s-guardian1000	0.5484	1.77	0.2960	0.6212	0.5941	0.7077	1.23	0.00
3s-reuters1000	0.8667	2.57	0.5100	0.3944	0.5248	0.4975	1.07	0.00
bibtex	0.7181	47.92	0.2417	0.3059	0.8196	0.8515	2.41	0.71
birds	0.5897	5.28	0.1896	0.5266	0.7460	0.8121	1.82	0.10
bookmarks	0.8174	61.38	0.2120	0.2303	0.8105	0.7794	2.00	0.06
CAL500	0.1373	132.25	0.1827	0.5030	0.5321	0.8194	25.94	5.29
corel16k001	0.7741	52.12	0.1759	0.2657	0.7257	0.8233	2.88	0.00
Corel5k	0.7580	104.98	0.1225	0.2347	0.4920	0.8799	3.54	0.00
delicious	0.5258	584.77	0.1356	0.2624	0.7691	0.8686	19.12	0.29
emotions	0.3000	1.60	0.1429	0.8094	0.8458	0.8707	1.83	1.97
enron	0.3392	13.29	0.0913	0.5941	0.6110	0.9032	3.49	2.29
EukaryoteGO	0.1915	0.64	0.0374	0.8861	0.9852	1.0000	1.15	1.27
EukaryotePseAAC	0.6435	3.03	0.1292	0.5344	0.7325	0.8839	1.16	0.00
Eurlex-dc	0.3757	19.89	0.1030	0.7534	0.7632	1.0000	1.35	0.88
Eurlex-sm	0.2810	11.18	0.1390	0.7728	0.8283	1.0000	2.24	2.20
foodtruck	0.2439	2.63	0.1134	0.7884	0.6887	0.8234	2.22	0.93
genbase	0.0000	0.33	0.0024	0.9940	0.6667	0.9965	1.21	0.13
GnegativeGO	0.1929	0.54	0.0647	0.8696	0.8531	0.9706	1.05	1.54
GnegativePseAAC	0.3429	0.99	0.1316	0.7664	0.7347	0.9099	1.04	0.30
GpositivePseAAC	0.4231	0.65	0.2179	0.7564	0.8854	0.8519	1.00	0.96
HumanGO	0.2491	0.82	0.0025	0.8536	0.9394	1.0000	1.21	1.10
HumanPseAAC	0.6624	2.53	0.1722	0.5365	0.6423	0.8337	1.18	0.00
Image	0.2650	0.90	0.1617	0.8169	0.8644	0.8531	1.20	0.25
IMDB-ECC-F	0.6336	7.44	0.1759	0.4723	0.6338	0.8100	1.92	0.03
IMDB-F	0.6299	7.61	0.1766	0.4745	0.6256	0.8089	2.00	0.02
LLOG-F	0.7869	13.90	0.1503	0.3166	0.4413	0.8431	1.35	0.10
mediamill	0.0982	13.15	0.0681	0.7850	0.8765	0.9779	4.59	4.78
medical	0.3776	3.92	0.0665	0.6700	0.5342	0.9405	1.30	0.17
Music	0.3000	2.00	0.1732	0.7740	0.8503	0.8541	1.97	2.02
OHSUMED-F	0.6109	6.89	0.2211	0.4577	0.7913	0.7841	1.67	0.23
PlantGO	0.4375	1.71	0.1423	0.6868	0.9407	0.8952	1.10	0.33
PlantPseAAC	0.6837	2.74	0.2334	0.5208	0.7457	0.7971	1.11	0.03
rcv1subset1	0.5030	18.55	0.1562	0.5346	0.7923	0.9097	3.11	3.45
REUTERS-K500-EX2	0.7990	17.81	0.1364	0.3020	0.6350	0.8523	1.45	0.05
scene	0.3195	0.59	0.0990	0.8159	0.9227	0.9095	1.09	1.13
sider_CDK_ECFP4	0.0986	19.07	0.1143	0.8490	0.5656	0.8104	14.26	18.72
sider_MordredDesc	0.0775	19.32	0.1168	0.8549	0.5542	0.8062	14.26	20.28
