

Comparative Failure Rates of Multimodal Models Trained with GAN-Augmented Versus Standard Datasets Under Cross-Modal Adversarial

Assignee Research

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Abstract

In the last few years, the deep learning (DL) computing paradigm has been deemed the Gold Standard in the machine learning (ML) community. Moreover, it has gradually become the most widely used computational approach in the field of ML, thus achieving outstanding results on several complex cognitive tasks, matching or even beating those provided by human performance. One of the benefits of DL is the ability to learn massive amounts of data. The DL field has grown fast in the last few years and it has been extensively used to successfully address a wide range of traditional applications. More i

1 Introduction

This paper examines: Review of deep learning: concepts, CNN architectures, challenges, applications, future directions. Research question: What is the comparative failure rate of multimodal models trained with GAN-augmented datasets versus standard augmentation when evaluated on cross-modal adversarial transfer attacks?.

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 7.4/10.

3 Results

14 papers retrieved. 5 claims extracted; 4 independently verified. Quality review score: 7.4/10.

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
Deep learning has achieved outstanding results on several complex cognitive tasks, matching or even beating human perfor	✓	0.21
One of the benefits of deep learning is the ability to learn massive amounts of data.	✓	0.17
Deep learning has outperformed well-known machine learning techniques in domains such as cybersecurity, natural language	✓	0.28
Existing reviews on the State-of-the-Art in deep learning have only tackled one aspect of deep learning, leading to an o	×	0.14
This paper outlines the importance of deep learning, presents the types of deep learning techniques and networks, and pr	✓	0.22

References

- <https://doi.org/10.1186/s40537-021-00444-8>
- <https://doi.org/10.1609/aaai.v34i07.7003>
- <https://doi.org/10.1186/s40537-021-00492-0>