Evaluation Report

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# Introduction

This report covers our analysis on the performance of the best algorithm from our proposed system against other software fault prediction algorithms devised from other research papers.

# Setup

After evaluating the performances of each of our algorithms (which was done in a separate evaluation report), the best performing would then be selected for comparison with other algorithms from other research papers, such as the SDAEsSTE approach devised by Tong et al. The algorithms are compared based on the AUC and F1-scores results which were present on the research paper themselves, and the data is tabulated based on the various datasets which were used on the algorithms. The comparisons can be found in the table at the results section.

# Results

The table below shows our results when compared against other algorithms from other research papers.

**Table 1: AUC and F1-score results from the algorithms**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Dataset** | Results | | | | | |
| Our Algorithm | | VOT(ROF, RF, LB) (Yucalar et al.) | | SDAEsSTE (Tong et al.) | |
| AUC | F1 | AUC | F1 | AUC | F1 |
| CM1 | 0.806 | 0.391 | N/A | N/A | 0.8373 | 0.2882 |
| JM1 | 0.654 | 0.325 | N/A | N/A | 0.7731 | 0.3174 |
| KC1 | 0.625 | 0.386 | N/A | N/A | 0.7426 | 0.3946 |
| MC1 | 0.958 | 0.457 | N/A | N/A | 0.9614 | 0.2217 |
| MC2 | 0.815 | 0.635 | N/A | N/A | 0.6846 | 0.5871 |
| MW1 | 0.73 | 0.08 | N/A | N/A | 0.8597 | 0.4073 |
| PC1 | 0.844 | 0.244 | N/A | N/A | 0.9062 | 0.3062 |
| PC2 | 0.893 | 0.25 | N/A | N/A | 0.9264 | 0.2154 |
| PC3 | 0.859 | 0.326 | N/A | N/A | 0.8381 | 0.3545 |
| PC4 | 0.889 | 0.527 | N/A | N/A | 0.8846 | 0.5544 |
| cm1 | 0.752 | 0.264 | 0.784 | N/A | N/A | N/A |
| jm1 | 0.633 | 0.285 | 0.753 | N/A | N/A | N/A |
| kc1 | 0.636 | 0.291 | 0.845 | N/A | N/A | N/A |
| pc1 | 0.865 | 0.354 | 0.876 | N/A | N/A | N/A |

# Appendix

(Results 1)