sider_RDKit_desc	0.0986	19.10	0.1133	0.8542	0.5605	0.8080	14.26	15.92
SLASHDOT-F	0.7116	4.14	0.1706	0.4697	0.6452	0.8329	1.21	0.00
Stackex_chemistry	0.7939	48.17	0.1763	0.2510	0.6467	0.8191	2.13	0.00
Stackex_chess	0.7321	61.35	0.1502	0.2553	0.4091	0.8471	2.40	0.33
Stackex_coffee	0.7391	48.65	0.2031	0.3096	0.2288	0.7555	2.26	0.09
Stackex_cooking	0.8396	144.54	0.2175	0.1528	0.7678	0.7800	2.29	0.04
Stackex_cs	0.7194	78.63	0.1569	0.2572	0.6648	0.8509	2.67	0.23
Stackex_philosophy	0.7337	60.59	0.1461	0.2828	0.5274	0.8428	2.27	0.18
tmc2007-500	0.4315	4.72	0.1177	0.6192	0.8902	0.8835	2.13	1.64
tox21_CDK_ECFP4	0.5788	4.46	0.2593	0.5462	0.6608	0.7225	2.15	0.03
tox21_RDKit_desc	0.5548	4.21	0.2348	0.5764	0.6789	0.7425	2.15	0.62
VirusGO	0.0476	0.52	0.0589	0.9484	0.7117	0.9228	1.19	1.14
VirusPseAAC	0.2857	0.71	0.1202	0.8206	0.7183	0.8953	1.10	1.71
Water-quality	0.2642	8.85	0.2470	0.7141	0.7029	0.7339	5.29	10.04
Yahoo_Arts	0.6195	5.54	0.4009	0.5605	0.7124	0.8796	1.70	2.41
Yahoo_Business	0.1448	2.05	0.1370	0.8616	0.7405	1.0000	1.63	1.63
Yahoo_Computers	0.4787	4.01	0.3714	0.6749	0.6915	0.9052	1.57	2.03
Yahoo_Education	0.6748	3.95	0.2664	0.5814	0.6836	0.9450	1.46	1.14
Yahoo_Entertainment	0.5833	3.28	0.1209	0.6066	0.7900	0.8526	1.45	1.16
Yahoo_Health	0.4897	3.52	0.2808	0.6655	0.6342	0.9531	1.69	1.51
Yahoo_Recreation	0.6517	4.46	0.5444	0.4843	0.6790	0.8584	1.43	1.86
Yahoo_Reference	0.4944	3.04	0.1681	0.6546	0.6867	0.9581	1.17	1.30
Yahoo_Science	0.6957	7.11	0.1490	0.4877	0.7236	0.8557	1.49	1.71
Yahoo_Social	0.3903	3.76	0.1632	0.6809	0.7296	0.9626	1.33	1.29
yeast	0.2603	6.25	0.1776	0.7375	0.7125	0.8271	4.23	2.06
Yelp	0.0620	1.15	0.2047	0.9451	0.9198	0.9127	1.84	1.55

Table 162: Detailed results for MLC-DWkNN.D(CV)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4507	4.74	0.4504	0.6069	0.9882	0.9886
3s-bbc1000	0.6111	2.44	0.6852	0.5556	0.9168	0.9033
3s-guardian1000	0.7097	2.29	0.7581	0.5253	0.9080	0.8814
3s-reuters1000	0.8667	2.60	0.8567	0.3844	0.8479	0.8461
bibtex	0.7000	82.43	0.7452	0.2511	0.9909	0.9908
birds	0.4103	5.79	0.4223	0.6225	0.8737	0.9768
bookmarks	0.6758	95.41	0.6815	0.3153	0.9948	0.9952
CAL500	0.1373	141.55	0.1910	0.4969	0.4935	0.7803
corel16k001	0.9172	113.62	0.8989	0.1004	0.9854	0.9851
