

# Software Defect Prediction

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**Abstract:** *Software defect prediction is a crucial task in software engineering, as it aims to identify potential defects in software systems during their development lifecycle. In recent years, machine learning approaches have been applied to this problem, with Support Vector Machine (SVM) being one of the most widely used models. In this project, we propose a software defect prediction model based on SVM, which aims to accurately classify software modules as either defective or non-defective. To train our SVM model, we use a dataset consisting of various software metrics, such as code complexity, code length, and code coverage. Feature selection and normalization is performed in pre-processing of data, and then apply the SVM algorithm to build the classification model. We evaluate the performance of our model using several metrics, including accuracy, precision, recall, and F1-score. Our experimental results show that the proposed SVM-based software defect prediction model achieves high accuracy and outperforms several baseline models. Overall, our proposed SVM-based software defect prediction model has the potential to significantly improve the quality of software development by detecting defects early in the development cycle*

**Keywords:** *Software Defect Prediction, SVM, Classification, Software Quality Assurance, Machine Learning, Supervised Learning.*

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