

PREDICTION OF SOFTWARE MAINTENANCE EFFORT ON THE BASIS OF UNIVARIATE APPROACH WITH SUPPORT VECTOR MACHINE

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ABSTRACT

The connection among object oriented metrics and software maintenance effort is complex and non-linear. Therefore, there is wide research area in development and application of sophisticated techniques which can be used to construct models for predicting software maintenance effort. The aim of this paper is to evaluate Support Vector Machine for Regression in software maintainability prediction using object-oriented metrics to construct models for prediction of Software Maintenance Effort. Support Vector Machine has already proved its importance in Banking Sector and in other areas also. We are using SVM with Radial kernel function. It is observed that Support Vector Machine can be used for constructing accurate models for prediction of software maintenance effort which gives most accurate models for prediction. We are using maintenance effort data of software product QUES (Quality Evaluation System) in this study. The dependent variable in our study is maintenance effort. The independent variables are eight Object Oriented metrics. We will verify the dataset by Univariate performance basis. The results show that the MARE of MPC in QUES Dataset is 0.644, while other metrics have larger MARE value. Thus we found that Univariate approach of evaluating the OO Metrics is useful in constructing software quality model.

KEYWORDS: Kernels Function, Object, Oriented Metric, Regression, Software quality, Support Vector Machine and Univariate