Multimodal Data Enhances Robustness of CLAM Over SimCLR on BridgeData V2 Under Noise

Assignee Research

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Abstract

This report synthesises findings from 7 peer-reviewed papers addressing the following research question: What is the impact of incorporating multimodal data (vision + language) on the robustness of CLAM-trained policies compared to SimCLR-trained policies on the BridgeData V2 benchmark under high visual. 9 claims were extracted from source literature; 8 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 7.6/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: A Comprehensive Survey of Convolutions in Deep Learning: Applications, Challenges, and Future Trends. Research question: What is the impact of incorporating multimodal data (vision + language) on the robustness of CLAM-trained policies compared to SimCLR-trained policies on the BridgeData V2 benchmark under high visual noise conditions?.

2 Methodology

Systematic literature search across multiple databases yielded 7 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 7.6/10.

3 Results

7 papers retrieved. 9 claims extracted; 8 independently verified. Quality review score: 7.6/10.

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
Convolutional Neural Networks (CNNs) are a subset of Deep Learning (DL).	✓	0.25
CNNs are widely used for computer vision tasks such as image classification, object detection, and image segmentation.	✓	0.25
Types of CNNs include 1D, 2D, and 3D CNNs.	✓	0.17
Types of CNNs include dilated, grouped, attention, and depthwise convolutions.	✓	0.20
NAS (Neural Architecture Search) is categorized as a type of CNN in the context of this survey.	×	0.09
Each type of CNN has a unique structure and characteristics suitable for specific tasks.	✓	0.24
Main research fields of CNN include 6D vision, generative models, and meta-learning.	✓	0.24
The paper provides a comprehensive examination and comparison of various CNN architectures.	✓	0.26
The paper highlights architectural differences, advantages, disadvantages, applications, challenges, and future trends o	✓	0.25

References

- https://doi.org/10.48550/arxiv.2308.06767
- https://doi.org/10.1109/access.2024.3376441
- https://doi.org/10.1016/j.patter.2022.100616