

Fine-Tuned CodeT5 Robustness in Cross-Domain Code Migration Tasks

Assignee Research

May 30, 2026

Abstract

This report synthesises findings from 11 peer-reviewed papers addressing the following research question: How robust are fine-tuned CodeT5 models when evaluated on cross-domain code migration tasks (e.g., Python to Java) using Pass@K and Exact Match metrics. Context: In the fast-paced evolution of software development, Large Language Models (LLMs) have become indispensable tools for tasks such as code generation, completion, analysis, and bug fixing. Ensuring the robustness of these models against potential vulnerabilities from 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 3.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Improving the Robustness of Large Language Models for Code Tasks via Fine-tuning with Perturbed Data. Research question: How robust are fine-tuned CodeT5 models when evaluated on cross-domain code migration tasks (e.g., Python to Java) using Pass@K and Exact Match metrics?.

2 Methodology

Systematic literature search across multiple databases yielded 11 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 3.7/10.

3 Results

11 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 3.7/10.

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/2510.08325v2>
- <http://arxiv.org/abs/2602.11411v1>
- <http://arxiv.org/abs/1710.01504v1>