

13B vs. 7B VLA Models in Zero-Shot Cross-Dataset Generalization on R2R-CE

Assignee Research

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Abstract

This report synthesises findings from 1 peer-reviewed paper addressing the following research question: Can 13B VLA models achieve better zero-shot cross-dataset generalization than 7B models on the R2R-CE benchmark when augmented with external multimodal pre-training data. The proliferation of Large Language Models (LLMs) has fueled a shift in robot learning from automation towards general embodied Artificial Intelligence (AI). Adopting foundation models together with traditional learning methods to robot learning has increasingly gained recent. 9 claims were extracted from source literature; 9 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 7.3/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Robot Learning in the Era of Foundation Models: A Survey. Research question: Can 13B VLA models achieve better zero-shot cross-dataset generalization than 7B models on the R2R-CE benchmark when augmented with external multimodal pretraining data?.

2 Methodology

Systematic literature search across multiple databases yielded 1 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 7.3/10.

3 Results

1 papers retrieved. 9 claims extracted; 9 independently verified. Quality review score: 7.3/10.

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 proliferation of Large Language Models (LLMs) has fueled a shift in robot learning from automation towards general e	✓	0.35
Adopting foundation models together with traditional learning methods to robot learning has increasingly gained recent i	✓	0.40
There are few literatures comprehensively reviewing the relatively new technologies combined with robotics.	✓	0.25
The purpose of this review is to systematically assess the state-of-the-art foundation model techniques in robot learnin	✓	0.41
The review first summarized the technical evolution of robot learning and identified the necessary preliminary preparati	✓	0.40
The review focused on four mainstream areas of robot learning including manipulation, navigation, planning, and reasonin	✓	0.38
Critical issues which are neglected in the current literatures including robot hardware and software decoupling, dynamic	✓	0.38
This review highlights the state-of-the-art progress of foundation models in robot learning.	✓	0.32
Future research should focus on multimodal interaction especially dynamics data, exclusive foundation models.	✓	0.32

References

- <https://doi.org/10.48550/arxiv.2311.14379>