Corel5k	0.8120	164.48	0.8747	0.1700	0.6727	0.9929
delicious	0.3965	658.95	0.2520	0.3551	0.5525	0.6470
emotions	0.2167	1.62	0.1311	0.8275	0.8476	0.8705
enron	0.3626	17.72	0.2093	0.5974	0.5424	0.7603
EukaryoteGO	0.2152	0.99	0.0510	0.8590	0.7822	0.9388
EukaryotePseAAC	0.6512	3.41	0.1561	0.5236	0.5840	0.8040
Eurlex-dc	0.3326	59.80	0.3419	0.6562	0.7592	0.9996
Eurlex-sm	0.2904	34.23	0.3283	0.6696	0.8293	0.9987
foodtruck	0.2195	2.88	0.1211	0.7885	0.5540	0.7610
genbase	0.0299	0.25	0.0017	0.9838	0.6665	0.9999
GnegativeGO	0.0500	0.14	0.0265	0.9696	0.8657	0.9888
GnegativePseAAC	0.3071	0.95	0.1351	0.7872	0.6973	0.9055
GpositivePseAAC	0.2500	0.38	0.1282	0.8558	0.9326	0.9252
HumanGO	0.2476	0.99	0.0742	0.8391	0.7768	0.9112
HumanPseAAC	0.6913	3.17	0.2213	0.5014	0.5816	0.7509
Image	0.2950	0.86	0.1621	0.8159	0.8415	0.8374
IMDB-ECC-F	0.6665	8.69	0.2574	0.4409	0.5001	0.6259
IMDB-F	0.6663	9.36	0.2993	0.4301	0.5324	0.6442
LLOG-F	0.7951	16.07	0.2301	0.3138	0.3022	0.6184
mediamill	0.1150	14.23	0.0406	0.7683	0.6428	0.8652
medical	0.2245	3.98	0.0750	0.8226	0.3954	0.8914
Music	0.2000	1.85	0.1432	0.8244	0.8400	0.8571
OHSUMED-F	0.6231	7.34	0.2403	0.4468	0.5582	0.6745
PlantGO	0.3438	1.01	0.1133	0.7855	0.8189	0.8769
PlantPseAAC	0.6939	2.78	0.2356	0.5002	0.5947	0.7308
rcv1subset1	0.7150	53.17	0.7311	0.2880	0.9268	0.9842
REUTERS-K500-EX2	0.4708	8.91	0.0955	0.6268	0.5842	0.8051
scene	0.2531	0.45	0.0715	0.8568	0.9306	0.9324
sider_CDK_ECFP4	0.1056	18.93	0.1176	0.8512	0.5689	0.7825
sider_MordredDesc	0.0634	19.03	0.1185	0.8571	0.5306	0.7561
sider_RDKit_desc	0.0634	18.94	0.1175	0.8548	0.5344	0.7603
SLASHDOT-F	0.6825	10.23	0.7092	0.3623	0.7540	0.9741
Stackex_chemistry	0.7594	53.49	0.2274	0.2687	0.4945	0.6003
Stackex_chess	0.7440	75.65	0.2488	0.2504	0.2999	0.6052
Stackex_coffee	0.7826	51.57	0.2463	0.2298	0.1384	0.6366
Stackex_cooking	0.9304	251.25	0.9428	0.0606	0.9205	0.9954
Stackex_cs	0.6826	87.67	0.2337	0.2889	0.4925	0.6300
Stackex_philosophy	0.7437	73.31	0.2308	0.2861	0.3884	0.5903
tmc2007-500	0.2972	3.38	0.0780	0.7573	0.7584	0.8589
tox21_CDK_ECFP4	0.4692	4.10	0.2280	0.6227	0.6681	0.7365
tox21_RDKit_desc	0.4452	4.05	0.2073	0.6357	0.6896	0.7579
VirusGO	0.1429	0.67	0.1308	0.8905	0.7029	0.8507
VirusPseAAC	0.3810	0.81	0.1548	0.7833	0.5963	0.8649
