

Ensembles for predicting structured outputs

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July 19, 2010

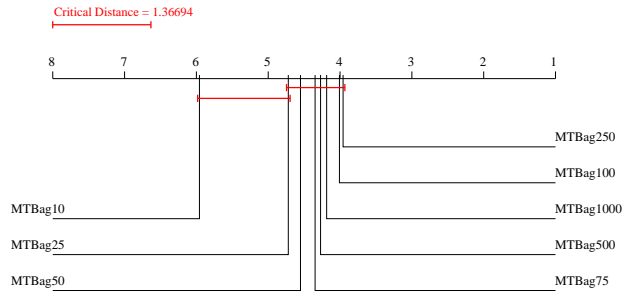
This document contains the statistical significance tests for the used algorithms.

Table 1: Datasets used for evaluation.

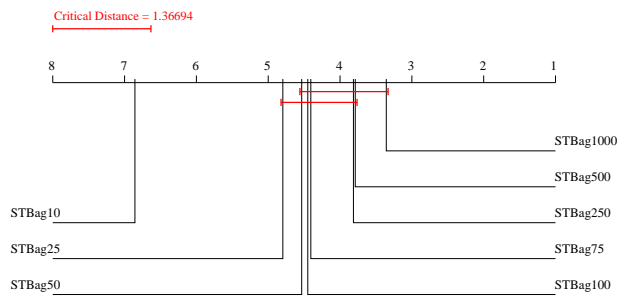
EDM - 1	154	0/16	2
Emotions	593	0/72	6
Mediana	7953	21/58	5
Scene	2407	0/294	6
Sigma real	817	0/4	2
Solar-flare 1	323	10/0	3
Thyroid	9172	22/7	7
Water quality	1060	0/16	14
Yeast	2417	0/103	14

1 Multi-Target Classification - Micro Average Precision

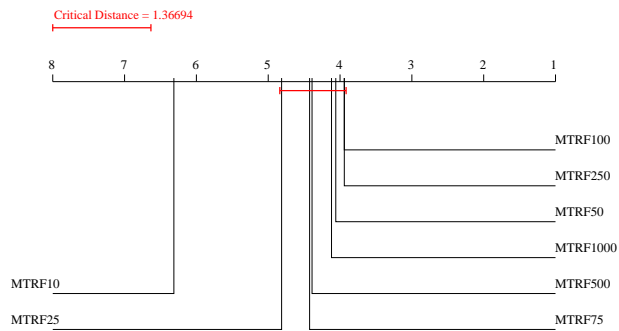
MTClassification - Micro Average Precision: Multi-Target Bagging



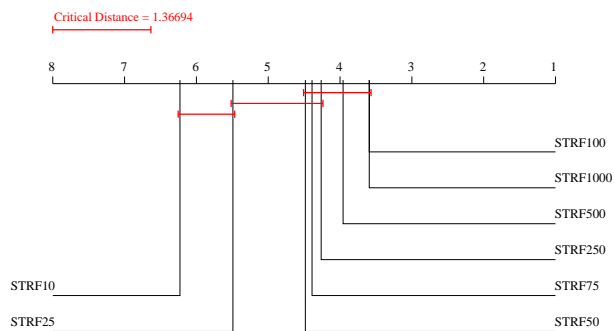
MTClassification - Micro Average Precision: Single-Target Bagging



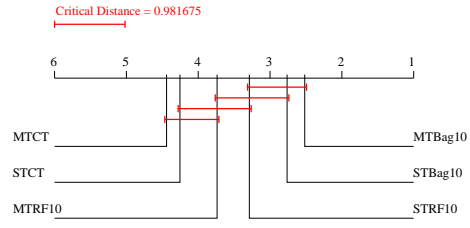
MTClassification - Micro Average Precision: Multi-Target Random Forest



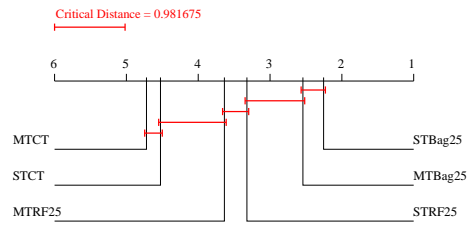
MTClassification - Micro Average Precision: Single-Target Random Forest



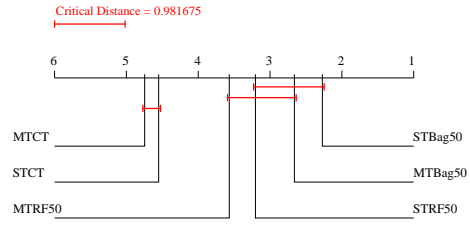
MTClassification - Micro Average Precision: Size10



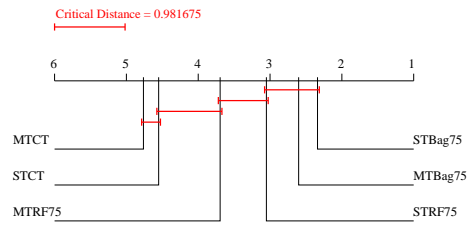
MTClassification - Micro Average Precision: Size25



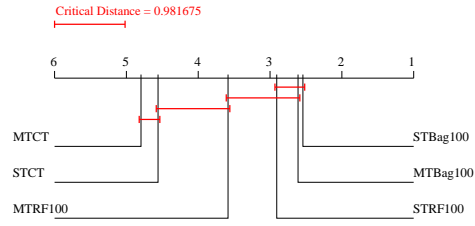
MTClassification - Micro Average Precision: Size50



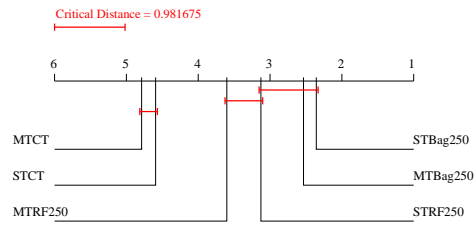
MTClassification - Micro Average Precision: Size75



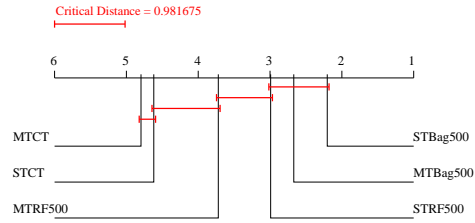
MTClassification - Micro Average Precision: Size100



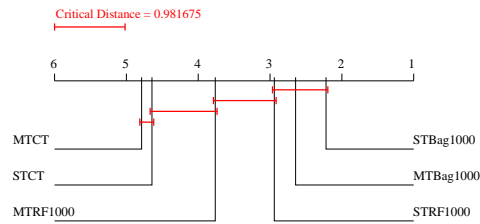
MTClassification - Micro Average Precision: Size250



MTClassification - Micro Average Precision: Size500

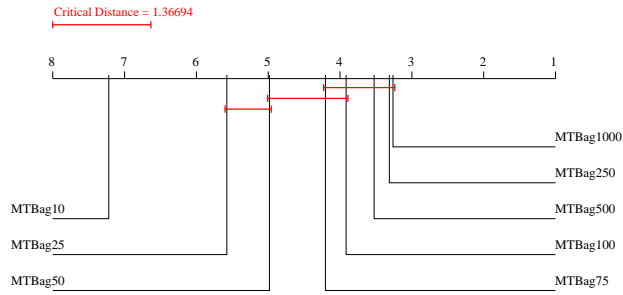


MTClassification - Micro Average Precision: Size1000

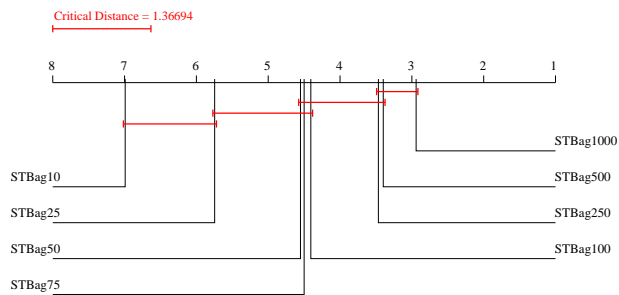


2 Multi-Target Classification - Macro Average Precision

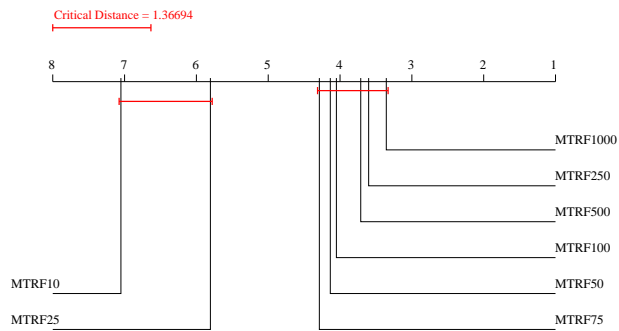
MTClassification - Macro Average Precision: Multi-Target Bagging



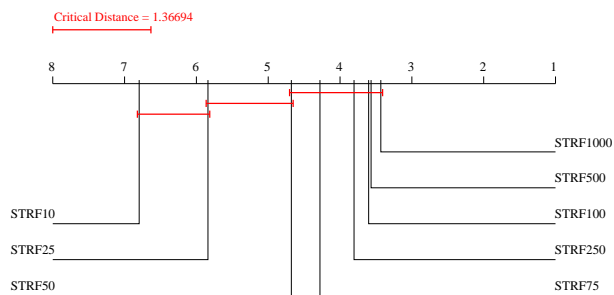
MTClassification - Macro Average Precision: Single-Target Bagging



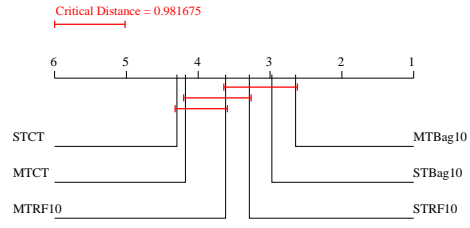
MTClassification - Macro Average Precision: Multi-Target Random Forest



