Abstract

Defective modules in the software pose considerable risk by decreasing customer satisfaction and by increasing the development and maintenance costs. Therefore, in software development life cycle, it is essential to predict defective modules in the early stage so as to improve software developers' ability to identify the defect-prone modules and focus quality assurance activities. Many researchers focused on classification algorithm for predicting the software defect. On the other hand, classifiers ensemble can effectively improve classification performance when compared with a single classifier. This paper mainly addresses using ensemble approach of Support Vector Machine (SVM) for fault prediction. Ensemble classifier was examined for Eclipse Package level dataset and NASA KC1 dataset. From the research, it is clear that proposed ensemble of Support Vector Machine is superior to individual approach for software fault prediction in terms of classification rate through Root Mean Square Error Rate (RMSE), Area Under ROC Curve (AUC-ROC) and Area Under Precision and Recall curve (AUC-PR).
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Index Terms

Computer Science
Software Engineering
Keywords
Defect prediction  Software metrics  Machine learning  Class level metrics
Method level metrics