

## Software Defect Analysis- Eclipse Dataset

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**Abstract :** The presence of defects or bugs in software can lead to costly setbacks, operational inefficiencies, and compromised user experiences. The integration of Machine Learning(ML) techniques has emerged to predict and preemptively address software defects. ML represents a proactive strategy aimed at identifying potential anomalies, errors, or vulnerabilities within code before they manifest as operational issues. By analyzing historical data, such as code changes, feature im- plementations, and defect occurrences. This en- ables development teams to anticipate and mitigate these issues, thus enhancing software quality, reducing maintenance costs, and ensuring smoother user interactions. In this work, we used a recommendation system to improve the performance of ML models in terms of predicting the code severity and effort estimation.

**Keywords :** software engineering, machine learning, bugs detection, effort estimation

**Conference Title :** ICDSAAI 2023 : International Conference on Data Science and Artificial Intelligence

**Conference Location :** Paris, France

**Conference Dates :** December 25-26, 2023