

LongNav-R1 and Single-Turn VLA Inference Latency on RxR-CE Benchmark

Assignee Research

May 30, 2026

Abstract

This report synthesises findings from 10 peer-reviewed papers addressing the following research question: How does the inference latency of LongNav-R1 compare to single-turn VLA policies when evaluated on the RxR-CE navigation benchmark using standard desktop GPUs. This paper develops LongNav-R1, an end-to-end multi-turn reinforcement learning (RL) framework designed to optimize Visual-Language-Action (VLA) models for long-horizon navigation. Unlike existing single-turn paradigm, LongNav-R1 reformulates the navigation decision process as a. 0 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: LongNav-R1: Horizon-Adaptive Multi-Turn RL for Long-Horizon VLA Navigation. Research question: How does the inference latency of LongNav-R1 compare to single-turn VLA policies when evaluated on the RxR-CE navigation benchmark using standard desktop GPUs?.

2 Methodology

Systematic literature search across multiple databases yielded 10 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

10 papers retrieved. 0 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.

References

- <http://arxiv.org/abs/2602.12351v1>
- <http://arxiv.org/abs/2512.18007v1>
- <http://arxiv.org/abs/2509.09372v2>