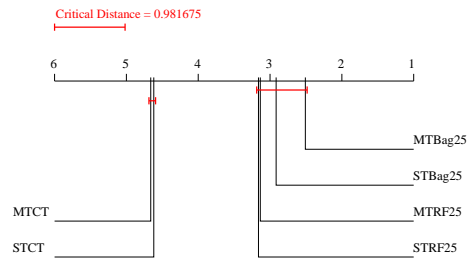
MTClassification - Macro Average Precision: Single-Target Random Forest



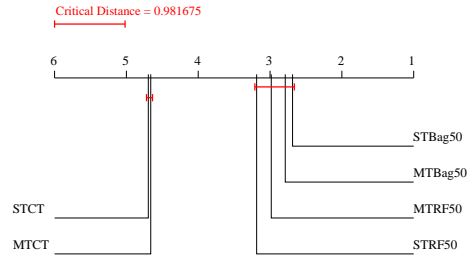
MTClassification - Macro Average Precision: Size10



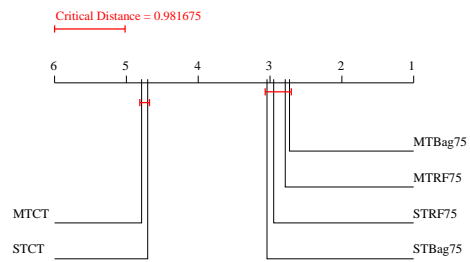
MTClassification - Macro Average Precision: Size25



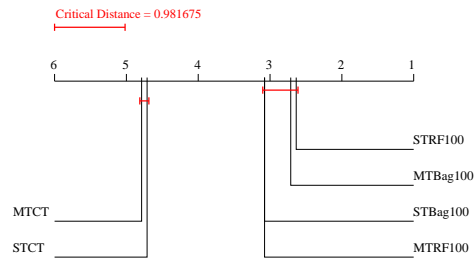
MTClassification - Macro Average Precision: Size50



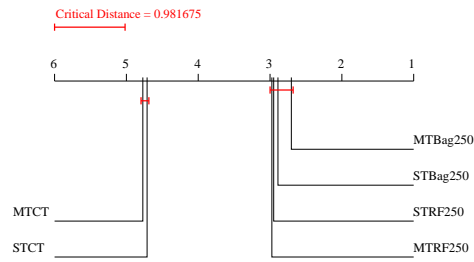
MTClassification - Macro Average Precision: Size75



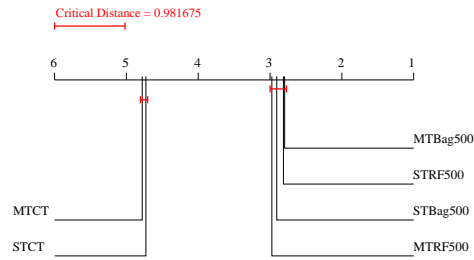
MTClassification - Macro Average Precision: Size100



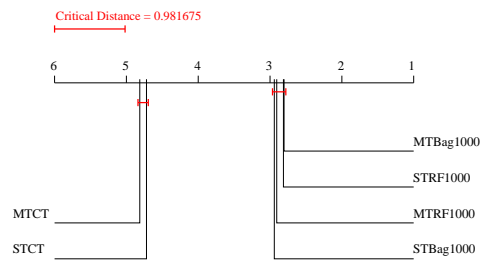
MTClassification - Macro Average Precision: Size250



MTClassification - Macro Average Precision: Size500

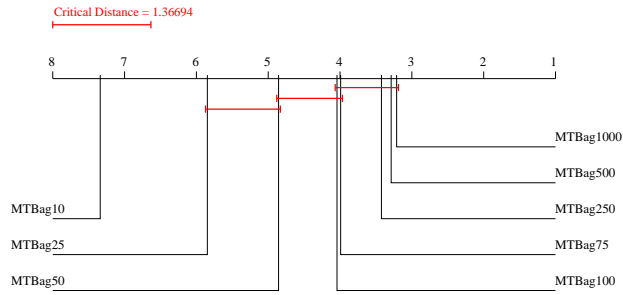


MTClassification - Macro Average Precision: Size1000

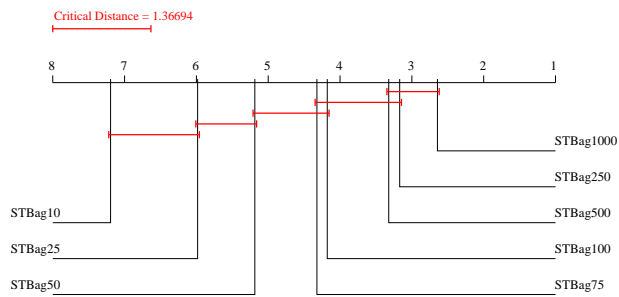


3 Multi-Target Classification - Micro Average Recall

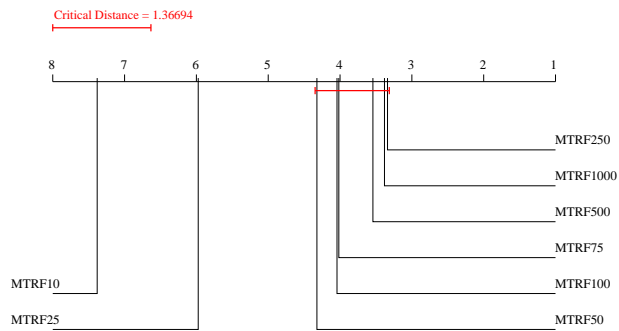
MTClassification - Micro Average Recall: Multi-Target Bagging



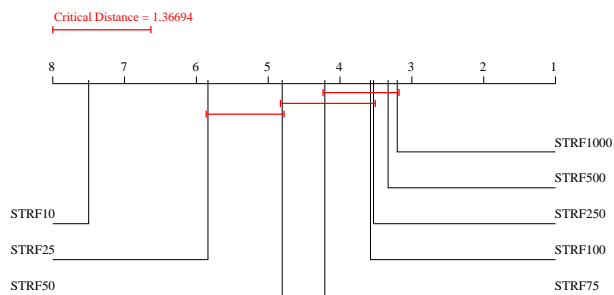
MTClassification - Micro Average Recall: Single-Target Bagging



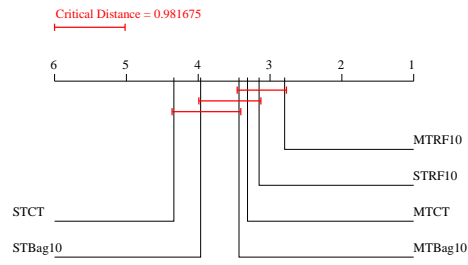
MTClassification - Micro Average Recall: Multi-Target Random Forest



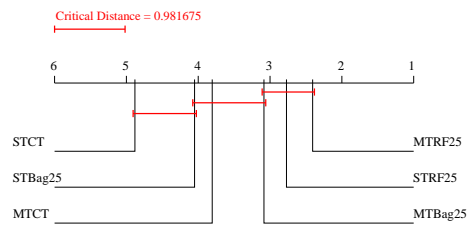
MTClassification - Micro Average Recall: Single-Target Random Forest



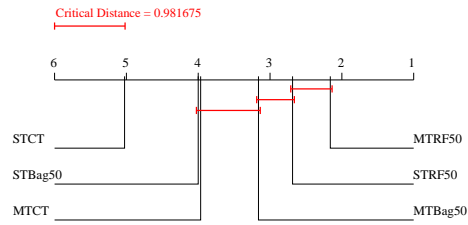
MTClassification - Micro Average Recall: Size10



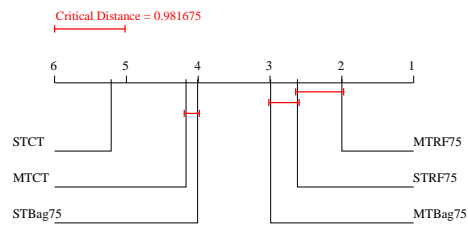
MTClassification - Micro Average Recall: Size25



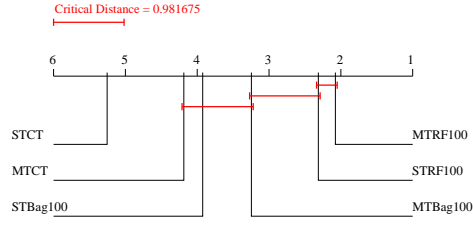
MTClassification - Micro Average Recall: Size50



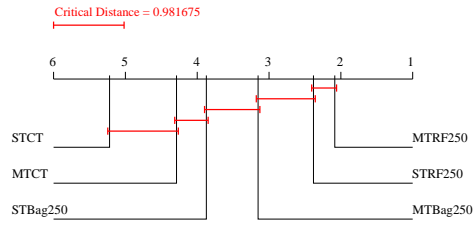
MTClassification - Micro Average Recall: Size75



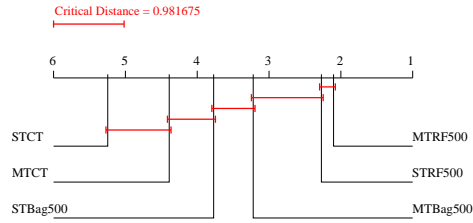
MTClassification - Micro Average Recall: Size100



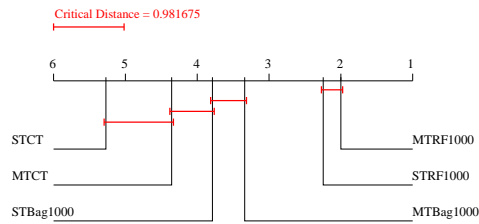
MTClassification - Micro Average Recall: Size250



