

# Uniform Alignment vs. Branch-Aware Preference Alignment in Cross-Domain Code Generation Efficiency and Correctness

Assignee Research

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## Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: What is the trade-off between inference time efficiency and solution correctness when comparing uniform alignment versus branch-aware preference alignment in cross-domain self-invoking code. Repeated sampling with a verifier is the standard way to allocate test-time compute for code generation, with pass@ $K$  as the canonical metric. Yet the standard policy class draws  $K$  independent samples from a single answer distribution, so attempts often collapse onto. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 3.2/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: Cast a Wider Net: Coordinated Pass@K Policy Optimization for Code Reasoning. Research question: What is the trade-off between inference time efficiency and solution correctness when comparing uniform alignment versus branch-aware preference alignment in cross-domain self-invoking code generation tasks on MBPP Pro?.

## 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 3.2/10.

### **3 Results**

14 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 3.2/10.

### **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/2412.21199v2>
- <http://arxiv.org/abs/2604.26923v1>
- <http://arxiv.org/abs/2605.27000v1>