1. **Random Forest** 
   1. **Cross-validation (RQ2)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. The cross-validation performance of CM | | | | | |
|  | **π =0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |
| Firefox | 0.242 | 0.238 | 0.260 | 0.388 | 0.297 |
| Eclipse | 0.345 | 0.332 | 0.355 | 0.513 | 0.528 |
| Ant | 0.007 | 0.044 | 0.091 | 0.088 | -0.043 |
| Camel | 0.220 | 0.213 | 0.330 | 0.389 | 0.362 |
| Ivy | -0.149 | -0.144 | -0.012 | -0.130 | -0.330 |
| JEdit | -0.060 | -0.116 | 0.262 | -1.000 | -0.177 |
| Lucene | 0.657 | 0.653 | 0.677 | 0.540 | 0.579 |
| Poi | 0.547 | 0.542 | 0.562 | 0.404 | 0.424 |
| Tomcat | 0.113 | 0.148 | 0.291 | 0.357 | 0.049 |
| Xalan | 0.687 | 0.671 | 0.717 | 0.656 | 0.675 |
| Xerces | 0.598 | 0.522 | 0.624 | 0.703 | 0.478 |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. The cross-validation performance of NM | | | | | |  | 1. The cross-validation performance of AM | | | | | |
|  | **π=0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |  |  | **π=0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |
| **Firefox** | 0.416\* | 0.410\* | 0.500\* | 0.627\* | 0.397\* |  | **Firefox** | 0.435\* | 0.432\* | 0.504\* | 0.616\* | 0.426\* |
| **Eclipse** | 0.399\* | 0.396\* | 0.432\* | 0.544\* | 0.510\* |  | **Eclipse** | 0.444\* | 0.435\* | 0.484\* | 0.572\* | 0.560\* |
| **Ant** | 0.020 | 0.034 | 0.137\* | 0.165\* | -0.045 |  | **Ant** | 0.095\* | 0.135\* | 0.180\* | 0.141\* | 0.043\* |
| **Camel** | 0.367\* | 0.388\* | 0.630\* | 0.629\* | 0.442\* |  | **Camel** | 0.384\* | 0.400\* | 0.636\* | 0.644\* | 0.486\* |
| **Ivy** | -0.143 | -0.127 | -0.059 | -0.292 | -0.313 |  | **Ivy** | -0.168 | -0.140 | -0.082\* | -0.510 | -0.360\* |
| **JEdit** | -0.057\* | 0.144\* | 0.726\* | -1.000 | -0.032\* |  | **JEdit** | -0.058\* | 0.075\* | 0.676\* | -1.000 | -0.125\* |
| **Lucene** | 0.671\* | 0.678\* | 0.666 | 0.521 | 0.534\* |  | **Lucene** | 0.662\* | 0.657 | 0.665 | 0.530 | 0.552\* |
| **Poi** | 0.515 | 0.548 | 0.580\* | 0.414 | 0.415\* |  | **Poi** | 0.515\* | 0.547 | 0.562\* | 0.383 | 0.426 |
| **Tomcat** | 0.082 | 0.121 | 0.277 | 0.340 | 0.038 |  | **Tomcat** | 0.099 | 0.153 | 0.274 | 0.405 | 0.012 |
| **Xalan** | 0.722\* | 0.699\* | 0.663\* | 0.624\* | 0.657\* |  | **Xalan** | 0.730\* | 0.705\* | 0.707 | 0.647 | 0.672\* |
| **Xerces** | 0.720\* | 0.689\* | 0.734\* | 0.754\* | 0.445 |  | **Xerces** | 0.718\* | 0.654\* | 0.729\* | 0.740\* | 0.476 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | median | mini boxplot | Cliff’s *δ* | |
|  |  |  | NM vs. CM | AM vs. CM |
| CE | π=0.1 | CM | 0.322 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\rf.bmp | 0.096\* | 0.121\* |
| NM | 0.405 |
| AM | 0.434 |
| π=0.2 | CM | 0.312 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\rf.bmp | 0.121\* | 0.141\* |
| NM | 0.410 |
| AM | 0.428 |
| π=1.0 | CM | 0.360 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\rf.bmp | 0.157\* | 0.161\* |
| NM | 0.477 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\rf.bmp |
| AM | 0.500 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\rf.bmp |
| FIR | BPP | CM | 0.437 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\rf.bmp | 0.132\* | 0.140\* |
| NM | 0.530 |
| AM | 0.545 |
| AVG | CM | 0.345 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\rf.bmp | 0.024\* | 0.088\* |
| NM | 0.396 |
| AM | 0.420 |
|  |  |  |  | 0.049 0.690 |  |  |
| Fig.1. Overall ranking/classification performance under cross-validation | | | | | | |