MTClassification - Micro Average Recall: Size500

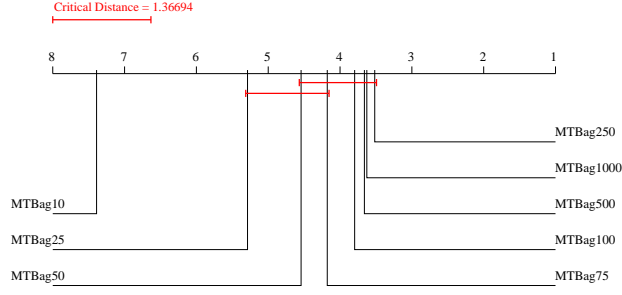


MTClassification - Micro Average Recall: Size1000

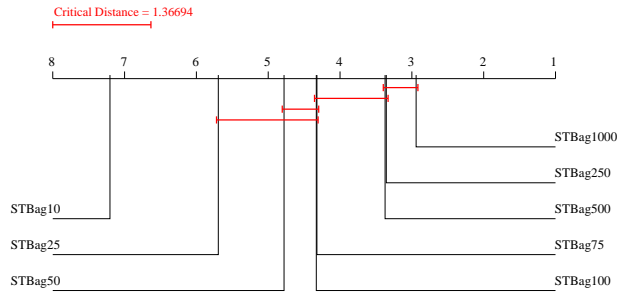


4 Multi-Target Classification - Macro Average Recall

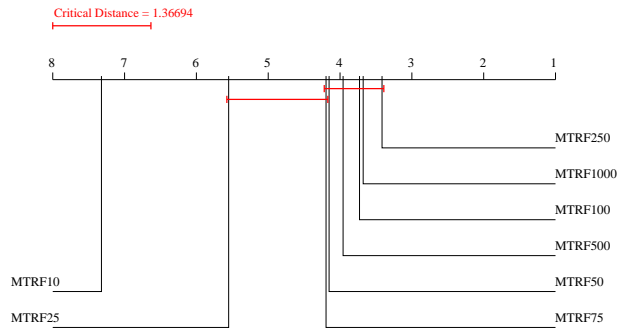
MTClassification - Macro Average Recall: Multi-Target Bagging



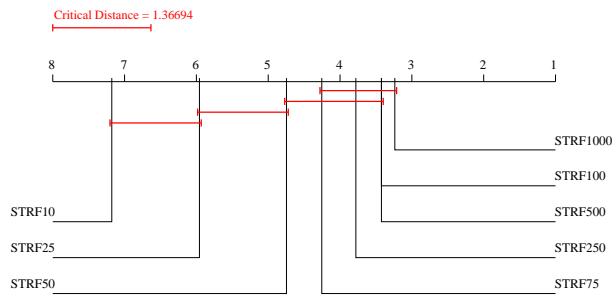
MTClassification - Macro Average Recall: Single-Target Bagging

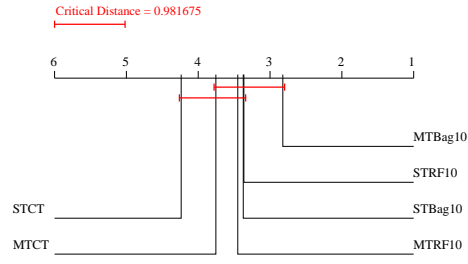
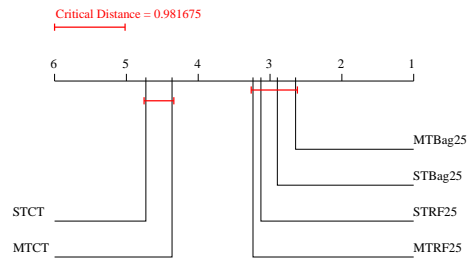
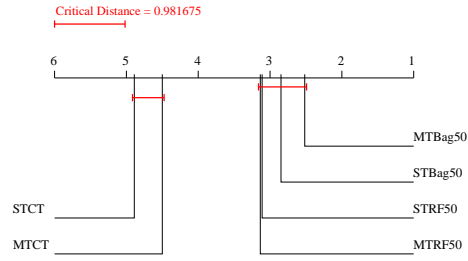
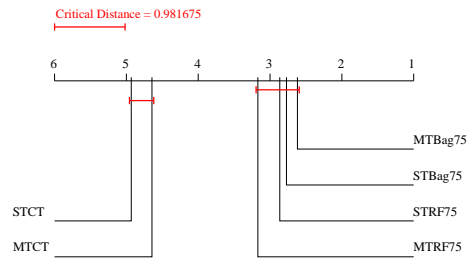


MTClassification - Macro Average Recall: Multi-Target Random Forest

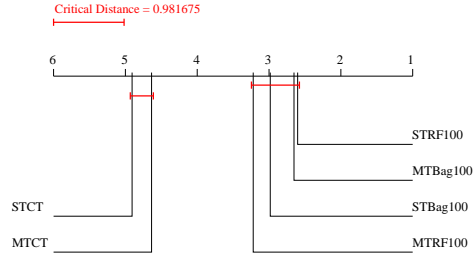


MTClassification - Macro Average Recall: Single-Target Random Forest

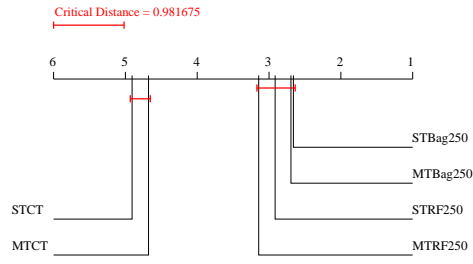


MTClassification - Macro Average Recall: Size10**MTClassification - Macro Average Recall: Size25****MTClassification - Macro Average Recall: Size50****MTClassification - Macro Average Recall: Size75**

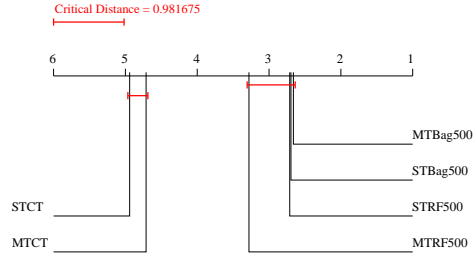
MTClassification - Macro Average Recall: Size100



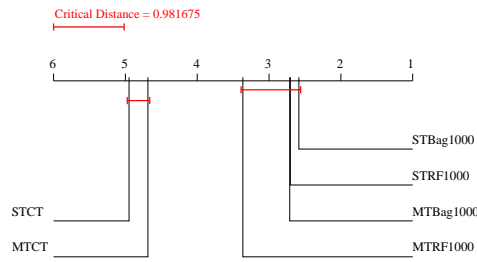
MTClassification - Macro Average Recall: Size250



MTClassification - Macro Average Recall: Size500

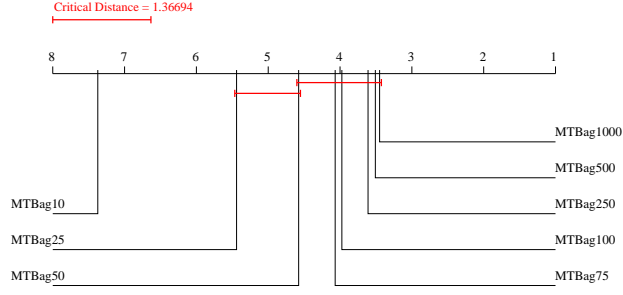


MTClassification - Macro Average Recall: Size1000

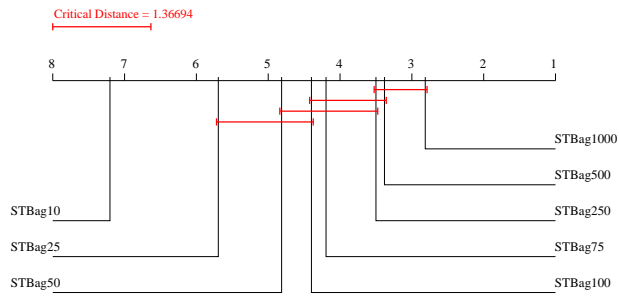


5 Multi-Target Classification - Micro Average Fmeasure

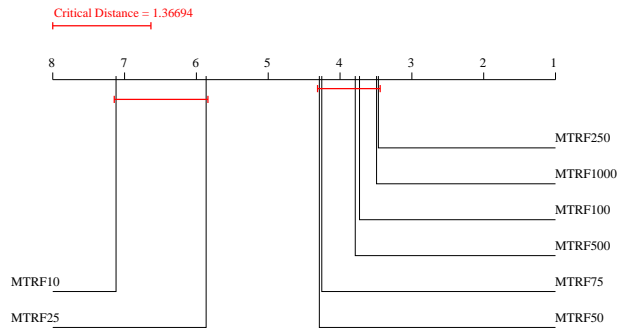
MTClassification - Micro Average Fmeasure: Multi-Target Bagging



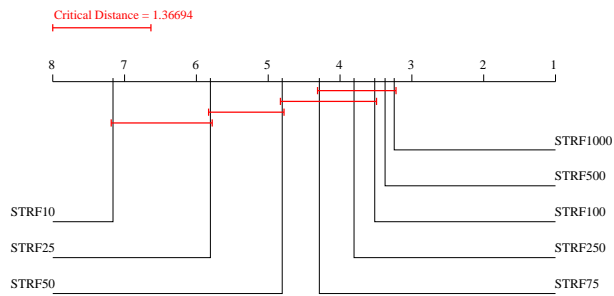
MTClassification - Micro Average Fmeasure: Single-Target Bagging



