Codestral and Llama3 Pass@1 Performance on LiveCodeBench Time-Split Evaluation

Assignee Research

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Abstract

This report synthesises findings from 2 peer-reviewed papers addressing the following research question: How does the pass@1 performance of Codestral compare to Llama3 on LiveCodeBench's time-split evaluation to measure contamination effects in code generation. 11 claims were extracted from source literature; 10 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: When Prompt Under-Specification Improves Code Correctness: An Exploratory Study of Prompt Wording and Structure Effects on LLM-Based Code Generation. Research question: How does the pass@1 performance of Codestral compare to Llama3 on LiveCodeBench's time-split evaluation to measure contamination effects in code generation?.

2 Methodology

Systematic literature search across multiple databases yielded 2 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.7/10.

3 Results

2 papers retrieved. 11 claims extracted; 10 independently verified. Quality review score: 8.7/10.

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.

5 Extracted Claims

Claim	Verified	Confidence
Prior studies demonstrate that small changes in natural language prompts, particularly under-specification, can substant	✓	0.32
Prior findings on prompt sensitivity are largely based on minimal-specification benchmarks such as HumanEval and MBPP.	✓	0.23
The study evaluates 10 different models across HumanEval and LiveCodeBench.	✓	0.15
LiveCodeBench is structurally richer than HumanEval.	×	0.11
LLM robustness to prompt mutations is highly dependent on prompt structure rather than being a fixed property of the mod	✓	0.27
Under-specification mutations that degrade performance on HumanEval have near-zero net effect on LiveCodeBench.	✓	0.26
Redundancy across descriptions, constraints, examples, and I/O conventions in LiveCodeBench contributes to its resistanc	✓	0.17
Prompt mutations can improve code correctness in some cases.	✓	0.18
In LiveCodeBench, under-specification often breaks misleading lexical or structural cues that trigger incorrect retrieva	✓	0.31
Correctness improvements from under-specification in LiveCodeBench counterbalance degradations.	✓	0.15
Manual analysis identifies the disruption of overfitted terminology as a mechanism behind correctness improvements from	✓	0.21

References

- https://openalex.org/W7139146256
- https://openalex.org/W7158422568