

Optimizing Symbolic Execution Through Taint Analysis and Path Prioritization

Bachelor thesis

Natural Science Faculty of the University of Basel Department of Mathematics and Computer Science Databases and Information Systems (DBIS) Group https://dbis.dmi.unibas.ch/

Examiner: Dr. Marco Vogt Supervisor: Prof. Dr. Christopher Scherb

Ruben Hutter ruben.hutter@unibas.ch 2020-065-934

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Abstract

This thesis discusses the thesis template using some examples of the Turing Machine.

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Introduction

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- 1.1 Motivation: Why symbolic execution needs improvement
- 1.2 Problem Statement
- 1.3 Goals and Contributions
- 1.4 Structure of the Thesis

Background

This is the body of the thesis.

- 2.1 Symbolic Execution
- 2.1.1 Core Concepts

 Test

- 2.1.2 Path Explosion Problem
- 2.1.3 Existing Techniques for Path Pruning
- 2.2 Taint Analysis
- 2.2.1 Definition and Use Cases

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Conceptual Implementation

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Practical Implementation

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Evaluation

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Conclusion

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Future Work

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Related Work

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Usage of Al

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Appendix



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