



Universität Innsbruck

Department of Computer Science  
**Research Group Quality Engineering**

## SEMINAR PAPER

# Comparison of Defect Prediction Models

Martin Durcek, Alberte Thegler

Supervisor: Ass.-Prof. Dr. Michael Felderer

Innsbruck, May 17, 2017



**Abstract:** Many data mining methods have already been introduced into defect predictions. In our work, we tested and compared the results obtained from Naive Bayes and J48 decision tree based defect prediction model. For prediction itself, metrics like .... were used. We also argue about the topic of general defect prediction model and usage of the very same model within several environments.

## 1 Introduction

Software Defect Prediction is one of the most active research areas in software engineering. In spite of diligent planning, documentation, and proper process adherence in software development, occurrences of defects are inevitable. Finding and fixing defects costs companies around the world huge amounts of money and therefore any automated help in reliably predicting where faults are, and focusing the efforts of testers, has a significant impact on the cost of production and maintenance of software. Various regression techniques and recently also machine learning algorithms had been utilized to provide better insight into software repositories and help developers as well as testers to invest their time at work more effectively. Although some voices are critical about the importance and rentability of creating a defect prediction models as a part of software development projects, there is no doubt such model, if implemented correctly, represents additional tool to increase work effectiveness as well as software reliability.



# Bibliography

- [1] Zigang Pan and Tamer Başar. H-control of markovian jump systems and solutions to associated piecewise-deterministic differential games. In *New trends in dynamic games and applications*, pages 61–94. Springer, 1995.