* 1. **Across-release prediction (RQ3)**

|  |  |  |
| --- | --- | --- |
| Firefox(15) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Firefox_rf_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Firefox_rf_er.bmp |
| Eclipse(10) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Eclipse_rf_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Eclipse_rf_er.bmp |
| Ant(10) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Ant_rf_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Ant_rf_er.bmp |
| Jedit(10) | **F:\研二上\工作感知的网络度量缺陷预测\论文\intra\JEdit_rf_ce.bmp** | **F:\研二上\工作感知的网络度量缺陷预测\论文\intra\JEdit_rf_er.bmp** |
| Fig.2. Ranking/Classification performance under across-release prediction | | |
| 1. The Cliff’s δ of comparing nm/am vs. cm under across-release prediciton | | |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **NM vs. CM** | | | | |  | **AM vs. CM** | | | | |
|  | BPP | AVG | π=0.1 | π=0.2 | π=1.0 |  | BPP | AVG | π=0.1 | π=0.2 | π=1.0 |
| **Firefox** | 0.067 | 0.933 | 0.916 | 0.804 | 0.218 |  | 0.173 | 0.933 | 0.916 | 0.858 | 0.333 |
| **Eclipse** | -0.520 | 0.100 | -0.180 | -0.040 | -0.280 |  | 0.180 | 0.440 | 0.080 | 0.160 | 0.200 |
| **Ant** | -0.200 | -0.360 | -0.180 | -0.300 | -0.180 |  | -0.280 | -0.320 | -0.220 | -0.360 | -0.140 |
| **JEdit** | 0.100 | 0.200 | -0.160 | -0.060 | 0.080 |  | 0.100 | 0.220 | -0.060 | 0.080 | 0.120 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | median | mini boxplot | Cliff’s *δ* | |
|  |  |  | NM vs. CM | AM vs. CM |
| CE | π=0.1 | CM | 0.149 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\rf.bmp | 0.064 | 0.010 |
| NM | 0.207 |
| AM | 0.211 |
| π=0.2 | CM | 0.172 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\rf.bmp | 0.291\* | 0.321\* |
| NM | 0.225 |
| AM | 0.233 |
| π=1.0 | CM | 0.298 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\rf.bmp | 0.212 | 0.236 |
| NM | 0.298 |
| AM | 0.329 |
| FIR | BPP | CM | 0.427 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\rf.bmp | 0.177 | 0.227 |
| NM | 0.395 |
| AM | 0.418 |
| AVG | CM | 0.245 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\rf.bmp | 0.059 | 0.145 |
| NM | 0.425 |
| AM | 0.431 |
|  |  |  |  | 0.087 0.493 |  |  |
| Fig.3. Overall ranking/classification performance under across-release prediction | | | | | | |

* 1. **Inter-project prediction (RQ4)**

|  |  |
| --- | --- |
| F:\研二上\工作感知的网络度量缺陷预测\论文\inter\cart_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\inter\cart_er.bmp |
| Fig 4. Ranking/Classification performance under the inter-project prediction | |
| 1. The Cliff’s δ of comparing nm/am vs. cm under inter-project prediction | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **BPP** | **AVG** | **π=0.1** | **π=0.2** | **π=1.0** |
| **NM vs. CM** | 0.091 | 0.105 | 0.162\* | 0.154 | 0.142 |
| **AM vs. CM** | 0.071 | 0.124 | 0.138 | 0.140 | 0.109 |