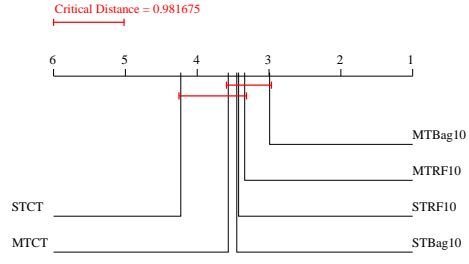
MTClassification - Micro Average Fmeasure: Multi-Target Random Forest



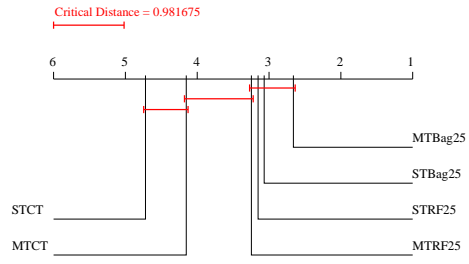
MTClassification - Micro Average Fmeasure: Single-Target Random Forest



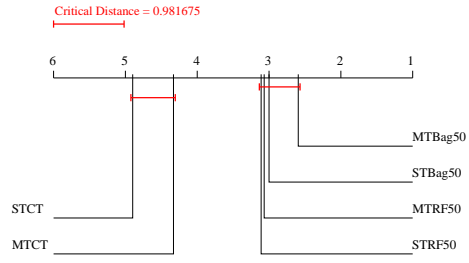
MTClassification - Micro Average Fmeasure: Size10



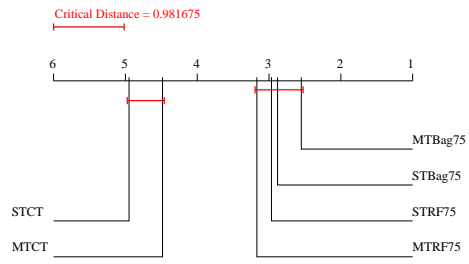
MTClassification - Micro Average Fmeasure: Size25



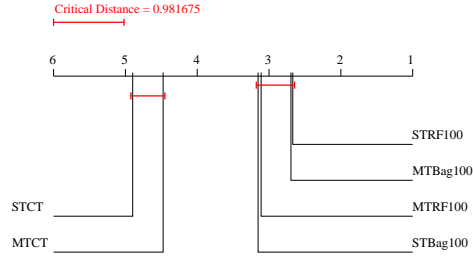
MTClassification - Micro Average Fmeasure: Size50



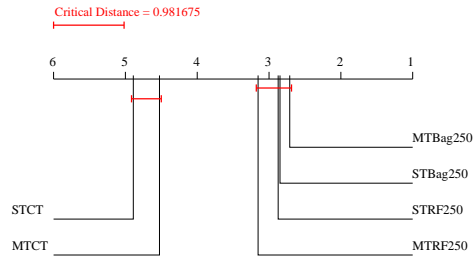
MTClassification - Micro Average Fmeasure: Size75



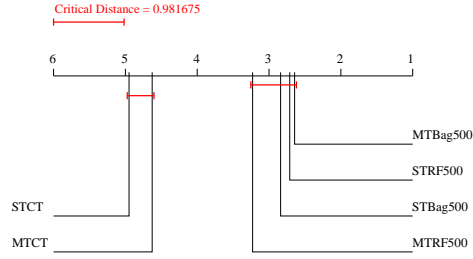
MTClassification - Micro Average Fmeasure: Size100



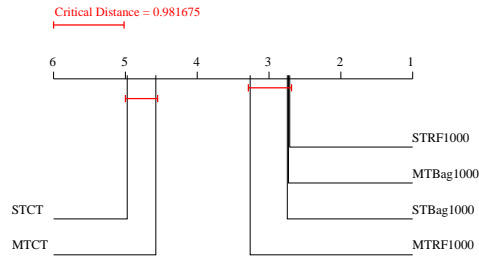
MTClassification - Micro Average Fmeasure: Size250



MTClassification - Micro Average Fmeasure: Size500

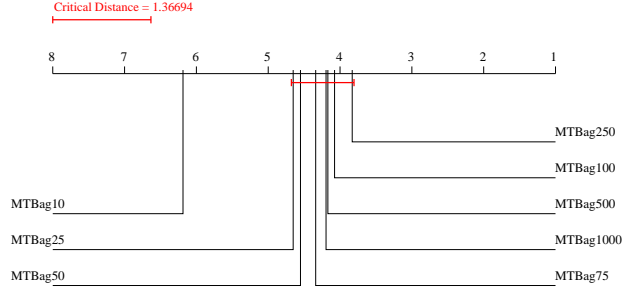


MTClassification - Micro Average Fmeasure: Size1000

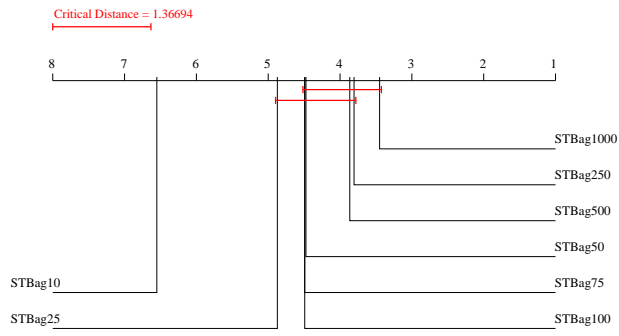


6 Multi-Target Classification - Macro Average Fmeasure

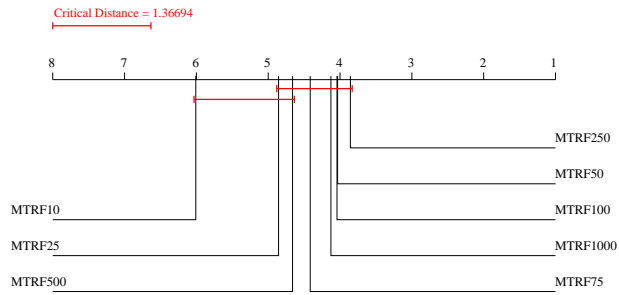
MTClassification - Macro Average Fmeasure: Multi-Target Bagging



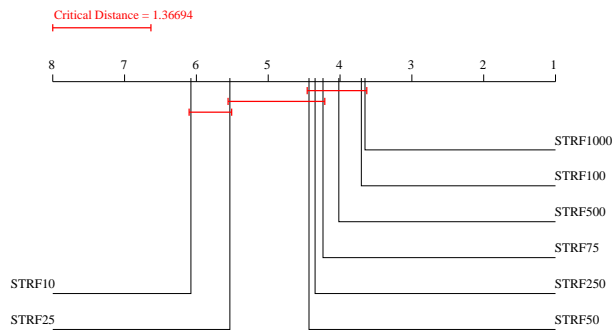
MTClassification - Macro Average Fmeasure: Single-Target Bagging

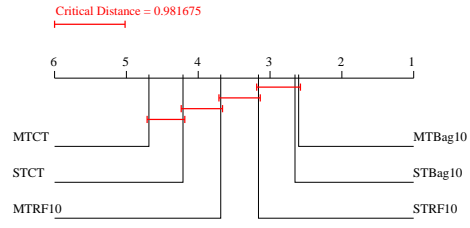
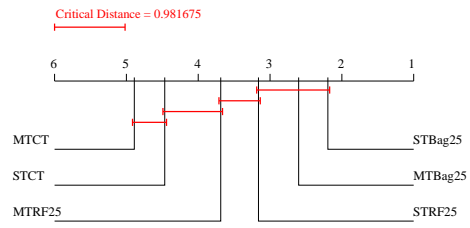
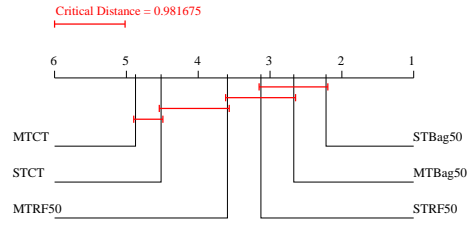
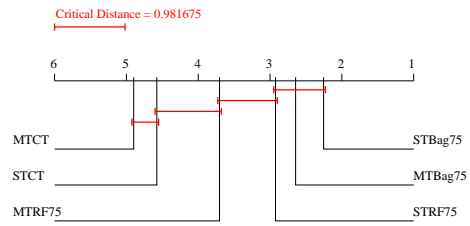


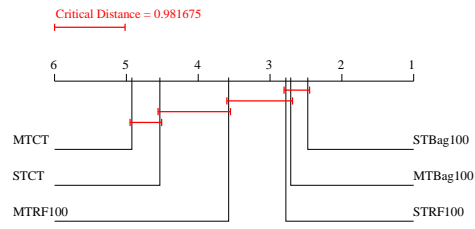
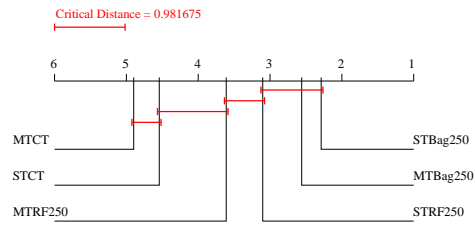
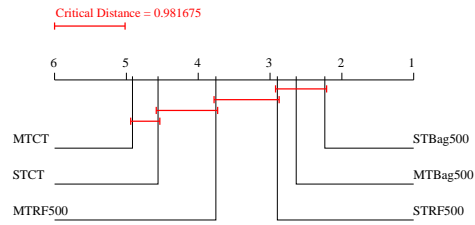
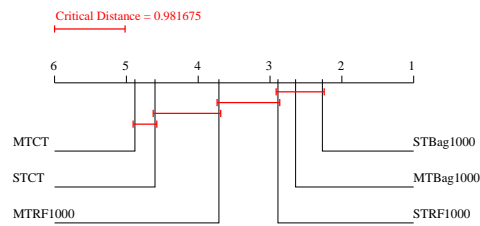
MTClassification - Macro Average Fmeasure: Multi-Target Random Forest