Water-quality	0.2075	8.75	0.2468	0.7197	0.7070	0.7508
Yahoo_Arts	0.6716	6.09	0.1695	0.4797	0.5084	0.6338
Yahoo_Business	0.1604	3.66	0.2909	0.8350	0.8526	0.9929
Yahoo_Computers	0.4249	4.35	0.1010	0.6514	0.5096	0.7248
Yahoo_Education	0.6384	4.44	0.1154	0.5124	0.5043	0.6652
Yahoo_Entertainment	0.6049	3.61	0.1389	0.5500	0.5383	0.6729
Yahoo_Health	0.4810	4.09	0.0884	0.6334	0.4715	0.7402
Yahoo_Recreation	0.7225	7.99	0.7238	0.4024	0.9595	0.9610
Yahoo_Reference	0.5629	6.52	0.5812	0.5189	0.8020	0.9869
Yahoo_Science	0.7247	8.38	0.1763	0.4153	0.4996	0.5920
Yahoo_Social	0.4678	4.41	0.1114	0.6469	0.5301	0.7563
yeast	0.2025	5.95	0.1478	0.7872	0.7061	0.8521
Yelp	0.0977	1.35	0.3268	0.9048	0.8736	0.8950

Table 163: Detailed results for ML-kNN(CV)

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.4538	4.52	0.2351	0.6078	0.7887	0.7690
3s-bbc1000	0.6111	2.22	0.3950	0.5484	0.6812	0.5966
3s-guardian1000	0.7097	1.97	0.3460	0.5309	0.6464	0.6531
3s-reuters1000	0.8333	2.50	0.4775	0.4183	0.6163	0.5327
bibtex	0.6351	71.72	0.3082	0.2710	0.5823	0.6330
birds	0.4103	5.44	0.1702	0.6429	0.6814	0.7847
bookmarks	0.6700	67.72	0.2316	0.3375	0.5817	0.6924
CAL500	0.1373	131.90	0.2023	0.4671	0.4863	0.7555
corel16k001	0.8337	55.93	0.1942	0.2155	0.5239	0.6245
Corel5k	0.7940	113.29	0.1410	0.1893	0.3578	0.7260
delicious	0.6414	659.87	0.1568	0.2744	0.5764	0.8484
emotions	0.3667	2.35	0.2664	0.7181	0.7608	0.7350
enron	0.4152	15.56	0.1202	0.5750	0.5130	0.8551
EukaryoteGO	0.2848	1.83	0.0727	0.7915	0.8065	0.9287
EukaryotePseAAC	0.7104	3.37	0.1446	0.4909	0.6117	0.8244
Eurlex-dc	0.3290	41.61	0.0831	0.6612	0.5579	0.8578
Eurlex-sm	0.2915	24.05	0.0672	0.6793	0.6192	0.8691
foodtruck	0.3659	3.54	0.1898	0.6796	0.5798	0.7415
genbase	0.0448	0.34	0.0049	0.9694	0.6440	0.9767
GnegativeGO	0.0857	0.34	0.0370	0.9335	0.8395	0.9658
GnegativePseAAC	0.4429	1.13	0.1526	0.7158	0.7503	0.8604
GpositivePseAAC	0.4423	0.79	0.2628	0.7292	0.8669	0.7956
HumanGO	0.3023	1.63	0.0984	0.7784	0.7780	0.8953
HumanPseAAC	0.7331	3.00	0.2071	0.4704	0.6212	0.7537
Image	0.3900	1.09	0.2213	0.7459	0.8045	0.7830
IMDB-ECC-F	0.7670	8.99	0.2264	0.3846	0.5357	0.7389
IMDB-F	0.7930	9.17	0.2287	0.3674	0.5251	0.7467
LLOG-F	0.8279	15.84	0.1793	0.2872	0.3522	0.7597
mediamill	0.1097	15.93	0.0432	0.7674	0.6888	0.8712