1. **Classification and Regression Tree** 
   1. **Cross-validation (RQ2)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. The cross-validation performance of CM | | | | | |
|  | **π =0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |
| Firefox | 0.420 | 0.394 | 0.417 | 0.655 | 0.763 |
| Eclipse | 0.241 | 0.244 | 0.229 | 0.560 | 0.511 |
| Ant | -0.002 | 0.025 | 0.057 | 0.034 | -0.077 |
| Camel | 0.158 | 0.151 | 0.285 | 0.365 | 0.307 |
| Ivy | -0.137 | -0.084 | -0.319 | -0.156 | -0.129 |
| JEdit | -0.060 | -0.116 | -1.000 | -0.500 | -0.023 |
| Lucene | 0.504 | 0.497 | 0.537 | 0.409 | 0.426 |
| Poi | 0.458 | 0.480 | 0.451 | 0.304 | 0.355 |
| Tomcat | 0.069 | 0.087 | 0.035 | 0.296 | -0.035 |
| Xalan | 0.600 | 0.592 | 0.632 | 0.716 | 0.637 |
| Xerces | 0.460 | 0.408 | 0.192 | 0.232 | 0.195 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. The cross-validation performance of NM | | | | | |  | 1. The cross-validation performance of AM | | | | | |
|  | **π=0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |  |  | **π=0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |
| **Firefox** | 0.417 | 0.417\* | 0.476\* | 0.690\* | 0.774\* |  | **Firefox** | 0.420\* | 0.415\* | 0.485\* | 0.696\* | 0.781\* |
| **Eclipse** | 0.307\* | 0.309\* | 0.351\* | 0.599\* | 0.548\* |  | **Eclipse** | 0.293\* | 0.293\* | 0.337\* | 0.552 | 0.537\* |
| **Ant** | 0.029 | 0.051 | 0.114\* | 0.193\* | -0.036 |  | **Ant** | -0.008 | 0.018 | 0.075 | 0.120\* | -0.037 |
| **Camel** | 0.322\* | 0.359\* | 0.503\* | 0.618\* | 0.430\* |  | **Camel** | 0.309\* | 0.364\* | 0.464\* | 0.608\* | 0.401\* |
| **Ivy** | -0.124 | -0.061 | -0.398 | 0.033 | -0.100\* |  | **Ivy** | -0.130 | -0.099 | -0.407 | -0.068 | -0.108 |
| **JEdit** | 0.010 | 0.280 | -0.228 | 0.000 | -0.023 |  | **JEdit** | 0.010 | 0.280 | -0.228 | 0.000 | -0.023 |
| **Lucene** | 0.596\* | 0.581\* | 0.541 | 0.366 | 0.416 |  | **Lucene** | 0.591\* | 0.580\* | 0.541 | 0.384\* | 0.406 |
| **Poi** | 0.458 | 0.493 | 0.488 | 0.275 | 0.337\* |  | **Poi** | 0.436 | 0.457 | 0.402 | 0.233\* | 0.322\* |
| **Tomcat** | 0.151\* | 0.136\* | -0.016 | 0.276 | 0.031 |  | **Tomcat** | 0.079 | 0.072 | -0.102\* | 0.261 | -0.039 |
| **Xalan** | 0.686\* | 0.672\* | 0.660 | 0.719\* | 0.662\* |  | **Xalan** | 0.676\* | 0.666\* | 0.623 | 0.649\* | 0.612\* |
| **Xerces** | 0.655\* | 0.606\* | 0.391\* | 0.392\* | 0.173 |  | **Xerces** | 0.616\* | 0.574\* | 0.495\* | 0.492\* | 0.169 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | median | mini boxplot | Cliff’s *δ* | |
|  |  |  | NM vs. CM | AM vs. CM |
| CE | π=0.1 | CM | 0.286 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\cart.bmp | 0.127\* | 0.086 |
| NM | 0.359 |
| AM | 0.333 |
| π=0.2 | CM | 0.275 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\cart.bmp | 0.152\* | 0.112 |
| NM | 0.372 |
| AM | 0.351 |
| π=1.0 | CM | 0.279 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\cart.bmp | 0.114\* | 0.098 |
| NM | 0.373 |
| AM | 0.370 |
| FIR | BPP | CM | 0.390 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\cart.bmp | 0.115\* | 0.072 |
| NM | 0.482 |
| AM | 0.459 |
| AVG | CM | 0.275 | F:\研二上\工作感知的网络度量缺陷预测\论文\cross_validation\cart.bmp | 0.049\* | 0.021 |
| NM | 0.278 |
| AM | 0.276 |
|  |  |  |  | -0.020 0.663 |  |  |
| Fig.5. Overall ranking/classification performance under cross-validation | | | | | | |

