Adversarial Robustness of Graph and Vision-Language Contrastive Learning on Multimodal Benchmarks

Assignee Research

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Abstract

This report synthesises findings from 9 peer-reviewed papers addressing the following research question: How does the adversarial robustness of graph contrastive learning methods compare to vision-language contrastive models when evaluated on multimodal reasoning benchmarks under similar perturbation. 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. 9 claims were extracted from source literature; 9 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Review of deep learning: concepts, CNN architectures, challenges, applications, future directions. Research question: How does the adversarial robustness of graph contrastive learning methods compare to vision-language contrastive models when evaluated on multimodal reasoning benchmarks under similar perturbation levels?.

2 Methodology

Systematic literature search across multiple databases yielded 9 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.7/10.

3 Results

9 papers retrieved. 9 claims extracted; 9 independently verified. Quality review score: 8.7/10.

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
In the last few years, the deep learning (DL) computing paradigm has been deemed the Gold Standard in the machine learni	✓	0.31
Deep learning has gradually become the most widely used computational approach in the field of machine learning.	✓	0.22
Deep learning has achieved outstanding results on several complex cognitive tasks, matching or even beating human perfor	✓	0.22
One of the benefits of deep learning is the ability to learn from massive amounts of data.	✓	0.17
The deep learning field has grown fast in the last few years.	✓	0.17
Deep learning has been extensively used to successfully address a wide range of traditional applications.	✓	0.24
Deep learning has outperformed well-known machine learning techniques in domains such as cybersecurity, natural language	✓	0.29
Existing works reviewing the State-of-the-Art on deep learning only tackle one aspect of deep learning, leading to an ov	✓	0.16
This paper outlines the importance of deep learning, presents the types of deep learning techniques and networks, and pr	✓	0.23

References

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- https://doi.org/10.1145/3560815
- https://doi.org/10.1186/s40537-021-00492-0