
Bachelor/Master Thesis Topic

Grammar-Based Generation of Debugging Hypotheses for Libre Office

Motivation and Background

Software debugging is a crucial part of software development. It enables assurance, of correctness, completeness and reliability of software systems. Current state-of-the-art software debugging techniques employ techniques like Delta Debugging[1], which works with simple input data structures and files. In practice, many programs require highly structured and complex files, eg input files for programs like Libre Office. Creating good debugging hypothesis for programs with highly structured and complex files is still an open research question.

Goals

The goal of this project is to create generic grammar-based debugging algorithms for Libre Office.

Description of the Task

- Getting familiar with the probabilistic grammar for Libre Office
- Implement a grammar based debugging approach for Libre office
- Perform an experimental evaluation of the debugging approach

Research Type

Theoretical Aspects: *****

Industrial Relevance: *****

Implementation *****

Prerequisite

The student should be enrolled in the bachelor/master of computer science program, and has completed the required course modules to start a bachelor/master thesis.

Skills required

Programming skills in Java or C++, understanding of, or willingness to learn, the software engineering and software analysis foundations needed for the project.

References

[1] Andreas Zeller: Yesterday, My Program Worked. Today, It Does Not. Why? ESEC / SIGSOFT FSE 1999: 253-267

Contacts

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Application

Please contact me during my office hours or send me an email with the title: “[ThesisProject]-GrammarBasedDebuggingofLibreOffice” to se-career@informatik.hu-berlin.de