* 1. **Across-release prediction (RQ3)**

|  |  |  |
| --- | --- | --- |
| Firefox(15) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Firefox_cart_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Firefox_cart_er.bmp |
| Eclipse(10) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Eclipse_cart_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Eclipse_cart_er.bmp |
| Ant(10) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Ant_cart_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Ant_cart_er.bmp |
| Jedit(10) | **F:\研二上\工作感知的网络度量缺陷预测\论文\intra\JEdit_cart_ce.bmp** | **F:\研二上\工作感知的网络度量缺陷预测\论文\intra\JEdit_cart_er.bmp** |
| Fig.6. Ranking/Classification performance under across-release prediction | | |
| 1. The Cliff’s δ of comparing nm/am vs. cm under across-release prediction | | |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **NM vs. CM** | | | | |  | **AM vs. CM** | | | | |
|  | BPP | AVG | π=0.1 | π=0.2 | π=1.0 |  | BPP | AVG | π=0.1 | π=0.2 | π=1.0 |
| **Firefox** | 0.067 | 0.067 | 0.138 | 0.129 | 0.582 |  | 0.209 | 0.022 | 0.076 | 0.173 | 0.458 |
| **Eclipse** | -0.280 | -0.160 | 0.020 | 0.040 | 0.440 |  | -0.160 | -0.140 | -0.120 | -0.020 | 0.650 |
| **Ant** | -0.220 | -0.260 | -0.320 | -0.500 | -0.880 |  | 0.300 | 0.040 | -0.060 | -0.320 | -0.580 |
| **JEdit** | 0.080 | -0.120 | -0.120 | -0.120 | -0.020 |  | 0.220 | 0.060 | 0.120 | 0.220 | 0.020 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | median | mini boxplot | Cliff’s *δ* | |
|  |  |  | NM vs. CM | AM vs. CM |
| CE | π=0.1 | CM | 0.148 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\cart.bmp | 0.035 | 0.020 |
| NM | 0.156 |
| AM | 0.180 |
| π=0.2 | CM | 0.146 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\cart.bmp | 0.153\* | 0.007 |
| NM | 0.160 |
| AM | 0.177 |
| π=1.0 | CM | 0.196 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\cart.bmp | 0.003 | 0.058 |
| NM | 0.230 |
| AM | 0.248 |
| FIR | BPP | CM | 0.386 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\cart.bmp | 0.006 | 0.050 |
| NM | 0.409 |
| AM | 0.397 |
| AVG | CM | 0.400 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\cart.bmp | 0.093 | 0.151 |
| NM | 0.413 |
| AM | 0.400 |
|  |  |  |  | -0.093 0.722 |  |  |
| Fig.7. Overall ranking/classification performance under across-release prediction | | | | | | |

* 1. **Inter-project prediction (RQ4)**

|  |  |
| --- | --- |
| F:\研二上\工作感知的网络度量缺陷预测\论文\inter\cart_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\inter\cart_er.bmp |
| Fig 8. Ranking/Classification performance under the inter-project prediction | |
| 1. The Cliff’s δ of comparing nm/am vs. cm under inter-project prediction | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **BPP** | **AVG** | **π=0.1** | **π=0.2** | **π=1.0** |
| **NM vs. CM** | 0.060 | -0.029 | -0.012 | 0.041 | -0.012 |
| **AM vs. CM** | -0.063 | -0.079 | -0.108 | -0.050 | -0.111\* |

