Adaptive Approach of Fault Prediction in Software Modules by using Discriminative and Generative Model of Machine Learning

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Abstract

Software quality assurance is the most important activity during the development of software. Defective software modules may increase costs and decrease customer satisfaction. Hence, effective defect prediction models or techniques are very important in order to deliver efficient software. In this research different machine learning algorithms are used to predict three main prediction performance measures i.e. precision, recall and f-measure. The accuracy of the software modules is being calculated. Different classifiers are also used in order to predict the values of these measures by using important attributes only. The results obtained after applying both the techniques i.e. attribute selection and without attribute selection, on all the datasets, are then analysed and best predicted results are chosen in order to predict the correct values of prediction performance measures. The accuracy of some software modules can be improved to 91.16%, recall and precision to 1 after using attribute selection techniques in CM1 dataset. In PC1 dataset the accuracy has been improved to 93.778%.

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Adaptive Approach of Fault Prediction in Software Modules by using Discriminative and Generative Models


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