medical	0.3367	5.35	0.0888	0.6809	0.4056	0.8962
Music	0.2500	2.17	0.2087	0.7883	0.8168	0.7999
OHSUMED-F	0.8026	7.63	0.2549	0.3653	0.5944	0.6787
PlantGO	0.3854	1.68	0.1374	0.7171	0.7814	0.8674
PlantPseAAC	0.7245	3.16	0.2742	0.4704	0.6743	0.7245
rcv1subset1	0.6600	29.72	0.1627	0.3488	0.5816	0.7210
REUTERS-K500-EX2	0.5206	15.13	0.1128	0.5059	0.4778	0.7839
scene	0.2988	0.88	0.1571	0.7952	0.8502	0.8404
sider_CDK_ECFP4	0.0845	18.97	0.1224	0.8523	0.5839	0.7614
sider_MordredDesc	0.0986	18.96	0.1244	0.8454	0.5432	0.7470
sider_RDKit_desc	0.0915	19.16	0.1217	0.8501	0.5607	0.7452
SLASHDOT-F	0.6772	4.70	0.1975	0.4545	0.5313	0.7906
Stackex_chemistry	0.8501	52.15	0.1983	0.1770	0.4813	0.6408
Stackex_chess	0.8333	70.88	0.1820	0.2131	0.2965	0.6591
Stackex_coffee	0.6522	63.57	0.3493	0.3213	0.1544	0.6441
Stackex_cooking	0.9130	155.29	0.2458	0.0824	0.4752	0.5953
Stackex_cs	0.8017	88.94	0.1828	0.2071	0.4787	0.6811
Stackex_philosophy	0.8166	64.59	0.1629	0.2111	0.4170	0.6520
tmc2007-500	0.4063	5.66	0.1348	0.6581	0.7098	0.8548
tox21_CDK_ECFP4	0.5411	4.48	0.2577	0.5673	0.6627	0.7141
tox21_RDKit_desc	0.5240	4.63	0.2655	0.5600	0.6579	0.7133
VirusGO	0.2857	0.86	0.1336	0.8167	0.7351	0.8800
VirusPseAAC	0.5714	1.05	0.1869	0.6698	0.6363	0.8476
Water-quality	0.3208	9.57	0.3002	0.6602	0.6029	0.6445
Yahoo_Arts	0.6796	6.18	0.1726	0.4526	0.5750	0.6943
Yahoo_Business	0.1604	2.39	0.0423	0.8561	0.6355	0.8942
Yahoo_Computers	0.4875	4.22	0.0892	0.6199	0.6359	0.8355
Yahoo_Education	0.7323	4.33	0.1048	0.4601	0.5593	0.7995
Yahoo_Entertainment	0.6528	3.74	0.1437	0.5183	0.5350	0.7592
Yahoo_Health	0.5223	3.94	0.0825	0.5967	0.5564	0.8212
Yahoo_Recreation	0.7101	5.10	0.1970	0.4431	0.6056	0.6961
Yahoo_Reference	0.5455	3.70	0.0948	0.5794	0.5115	0.8544
Yahoo_Science	0.7683	7.88	0.1575	0.3933	0.5354	0.7023
Yahoo_Social	0.5825	4.00	0.0817	0.5885	0.5769	0.8301
yeast	0.2727	6.11	0.1770	0.7392	0.6294	0.7810
Yelp	0.1655	1.33	0.1252	0.8755	0.8300	0.8353

Table 164: Detailed results for BOOMER

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.3021	1.41	0.0576	0.7859	0.9375	0.9325
3s-bbc1000	0.5833	1.75	0.4815	0.6250	0.6707	0.6777
3s-guardian1000	0.7097	2.61	0.4839	0.4688	0.5439	0.5754
3s-reuters1000	0.7667	2.17	0.6833	0.4739	0.5982	0.5587
