Abstract

The research in the field of defect and change proneness prediction of software has gained a lot of momentum over the past few years. Indeed, effective prediction models can help software practitioners in detecting the change prone modules of a software, allowing them to optimize the resources used for software testing. However, the development of the prediction models used to determine change prone classes are dependent on the availability of historical data from the concerned software. This can pose a challenge in the development of effective change prediction models. The aim of this paper is to address this limitation by using the data from models based on similar projects to predict the change prone classes of the concerned software. This inter project technique can facilitate the development of generalized models which can be used to ascertain change prone classes for multiple software projects. It would also lead to optimization of critical time and resources in the testing and maintenance phases. This work evaluates the effectiveness of statistical and machine learning techniques for developing such models using receiver operating characteristic analysis. The observations of the study indicate varied results for the different techniques used.
Applicability of Inter Project Validation for Determination of Change Prone Classes

Index Terms

Computer Science

Information Sciences

Keywords

- Change proneness
- Inter project validation
- Object oriented metrics
- Receiver operating characteristic analysis.