

Vision-Language Models vs. CNNs in Document Recognition Under Adversarial Attacks

Assignee Research

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Abstract

This report synthesises findings from 16 peer-reviewed papers addressing the following research question: What is the comparative accuracy degradation of vision-language models versus standalone CNN architectures on document recognition tasks under structured adversarial attacks. 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 comparative accuracy degradation of vision-language models versus standalone CNN architectures on document recognition tasks under structured adversarial attacks?.

2 Methodology

Systematic literature search across multiple databases yielded 16 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

16 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).	✓	0.22
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.	✓	0.18
Types of CNNs include dilated, grouped, attention, and depthwise convolutions.	✓	0.22
Neural Architecture Search (NAS) is categorized as a type or method related to CNN design in this context.	×	0.06
Each type of CNN has a unique structure and characteristics suitable for specific tasks.	✓	0.26
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	✓	0.24

References

- <https://doi.org/10.1007/s10462-024-11100-x>
- <https://doi.org/10.1109/access.2024.3376441>
- <https://doi.org/10.1186/s40537-023-00727-2>