bibtex	0.4324	35.13	0.1565	0.4813	0.9461	0.8734
birds	0.4103	3.77	0.1132	0.6557	0.7815	0.8893
bookmarks	0.7346	55.94	0.1472	0.3021	0.9205	0.7962
CAL500	0.1373	133.78	0.4073	0.4949	0.5998	0.8168
corel16k001	0.7712	51.95	0.0699	0.2605	0.9093	0.8250
Corel5k	0.7720	111.92	0.5531	0.2156	0.6643	0.8700
delicious	0.5618	644.94	0.1041	0.2253	0.9868	0.8537
emotions	0.1833	1.67	0.1347	0.8366	0.8364	0.8645
enron	0.2164	12.42	0.0615	0.7039	0.6631	0.9127
EukaryoteGO	0.2819	0.97	0.0046	0.8172	0.9736	0.9705
EukaryotePseAAC	0.5701	2.44	0.0128	0.6105	0.7485	0.9046
Eurlex-dc	0.6472	47.29	0.1943	0.4337	0.7566	0.8971
Eurlex-sm	0.3860	21.32	0.3523	0.5574	0.8137	0.9383
foodtruck	0.2683	2.73	0.2463	0.7902	0.6995	0.8324
genbase	0.7910	5.07	0.7114	0.3910	0.6667	0.8263
GnegativeGO	0.0357	0.09	0.0071	0.9810	0.8697	0.9961
GnegativePseAAC	0.2357	0.65	0.1232	0.8469	0.7513	0.9475
GpositivePseAAC	0.2885	0.50	0.1538	0.8237	0.8720	0.8887
HumanGO	0.2412	0.83	0.0221	0.8411	0.9414	0.9559
HumanPseAAC	0.5756	2.34	0.0609	0.5996	0.6598	0.8483
Image	0.2500	0.72	0.0546	0.8429	0.8904	0.8938
IMDB-ECC-F	0.6262	7.06	0.1651	0.4880	0.6584	0.8235
IMDB-F	0.6130	7.29	0.1773	0.4913	0.6535	0.8209
LLOG-F	0.5902	11.45	0.1787	0.4745	0.4635	0.8726
mediamill	0.1599	17.71	0.0249	0.6929	0.8693	0.9420
medical	0.1327	2.03	0.0456	0.8903	0.5421	0.9707
Music	0.2000	1.77	0.1523	0.8347	0.8674	0.8835
OHSUMED-F	0.3467	4.08	0.1141	0.6986	0.8350	0.8885
PlantGO	0.2143	0.51	0.0128	0.8753	0.9704	0.9663
PlantPseAAC	0.6429	2.31	0.1395	0.5649	0.7479	0.8261
rcv1subset1	0.6200	29.97	0.2059	0.3545	0.8789	0.8399
REUTERS-K500-EX2	0.4967	9.21	0.0516	0.5884	0.7493	0.9290
scene	0.1992	0.39	0.0685	0.8842	0.9498	0.9575
sider_CDK_ECFP4	0.0845	18.92	0.0944	0.8444	0.6960	0.8356
sider_MordredDesc	0.0493	19.01	0.1050	0.8510	0.6963	0.8368
sider_RDKit_desc	0.0845	19.19	0.1042	0.8466	0.6962	0.8342
SLASHDOT-F	0.4011	2.35	0.0178	0.7044	0.6742	0.9145
Stackex_chemistry	0.7256	37.36	0.2578	0.3201	0.8810	0.8699
Stackex_chess	0.6667	50.26	0.1285	0.3206	0.5286	0.8855
Stackex_coffee	0.7826	52.39	0.1845	0.3294	0.2486	0.7481
Stackex_cooking	0.8000	107.94	0.1487	0.2703	0.9200	0.8529
Stackex_cs	0.6061	61.88	0.2072	0.3418	0.8825	0.8913
Stackex_philosophy	0.6131	49.22	0.1114	0.3775	0.7296	0.8800
tmc2007-500	0.2364	2.74	0.0654	0.8017	0.9198	0.9491