MTClassification - Macro Average Fmeasure: Single-Target Random Forest

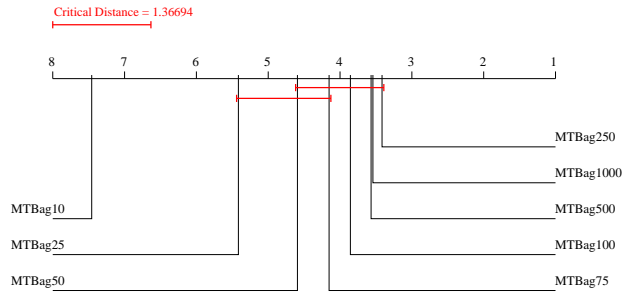


MTClassification - Macro Average Fmeasure: Size10**MTClassification - Macro Average Fmeasure: Size25****MTClassification - Macro Average Fmeasure: Size50****MTClassification - Macro Average Fmeasure: Size75**

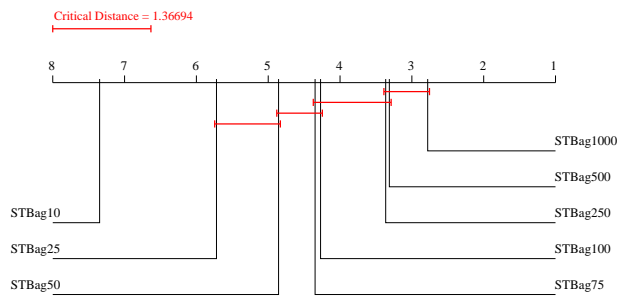
MTClassification - Macro Average Fmeasure: Size100**MTClassification - Macro Average Fmeasure: Size250****MTClassification - Macro Average Fmeasure: Size500****MTClassification - Macro Average Fmeasure: Size1000**

7 Multi-Target Classification - Micro Average MCC

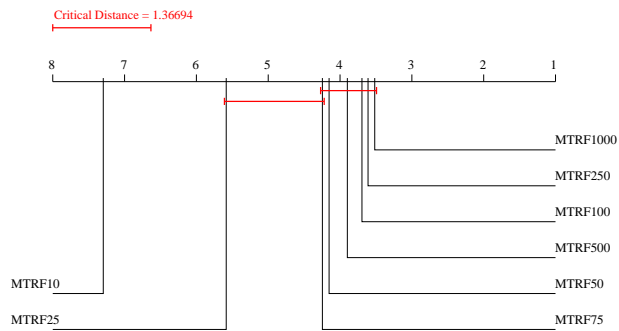
MTClassification - Micro Average MCC: Multi-Target Bagging



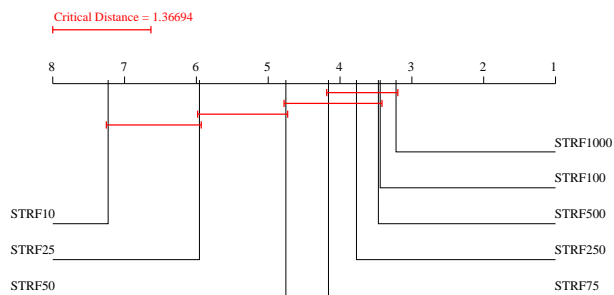
MTClassification - Micro Average MCC: Single-Target Bagging

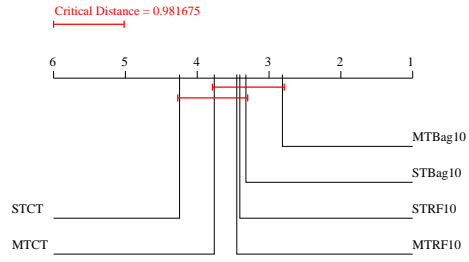
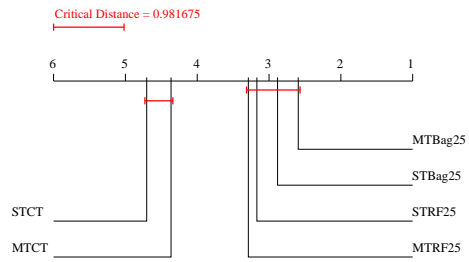
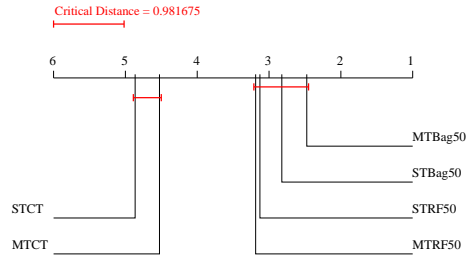
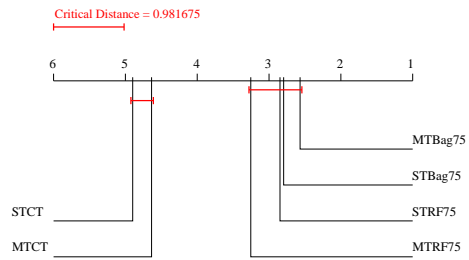


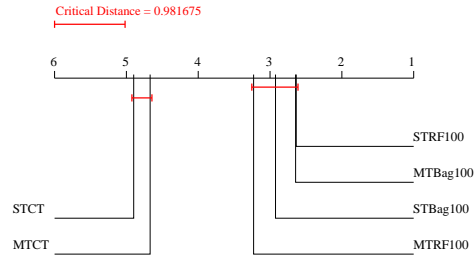
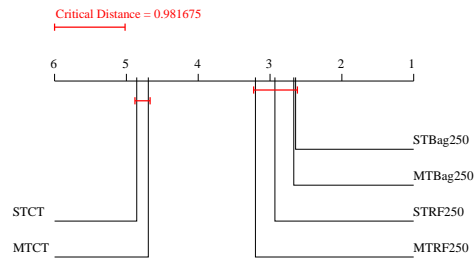
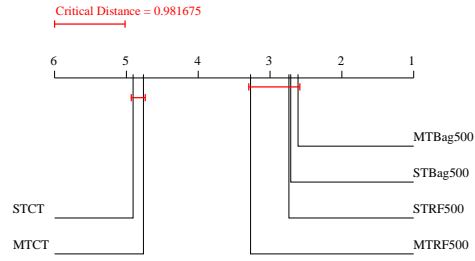
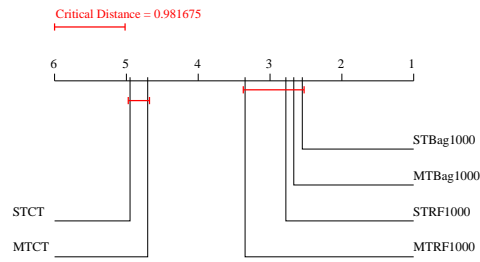
MTClassification - Micro Average MCC: Multi-Target Random Forest



MTClassification - Micro Average MCC: Single-Target Random Forest

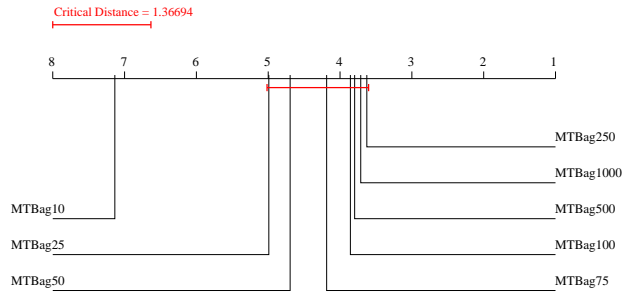


MTClassification - Micro Average MCC: Size10**MTClassification - Micro Average MCC: Size25****MTClassification - Micro Average MCC: Size50****MTClassification - Micro Average MCC: Size75**

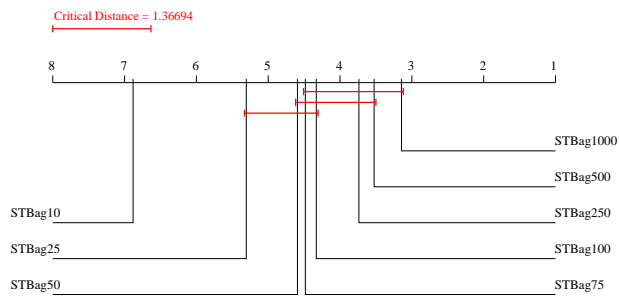
MTClassification - Micro Average MCC: Size100**MTClassification - Micro Average MCC: Size250****MTClassification - Micro Average MCC: Size500****MTClassification - Micro Average MCC: Size1000**

8 Multi-Target Classification - Macro Average MCC

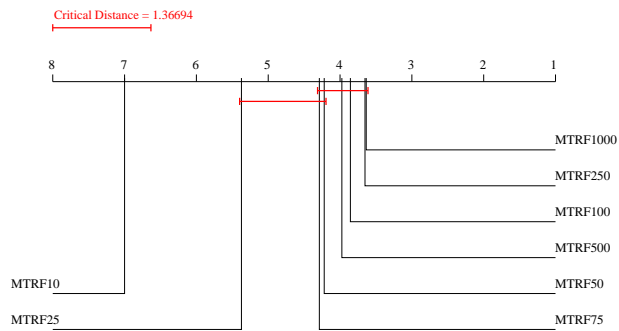
MTClassification - Macro Average MCC: Multi-Target Bagging



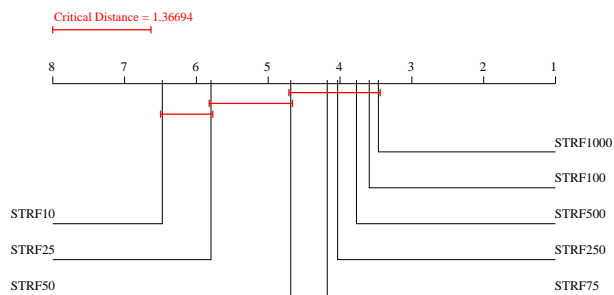
MTClassification - Macro Average MCC: Single-Target Bagging

