Zero-Shot Task Success Rates of VLA-Adapter and Distilled Multimodal Action Models in RoboBench

Assignee Research

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Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: What is the difference in zero-shot task success rates between VLA-Adapter and distilled multimodal action models on long-horizon manipulation tasks in RoboBench. 8 claims were extracted from source literature; 1 was independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Diffusion Trajectory-guided Policy for Long-horizon Robot Manipulation. Research question: What is the difference in zero-shot task success rates between VLA-Adapter and distilled multimodal action models on long-horizon manipulation tasks in RoboBench?.

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 4.5/10.

3 Results

14 papers retrieved. 8 claims extracted; 1 independently verified. Quality review score: 4.5/10.

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 Diffusion Trajectory-guided Policy (DTP) achieves a 25% higher average success rate than state-of-the-art baselines	✓	0.23
The DTP approach requires only consumer-grade GPUs for training.	×	0.07
In the HULC D$\rightarrow$D setting, DTP achieved an average sequence length of 3.55, compared to 3.30 for HULC++.	×	0.02
In the HULC ABC$\rightarrow$D setting, DTP achieved success rates of 0.890, 0.773, 0.679, 0.592, and 0.497 for tasks 1 through 5 res	×	0.03
In the HULC ABC$\rightarrow$D setting, DTP achieved an average sequence length of 3.43 when pre-training was enabled, compared to 3.	×	0.08
In real-world experiments, DTP achieved an average success rate of 0.84 across Pick Bread, Pick Strawberry, Open Trash,	×	0.04
In real-world long-horizon tasks (e.g., ABCAC, ACABC), DTP achieved an average sequence length of 4.6, compared to 2.0 f	×	0.10
DTP completed 5 out of 5 trials for the ABCAC, ACABC, CABCA, and BCACA tasks in real-world experiments.	×	0.04

References

- http://arxiv.org/abs/2508.19958v2
- http://arxiv.org/abs/2502.10040v2
- http://arxiv.org/abs/2602.12351v1