

Diffusion-Based vs. Contrastive Learning Models in Cross-Language Code Translation

Assignee Research

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Abstract

This report synthesises findings from 12 peer-reviewed papers addressing the following research question: How do diffusion-based code models perform compared to contrastive learning methods in cross-language code translation from Python to Java on the MBPP dataset when evaluated using CodeBLEU and. 4 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.3/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: InterCode: Standardizing and Benchmarking Interactive Coding with Execution Feedback. Research question: How do diffusion-based code models perform compared to contrastive learning methods in cross-language code translation from Python to Java on the MBPP dataset when evaluated using CodeBLEU and execution accuracy?.

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 4.3/10.

3 Results

12 papers retrieved. 4 claims extracted; 0 independently verified. Quality review score: 4.3/10.

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.

5 Extracted Claims

Claim	Verified	Confidence
The success rate of models in the Single Turn and Try Again settings for both the InterCodeBash and SQL datasets are co	×	0.06
The models evaluated include OpenAI (text-davinci-003, gpt-3.5-turbo, gpt-4), PaLM-2 (text-bison-001, chat-bison-001), a	×	0.04
Single Turn is a zero-shot attempt where the model generates code based on a simple task description.	×	0.05
Try Again is an iterative feedback setup where the model can interact with the system multiple times until task completi	×	0.03

References

- <http://arxiv.org/abs/1804.07878v2>
- <http://arxiv.org/abs/2306.14898v3>
- <http://arxiv.org/abs/2303.12869v1>