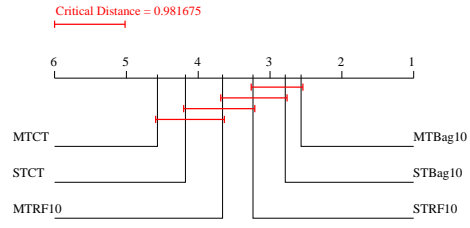
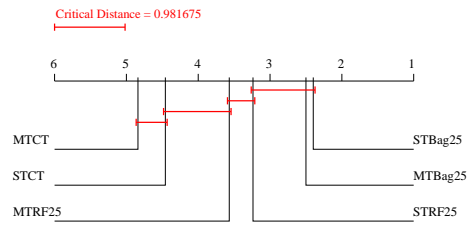
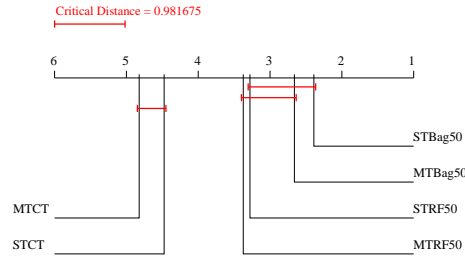
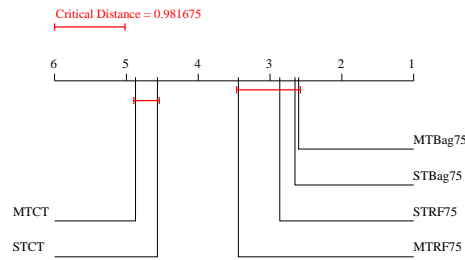


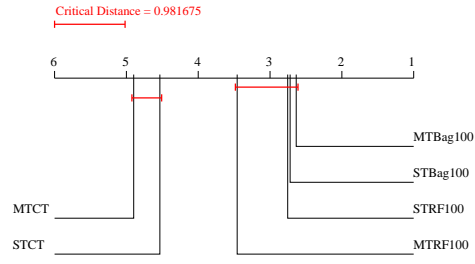
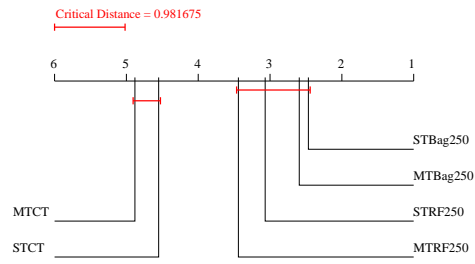
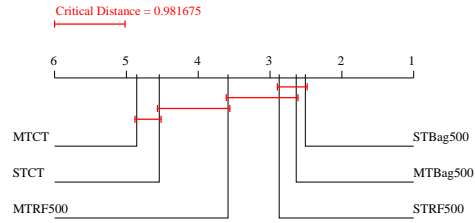
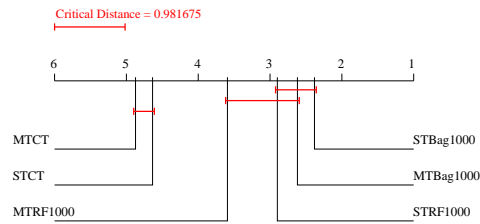
MTClassification - Macro Average MCC: Multi-Target Random Forest



MTClassification - Macro Average MCC: Single-Target Random Forest

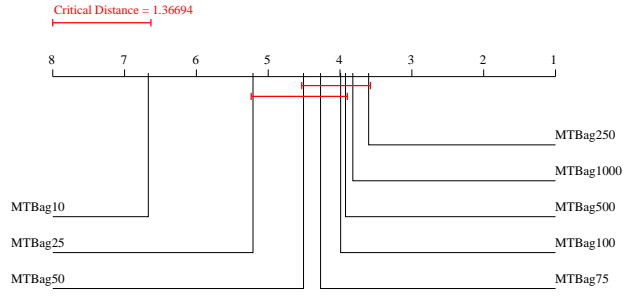


MTClassification - Macro Average MCC: Size10**MTClassification - Macro Average MCC: Size25****MTClassification - Macro Average MCC: Size50****MTClassification - Macro Average MCC: Size75**

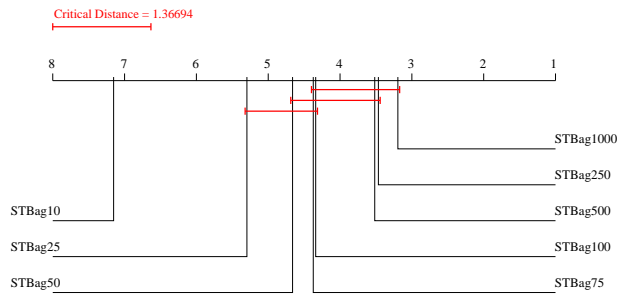
MTClassification - Macro Average MCC: Size100**MTClassification - Macro Average MCC: Size250****MTClassification - Macro Average MCC: Size500****MTClassification - Macro Average MCC: Size1000**

9 Multi-Target Classification - Micro Average BACC

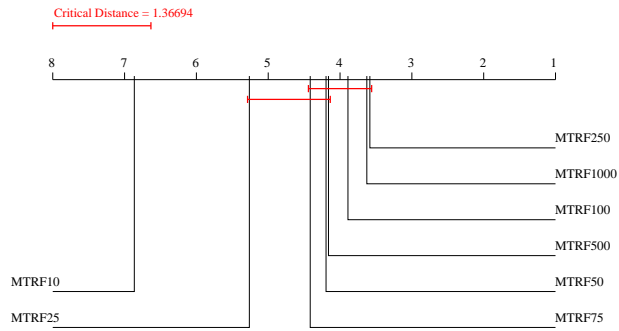
MTClassification - Micro Average BACC: Multi-Target Bagging



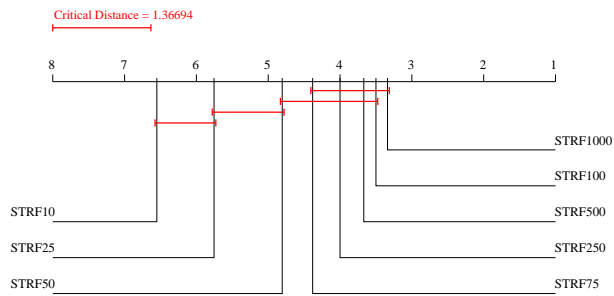
MTClassification - Micro Average BACC: Single-Target Bagging



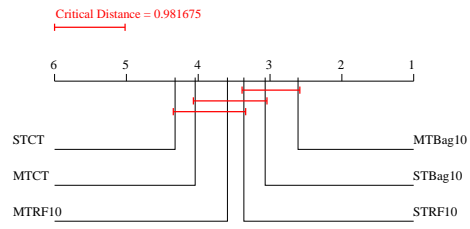
MTClassification - Micro Average BACC: Multi-Target Random Forest



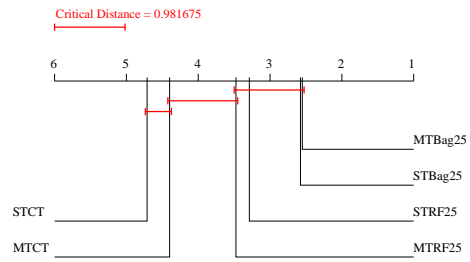
MTClassification - Micro Average BACC: Single-Target Random Forest



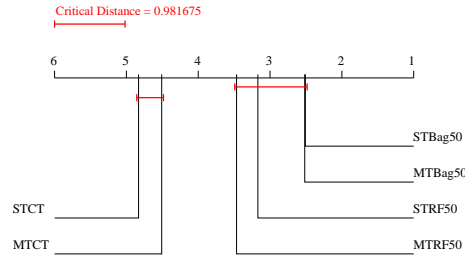
MTClassification - Micro Average BACC: Size10



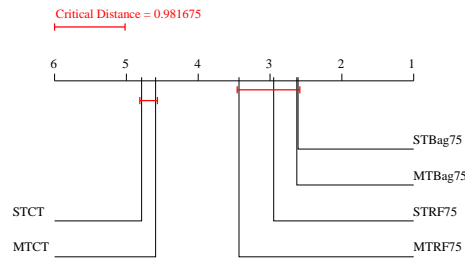
MTClassification - Micro Average BACC: Size25



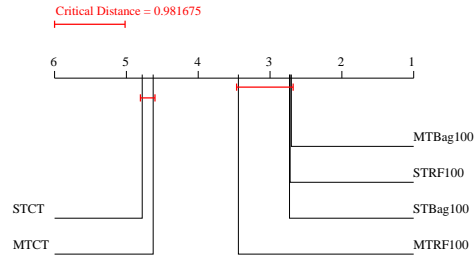
MTClassification - Micro Average BACC: Size50



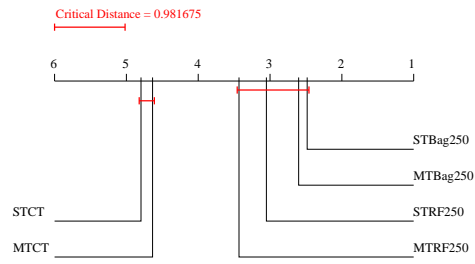
MTClassification - Micro Average BACC: Size75



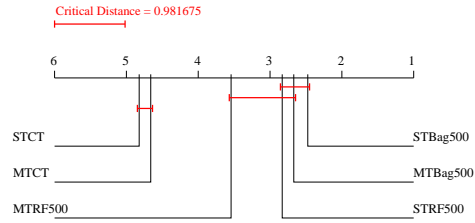
MTClassification - Micro Average BACC: Size100



