Chapter 1 - Introduction

1.1 Problem

1.2 Proposed Solution

1.3 Summary of Contributions

1.4 Outline

2 - Background

2.1 Software Product Lines

2.1.1 Feature Models

2.1.2 Configuration Knowledge

2.1.3 Safe Composition Verification

2.2 Theory of Software Product Line Refinement

2.3 Safe Refactor

3 - Tool Support for Checking SPL Evolutions

3.1 All Product Pairs

3.2 Impacted Class

3.4 Dependences

3.5 Behavioral Changes

4 – New strategies for making software product line evolution safer

4.1 Impacted Class False - Negatives

4.2 Extended Impacted Class

4.3 False – Positives

4.4 Evosuite

Chapter 5 - Evaluation

5.1 Subject characterization

5.2 Experimental setup

5.3 Results

5.4 Discussion

5.5 Threats to Validity

5.5.1 Construct validity

5.5.2 Internal validity

5.5.3 External validity

Chapter 6 - Conclusions

6.1 Related Work

6.2 Future Work