

Cross-Language Generalization in Sub-10B Models for Code Vulnerability Detection

Assignee Research

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Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: How does the cross-language generalization accuracy of sub-10B models fine-tuned on Python vulnerability datasets compare to Java-fine-tuned counterparts when evaluated on mixed-language CWE. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.0/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Fine-Tuning Code Language Models to Detect Cross-Language Bugs. Research question: How does the cross-language generalization accuracy of sub-10B models fine-tuned on Python vulnerability datasets compare to Java-fine-tuned counterparts when evaluated on mixed-language CWE benchmarks?.

2 Methodology

Systematic literature search across multiple databases yielded 14 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 4.0/10.

3 Results

14 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 4.0/10.

4 Limitations

This report is a machine-generated literature synthesis and does not constitute original research. Automated retrieval and verification may introduce errors or omissions. Review scores reflect automated assessment, not human peer review. Readers should consult primary sources for authoritative information.

References

- <http://arxiv.org/abs/2507.21954v2>
- <http://arxiv.org/abs/2504.16584v1>
- <http://arxiv.org/abs/2508.11281v3>