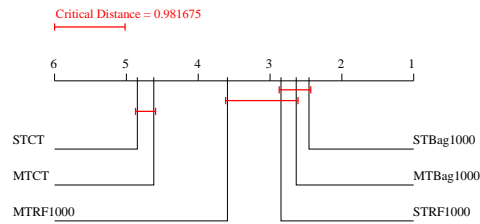
MTClassification - Micro Average BACC: Size250



MTClassification - Micro Average BACC: Size500

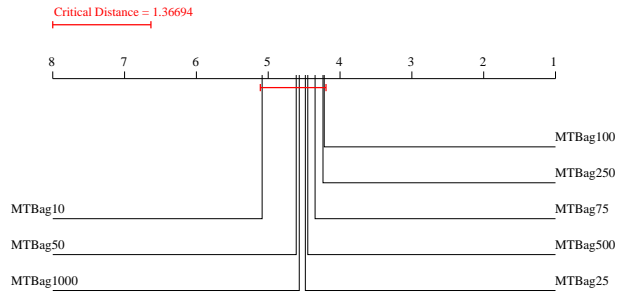


MTClassification - Micro Average BACC: Size1000

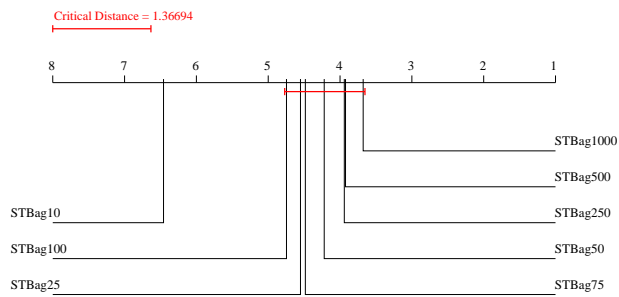


10 Multi-Target Classification - Macro Average BACC

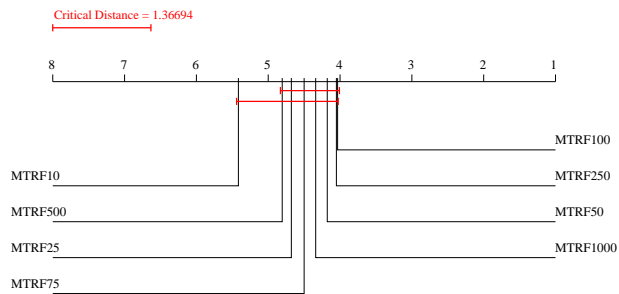
MTClassification - Macro Average BACC: Multi-Target Bagging



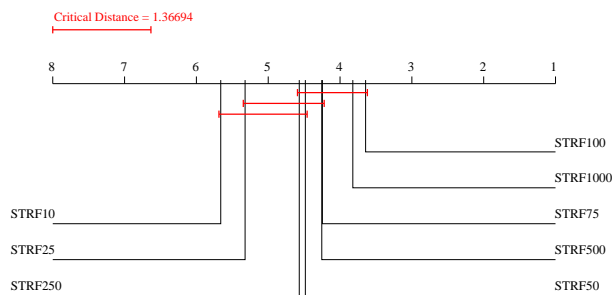
MTClassification - Macro Average BACC: Single-Target Bagging

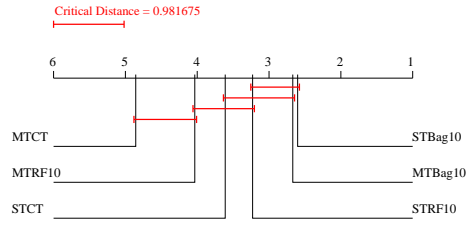
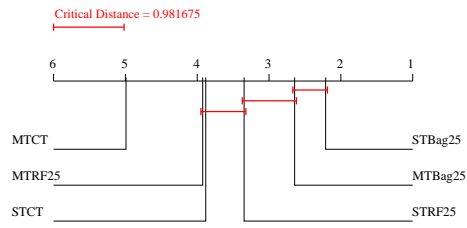
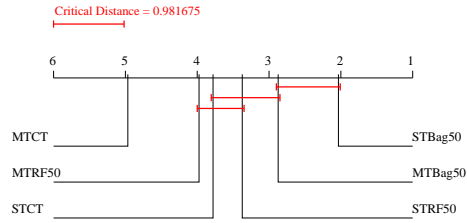
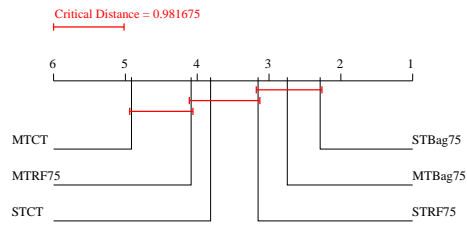


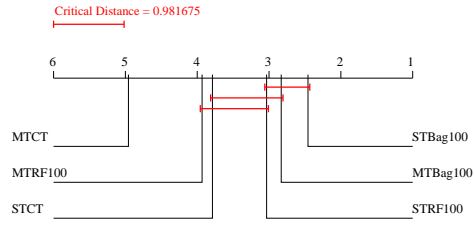
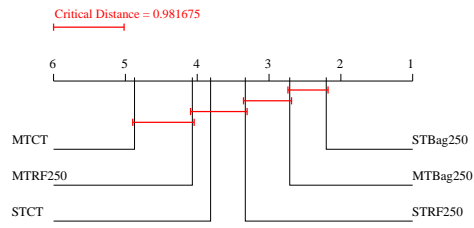
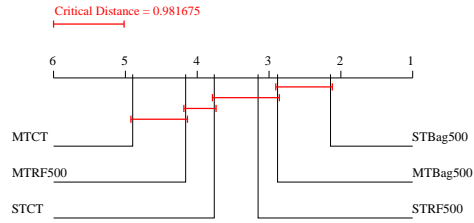
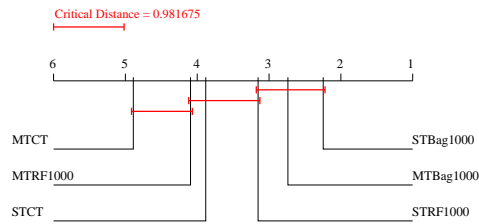
MTClassification - Macro Average BACC: Multi-Target Random Forest



MTClassification - Macro Average BACC: Single-Target Random Forest

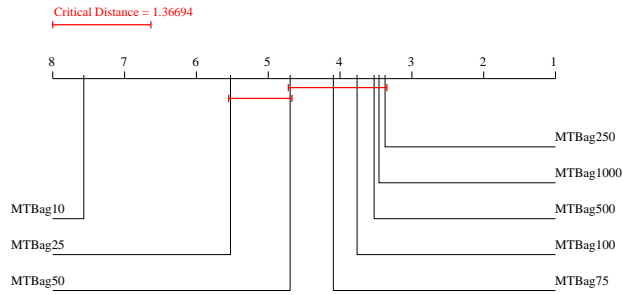


MTClassification - Macro Average BACC: Size10**MTClassification - Macro Average BACC: Size25****MTClassification - Macro Average BACC: Size50****MTClassification - Macro Average BACC: Size75**

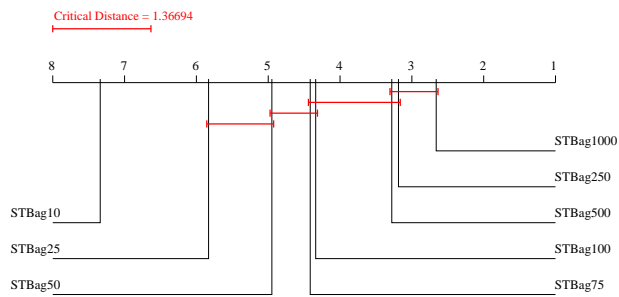
MTClassification - Macro Average BACC: Size100**MTClassification - Macro Average BACC: Size250****MTClassification - Macro Average BACC: Size500****MTClassification - Macro Average BACC: Size1000**

11 Multi-Target Classification - Micro Average DP

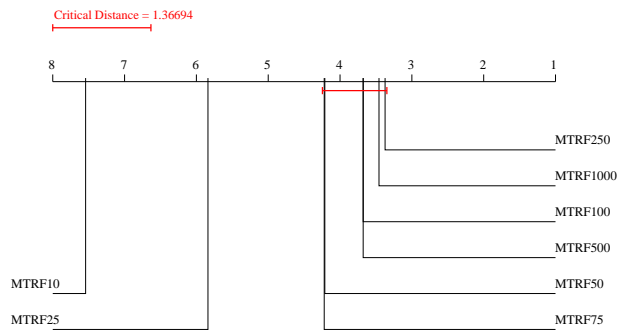
MTClassification - Micro Average DP: Multi-Target Bagging



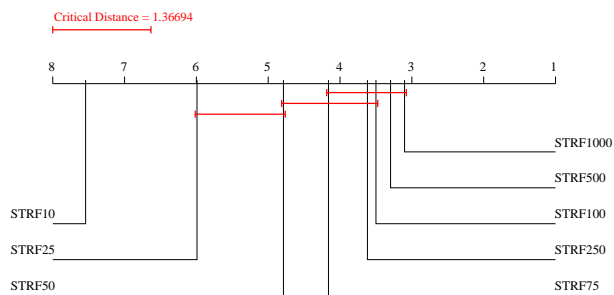
MTClassification - Micro Average DP: Single-Target Bagging

