Robustness of LightGCL, SimGCL, and DCL on Corrupted Human-Object Interaction Datasets

Assignee Research

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Abstract

This report synthesises findings from 1 peer-reviewed paper addressing the following research question: How does the robustness of contrastive learning frameworks like LightGCL, SimGCL, and DCL compare when evaluated on corrupted human-object interaction datasets using mAP@k metrics. Contrastive learning-based recommendation algorithms have significantly advanced the field of self-supervised recommendation, particularly with BPR as a representative ranking prediction task that dominates implicit collaborative filtering. However, the presence of. 8 claims were extracted from source literature; 8 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.3/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Self-supervised Contrastive Learning for Implicit Collaborative Filtering. Research question: How does the robustness of contrastive learning frameworks like LightGCL, SimGCL, and DCL compare when evaluated on corrupted human-object interaction datasets using mAP@k metrics?.

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 8.3/10.

3 Results

1 papers retrieved. 8 claims extracted; 8 independently verified. Quality review score: 8.3/10.

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
Contrastive learning-based recommendation algorithms have significantly advanced the field of self-supervised recommenda	✓	0.39
BPR is a representative ranking prediction task that dominates implicit collaborative filtering.	✓	0.33
The presence of false-positive and false-negative examples in recommendation systems hampers accurate preference learnin	✓	0.35
The proposed method leverages positive feature augmentation and negative label augmentation to improve the self-supervis	✓	0.32
Theoretical analysis demonstrates that the proposed learning method is equivalent to maximizing the likelihood estimatio	✓	0.32
The efficient negative label augmentation technique samples unlabeled examples with a probability linearly dependent on	✓	0.36
The efficient negative label augmentation technique enables efficient augmentation in constant time complexity.	✓	0.26
The proposed method achieves significant improvements over the widely used BPR optimization objective while maintaining	✓	0.27

References

- https://doi.org/10.48550/arxiv.2403.07265