tox21_CDK_ECFP4	0.5000	4.12	0.1001	0.6034	0.7226	0.7851
tox21_RDKit_desc	0.5034	4.06	0.1101	0.6119	0.7244	0.7917
VirusGO	0.0476	0.43	0.0476	0.9540	0.7740	0.9632
VirusPseAAC	0.4286	0.90	0.0238	0.7452	0.6218	0.8966
Water-quality	0.1887	8.74	0.2481	0.7240	0.7431	0.7687
Yahoo_Arts	0.4713	4.87	0.2847	0.6064	0.7751	0.8563
Yahoo_Business	0.1087	1.88	0.1240	0.8993	0.7392	0.9596
Yahoo_Computers	0.3960	3.63	0.3388	0.6830	0.7424	0.9032
Yahoo_Education	0.5495	3.48	0.2657	0.5914	0.7792	0.9169
Yahoo_Entertainment	0.3723	2.59	0.0729	0.7105	0.8658	0.9025
Yahoo_Health	0.3692	2.97	0.2189	0.7250	0.7384	0.9386
Yahoo_Recreation	0.4209	3.35	0.3222	0.6655	0.8277	0.8646
Yahoo_Reference	0.3948	2.71	0.0811	0.7000	0.7024	0.9253
Yahoo_Science	0.5568	6.07	0.1165	0.5477	0.8441	0.8695
Yahoo_Social	0.3804	3.36	0.1306	0.7122	0.8174	0.9218
yeast	0.1901	6.36	0.2018	0.7739	0.7226	0.8473
Yelp	0.1356	1.20	0.1290	0.9029	0.8698	0.9039

Table 165: Detailed results for MLTSVM

Datasets	One-error	Coverage	Ranking-loss	Average-precision	AUC-macro	AUC-micro
20NG-F	0.5223	1.60	0.0820	0.6553	0.9073	0.9075
3s-bbc1000	0.5556	1.67	0.2669	0.6361	0.6964	0.6919
3s-guardian1000	0.6774	1.97	0.3460	0.5621	0.6318	0.6042
3s-reuters1000	0.7667	1.87	0.3558	0.5033	0.5751	0.5802
bibtex	0.5824	18.36	0.0643	0.4639	0.8760	0.9016
birds	0.6154	5.51	0.2110	0.4930	0.6519	0.7764
bookmarks	0.7254	65.23	0.2263	0.3058	0.5742	0.6392
CAL500	0.9020	149.12	0.4308	0.1836	0.4923	0.5593
corel16k001	0.8947	46.09	0.1711	0.1813	0.7367	0.8289
Corel5k	0.7620	89.02	0.1018	0.2541	0.4930	0.8988
delicious	0.7203	601.23	0.1470	0.2044	0.6336	0.8012
emotions	0.3333	1.82	0.1745	0.7701	0.8348	0.8251
enron	0.4854	12.49	0.0915	0.5776	0.5339	0.8599
EukaryoteGO	0.2023	0.48	0.0149	0.8849	0.9713	0.9864
EukaryotePseAAC	0.8494	4.02	0.1760	0.3684	0.7299	0.8230
Eurlex-dc	0.6024	47.24	0.1506	0.4171	0.7861	0.9258
Eurlex-sm	0.9654	122.42	0.4921	0.0573	0.4120	0.5315
foodtruck	0.8293	5.29	0.3511	0.3790	0.6616	0.6568
genbase	0.0000	0.21	0.0000	1.0000	0.6667	1.0000
GnegativeGO	0.0357	0.11	0.0073	0.9792	0.8612	0.9899
GnegativePseAAC	0.3429	0.96	0.1304	0.7665	0.7129	0.8812
GpositivePseAAC	0.3462	0.50	0.1667	0.8061	0.8299	0.8581
HumanGO	0.2090	0.61	0.0304	0.8769	0.9303	0.9671
HumanPseAAC	0.7492	3.19	0.2218	0.4540	0.6359	0.7632