1. **Support Vector Machine** 
   1. **Cross-validation (RQ2)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 1. The cross-validation performance of CM | | | | | |
|  | **π =0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |
| Firefox | 0.430 | 0.409 | 0.497 | 0.503 | 0.773 |
| Eclipse | 0.240 | 0.256 | 0.325 | 0.494 | 0.536 |
| Ant | -0.016 | -0.008 | -0.039 | 0.009 | -0.226 |
| Camel | 0.141 | 0.166 | 0.314 | 0.430 | 0.308 |
| Ivy | -0.170 | -0.173 | -0.064 | -0.690 | -0.637 |
| JEdit | -0.061 | -0.119 | 0.426 | -1.000 | -0.571 |
| Lucene | 0.605 | 0.595 | 0.637 | 0.646 | 0.542 |
| Poi | 0.505 | 0.515 | 0.533 | 0.569 | 0.436 |
| Tomcat | 0.059 | 0.031 | 0.060 | 0.225 | -0.270 |
| Xalan | 0.656 | 0.650 | 0.699 | 0.758 | 0.685 |
| Xerces | 0.586 | 0.531 | 0.569 | 0.887 | 0.588 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1. The cross-validation performance of NM | | | | | |  | 1. The cross-validation performance of AM | | | | | |
|  | **π=0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |  |  | **π=0.1** | **π=0.2** | **π=1.0** | **BPP** | **AVG** |
| **Firefox** | 0.529\* | 0.506\* | 0.606\* | 0.809\* | 0.789\* |  | **Firefox** | 0.541\* | 0.520\* | 0.590\* | 0.821\* | 0.779\* |
| **Eclipse** | 0.300\* | 0.316\* | 0.387\* | 0.573\* | 0.562\* |  | **Eclipse** | 0.343\* | 0.349\* | 0.382\* | 0.607\* | 0.568\* |
| **Ant** | -0.056\* | -0.027\* | 0.009\* | -0.108 | -0.275 |  | **Ant** | 0.061\* | 0.060\* | 0.044\* | 0.210\* | -0.069\* |
| **Camel** | 0.241\* | 0.258\* | 0.417\* | 0.567\* | 0.454\* |  | **Camel** | 0.258\* | 0.291\* | 0.400\* | 0.633\* | 0.459\* |
| **Ivy** | -0.149 | -0.120\* | -0.043\* | -0.252\* | -0.551\* |  | **Ivy** | -0.154\* | -0.164 | -0.046\* | -1.000 | -0.612\* |
| **JEdit** | -0.061\* | -0.119 | 0.431 | -1.000 | -0.559 |  | **JEdit** | -0.061\* | -0.119 | 0.390 | -1.000\* | -0.655\* |
| **Lucene** | 0.597 | 0.601 | 0.626 | 0.663\* | 0.516\* |  | **Lucene** | 0.641\* | 0.639\* | 0.660\* | 0.463\* | 0.523 |
| **Poi** | 0.477 | 0.536 | 0.543\* | 0.580 | 0.406\* |  | **Poi** | 0.526 | 0.527\* | 0.515\* | 0.399\* | 0.426 |
| **Tomcat** | 0.104\* | 0.100\* | 0.186\* | 0.454\* | -0.114\* |  | **Tomcat** | 0.054 | 0.028 | 0.062 | 0.252 | -0.256 |
| **Xalan** | 0.674\* | 0.665\* | 0.683\* | 0.792\* | 0.686 |  | **Xalan** | 0.687\* | 0.669\* | 0.699\* | 0.688\* | 0.681 |
| **Xerces** | 0.578\* | 0.513\* | 0.552\* | 0.902 | 0.581\* |  | **Xerces** | 0.623\* | 0.561\* | 0.616\* | 0.891 | 0.630\* |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | median | mini boxplot | Cliff’s *δ* | |
|  |  |  | NM vs. CM | AM vs. CM |
| CE | π=0.1 | CM | 0.292 |  | 0.046\* | 0.100\* |
| NM | 0.333 |
| AM | 0.371 |
| π=0.2 | CM | 0.294 |  | 0.053\* | 0.094\* |
| NM | 0.345 |
| AM | 0.375 |
| π=1.0 | CM | 0.365 |  | 0.070\* | 0.064 |
| NM | 0.431 |
| AM | 0.420 |
| FIR | BPP | CM | 0.502 |  | 0.130\* | 0.071\* |
| NM | 0.586 |
| AM | 0.589 |
| AVG | CM | 0.448 |  | 0.015\* | 0.037\* |
| NM | 0.476 |
| AM | 0.490 |
|  |  |  |  | -0.112 0.784 |  |  |
| Fig.9. Overall ranking/classification performance under cross-validation | | | | | | |

