

Department of Computer Science and Software Engineering

Master Thesis Defense

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ABSTRACT

Software evolution represents a major phase in the development life cycle of software systems. In recent years, software evolution has been recognized as one of the most important and challenging areas in the field of software engineering. Studies even show that 65-80% of the system lifetime will be spent on maintenance and evolution activities.

Software repositories, such as versioning and bug tracking systems are essential parts of various software maintenance activities. Given the often large amount information stored in these repositories, researchers have proposed to mine and analyze these large knowledge bases in order to study and support various aspects of the evolution of a software system. In this thesis, we introduce a common ontological representation to support the mining and analysis of software repositories. In addition to this common representation, we introduce the *SVN Ontologizer* and *Bugzilla Ontologizer tools* that provide automation for both, data extraction from remote repositories and ontology population. A case study is presented to illustrate the applicability of the present approach in supporting software maintainers during the analysis and mining of these software repositories