

Automated Repair of Termination Errors

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CCS Concepts: • **Do Not Use This Code** → **Generate the Correct Terms for Your Paper**; *Generate the Correct Terms for Your Paper*; Generate the Correct Terms for Your Paper; Generate the Correct Terms for Your Paper.

Additional Key Words and Phrases: program termination, program repair, program synthesis

1 INTRODUCTION

State of programming these days.(copilot)

Motivating example (copilot)

2 OVERVIEW

The analysis of the vendor code

From summary to higher-order sanitiser

Analysis of the client code

Instantiation of sanitiser

3 APPROACH

4 EVALUATION

Does the vendor code make safety assumption of client code?

Can our approach accurately make the implicit assumptions explicit?

Can our approach avoid unsafe usage of vendor code?

Experiment plans: Test our approach on library usage

Test our approach on LLM-generated vendor code

Implementation TODOs: 1. Implement the instantiation from higher-order sanitiser to C code (by 27th Feb) 2. Automate the entire tool (minor) 3. For the test of libraries, modify infer to store some external calls in infer database (along with 4) 4. Testing for both usage, library usage takes longer as we need to build the client for infer (ideally by 5th, at least one library tested, or LLM tested) (by 15th)

5 RELATED WORK

6 CONCLUSION

REFERENCES