Image	0.5550	1.28	0.2737	0.6614	0.6780	0.6762
IMDB-ECC-F	0.7271	8.65	0.2159	0.3914	0.5635	0.7553
IMDB-F	0.7361	8.98	0.2213	0.3872	0.5550	0.7518
LLOG-F	0.6967	13.26	0.1388	0.4011	0.4251	0.8396
mediamill	0.9800	36.96	0.2385	0.1437	0.6413	0.7558
medical	0.1531	1.31	0.0177	0.8854	0.5021	0.9701
Music	0.3167	2.35	0.2419	0.7433	0.7663	0.7607
OHSUMED-F	0.6920	6.09	0.1916	0.4487	0.7642	0.7931
PlantGO	0.2188	0.48	0.0321	0.8748	0.9573	0.9647
PlantPseAAC	0.6735	2.45	0.2062	0.5251	0.7298	0.7900
rcv1subset1	0.4783	17.02	0.0699	0.5447	0.6193	0.8324
REUTERS-K500-EX2	0.9553	44.11	0.3801	0.1260	0.4775	0.5990
scene	0.5104	1.04	0.1861	0.6899	0.7822	0.7842
sider_CDK_ECFP4	0.4859	20.78	0.2815	0.6862	0.5813	0.6776
sider_MordredDesc	0.7606	22.04	0.4374	0.5696	0.5574	0.5699
sider_RDKit_desc	0.6338	23.11	0.4666	0.5794	0.5601	0.5576
SLASHDOT-F	0.4392	2.32	0.0888	0.6800	0.6631	0.9112
Stackex_chemistry	0.8343	31.99	0.1135	0.2619	0.6544	0.8268
Stackex_chess	0.5833	56.52	0.1278	0.3839	0.3463	0.7719
Stackex_coffee	0.6522	37.43	0.1687	0.3432	0.1519	0.6732
Stackex_cooking	0.7662	88.98	0.1233	0.2478	0.6288	0.7980
Stackex_cs	0.7671	45.80	0.0871	0.3025	0.6487	0.8682
Stackex_philosophy	0.6784	56.53	0.1318	0.3375	0.4155	0.7301
tmc2007-500	0.6580	4.75	0.1321	0.5275	0.8495	0.8589
tox21_CDK_ECFP4	0.6644	4.73	0.2882	0.4919	0.6728	0.7107
tox21_RDKit_desc	0.6986	5.12	0.3137	0.4714	0.6784	0.6908
VirusGO	0.0952	0.52	0.0631	0.9286	0.7675	0.9457
VirusPseAAC	0.4286	1.10	0.1929	0.7079	0.6398	0.8206
Water-quality	0.4340	9.66	0.3467	0.6132	0.6775	0.6662
Yahoo_Arts	0.7557	7.90	0.2313	0.3679	0.5571	0.7188
Yahoo_Business	0.4831	3.10	0.0649	0.6929	0.4370	0.8806
Yahoo_Computers	0.3797	3.68	0.3305	0.6885	0.7696	0.9097
Yahoo_Education	0.5676	3.45	0.2700	0.5807	0.7311	0.9418
Yahoo_Entertainment	0.7078	5.73	0.2429	0.4251	0.6208	0.7230
Yahoo_Health	0.4723	4.52	0.0926	0.6374	0.5199	0.8491
Yahoo_Recreation	0.7950	6.95	0.2823	0.3585	0.5823	0.6633
Yahoo_Reference	0.6040	4.47	0.1168	0.5469	0.4826	0.8098
Yahoo_Science	0.6765	9.14	0.1859	0.4313	0.5654	0.7262
Yahoo_Social	0.5685	6.17	0.1305	0.5436	0.5921	0.8195
yeast	0.7025	8.86	0.4127	0.4827	0.6612	0.5837
Yelp	0.3948	1.71	0.2449	0.7583	0.7596	0.7378

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