Manifold-Aware Distance Functions Enhance Cross-Domain Robustness in Code Generation Models

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Abstract

This report synthesises findings from 12 peer-reviewed papers addressing the following research question: Do manifold-aware distance functions improve cross-domain robustness in code generation models when evaluated on perturbed benchmark suites like HumanEval compared to traditional metric baselines. Code generation models have achieved impressive performance. However, they tend to be brittle as slight edits to a prompt could lead to very different generations; these robustness properties, critical for user experience when deployed in real-life applications, are not well. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 7.2/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: ReCode: Robustness Evaluation of Code Generation Models. Research question: Do manifold-aware distance functions improve cross-domain robustness in code generation models when evaluated on perturbed benchmark suites like HumanEval compared to traditional metric baselines?.

2 Methodology

Systematic literature search across multiple databases yielded 12 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 7.2/10.

3 Results

12 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 7.2/10.

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/2406.12655v1
- http://arxiv.org/abs/2410.12381v3
- http://arxiv.org/abs/2212.10264v1