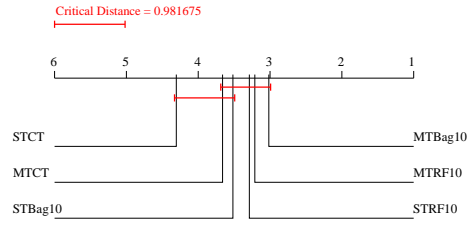
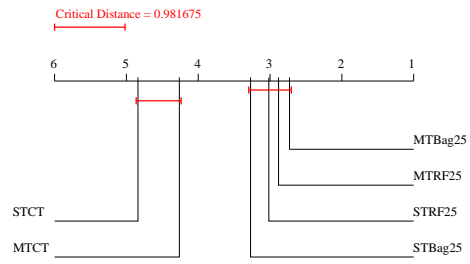
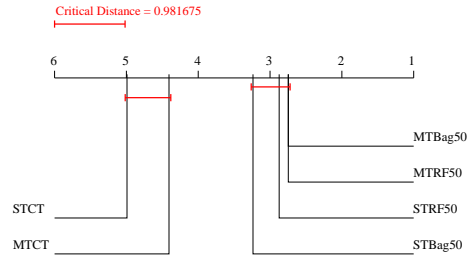
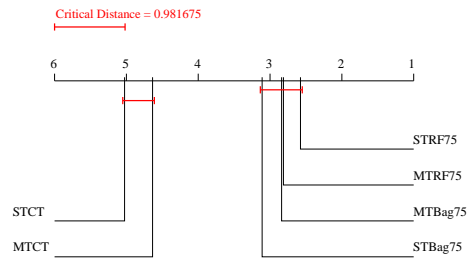


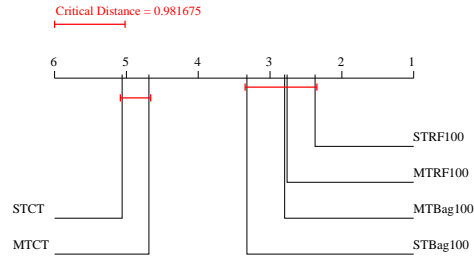
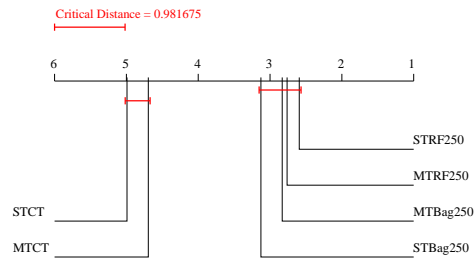
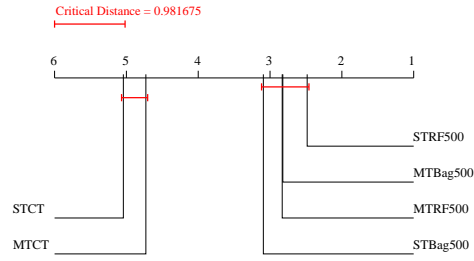
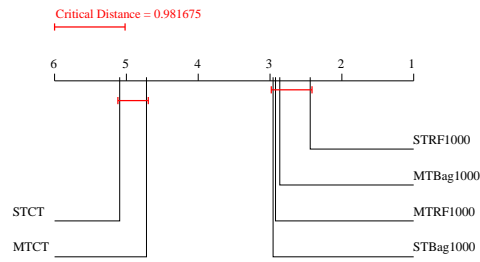
MTClassification - Micro Average DP: Multi-Target Random Forest



MTClassification - Micro Average DP: Single-Target Random Forest

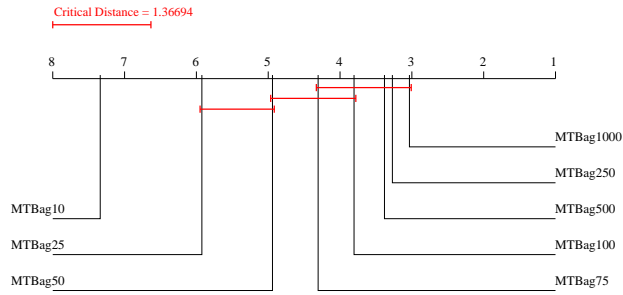


MTClassification - Micro Average DP: Size10**MTClassification - Micro Average DP: Size25****MTClassification - Micro Average DP: Size50****MTClassification - Micro Average DP: Size75**

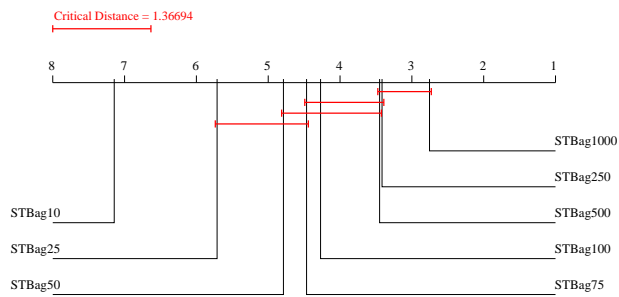
MTClassification - Micro Average DP: Size100**MTClassification - Micro Average DP: Size250****MTClassification - Micro Average DP: Size500****MTClassification - Micro Average DP: Size1000**

12 Multi-Target Classification - Macro Average DP

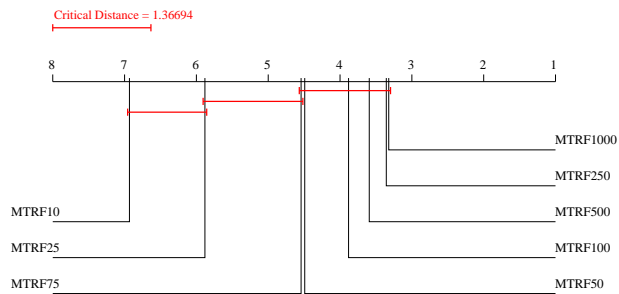
MTClassification - Macro Average DP: Multi-Target Bagging



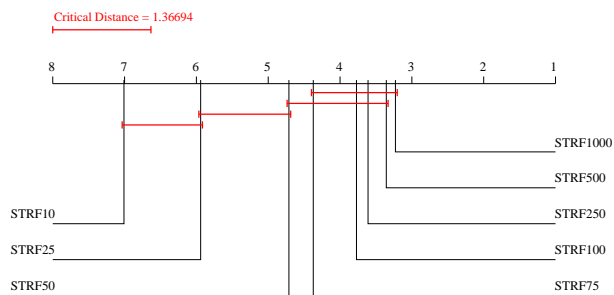
MTClassification - Macro Average DP: Single-Target Bagging

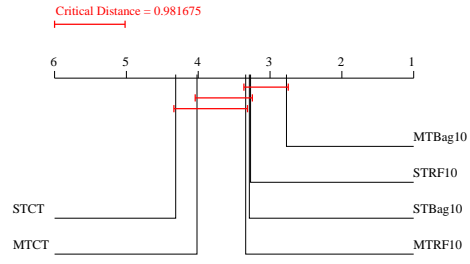
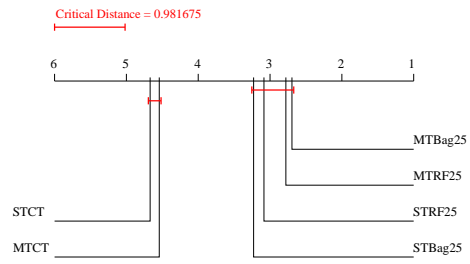
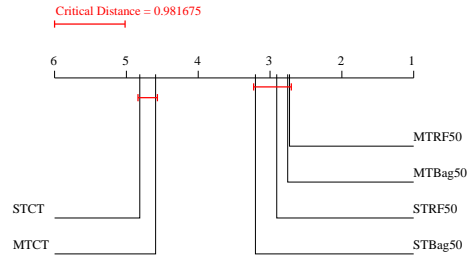
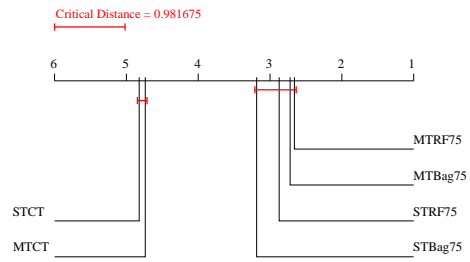


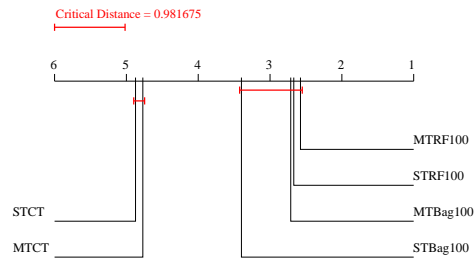
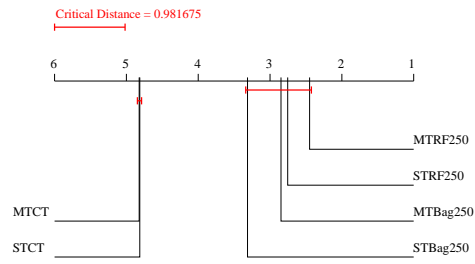
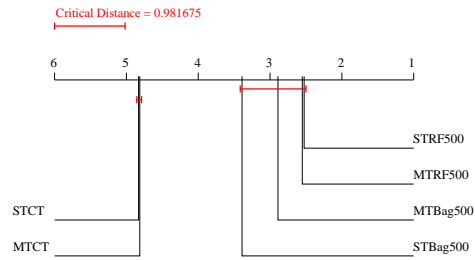
MTClassification - Macro Average DP: Multi-Target Random Forest



MTClassification - Macro Average DP: Single-Target Random Forest



MTClassification - Macro Average DP: Size10**MTClassification - Macro Average DP: Size25****MTClassification - Macro Average DP: Size50****MTClassification - Macro Average DP: Size75**

MTClassification - Macro Average DP: Size100**MTClassification - Macro Average DP: Size250****MTClassification - Macro Average DP: Size500****MTClassification - Macro Average DP: Size1000**