* 1. **Across-release prediction (RQ3)**

|  |  |  |
| --- | --- | --- |
| Firefox(15) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Firefox_svm_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Firefox_svm_er.bmp |
| Eclipse(10) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Eclipse_svm_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Eclipse_svm_er.bmp |
| Ant(10) | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Ant_svm_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\Ant_svm_er.bmp |
| Jedit(10) | **F:\研二上\工作感知的网络度量缺陷预测\论文\intra\JEdit_svm_ce.bmp** | **F:\研二上\工作感知的网络度量缺陷预测\论文\intra\JEdit_svm_er.bmp** |
| Fig.10. Ranking/Classification performance under across-release prediction | | |
| 1. The Cliff’s δ of comparing nm/am vs. cm under across-release prediction | | |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **`** | **NM vs. CM** | | | | |  | **AM vs. CM** | | | | |
|  | BPP | AVG | π=0.1 | π=0.2 | π=1.0 |  | BPP | AVG | π=0.1 | π=0.2 | π=1.0 |
| **Firefox** | 0.831 | 0.004 | 0.387 | 0.404 | 0.387 |  | 0.947 | -0.191 | 0.404 | 0.422 | 0.271 |
| **Eclipse** | 0.520 | -0.040 | 0.280 | 0.380 | 0.100 |  | 0.560 | -0.020 | 0.320 | 0.400 | -0.080 |
| **Ant** | -0.340 | -0.040 | -0.160 | -0.260 | -0.340 |  | -0.240 | 0.000 | -0.100 | -0.280 | -0.300 |
| **JEdit** | -0.080 | -0.080 | -0.100 | -0.200 | -0.480 |  | -0.020 | -0.140 | -0.080 | -0.220 | -0.400 |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | median | mini boxplot | Cliff’s *δ* | |
|  |  |  | NM vs. CM | AM vs. CM |
| CE | π=0.1 | CM | 0.217 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\svm.bmp | 0.451\* | 0.544\* |
| NM | 0.245 |
| AM | 0.262 |
| π=0.2 | CM | 0.211 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\svm.bmp | 0.017\* | 0.051\* |
| NM | 0.259 |
| AM | 0.266 |
| π=1.0 | CM | 0.364 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\svm.bmp | 0.189 | 0.211 |
| NM | 0.362 |
| AM | 0.365 |
| FIR | BPP | CM | 0.411 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\svm.bmp | 0.189 | 0.211 |
| NM | 0.549 |
| AM | 0.530 |
| AVG | CM | 0.569 | F:\研二上\工作感知的网络度量缺陷预测\论文\intra\svm.bmp | 0.030 | 0.004 |
| NM | 0.577 |
| AM | 0.569 |
|  |  |  |  | 0.161 0.769 |  |  |
| Fig.11. Overall ranking/classification performance under across-release prediction | | | | | | |

* 1. **Inter-project prediction (RQ4)**

|  |  |
| --- | --- |
| F:\研二上\工作感知的网络度量缺陷预测\论文\inter\svm_ce.bmp | F:\研二上\工作感知的网络度量缺陷预测\论文\inter\svm_er.bmp |
| Fig 12. Ranking/Classification performance under the inter-project prediction | |
| 1. The Cliff’s δ of comparing nm/am vs. cm under inter-project prediction | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **BPP** | **AVG** | **π=0.1** | **π=0.2** | **π=1.0** |
| **NM vs. CM** | 0.020 | 0.043\* | 0.079 | 0.064 | 0.010 |
| **AM vs. CM** | -0.061 | 0.051\* | 0.080 | 0.066 | -0.004 |