Noise Injection in XSimGCL Enhances Downstream Recommendation Performance Over Baseline Augmentations

Assignee Research

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Abstract

This report synthesises findings from 12 peer-reviewed papers addressing the following research question: To what extent does the noise injection strategy in XSimGCL improve downstream recommendation performance (NDCG@10) when pre-trained on corrupted user-item graphs compared to baseline augmentation. Human knowledge provides a formal understanding of the world. Knowledge graphs that represent structural relations between entities have become an increasingly popular research direction toward cognition and human-level intelligence. 8 claims were extracted from source literature; 8 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: A Survey on Knowledge Graphs: Representation, Acquisition, and Applications. Research question: To what extent does the noise injection strategy in XSimGCL improve downstream recommendation performance (NDCG@10) when pre-trained on corrupted user-item graphs compared to baseline augmentation methods like edge dropping or node feature masking?.

2 Methodology

Systematic literature search across multiple databases yielded 12 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.5/10.

3 Results

12 papers retrieved. 8 claims extracted; 8 independently verified. Quality review score: 8.5/10.

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
Knowledge graphs that represent structural relations between entities have become an increasingly popular research direc	✓	0.37
The survey provides a comprehensive review of the knowledge graph covering overall research topics about: 1) knowledge g	✓	0.46
The survey proposes a full-view categorization and new taxonomies on topics related to knowledge graphs.	✓	0.20
Knowledge graph embedding is organized from four aspects: representation space, scoring function, encoding models, and a	✓	0.35
For knowledge acquisition, especially knowledge graph completion, embedding methods, path inference, and logical rule re	✓	0.40
The survey explores several emerging topics, including metarelational learning, commonsense reasoning, and temporal know	✓	0.31
The survey provides a curated collection of data sets and open-source libraries on different tasks related to knowledge	✓	0.27
The survey includes a thorough outlook on several promising research directions in the field of knowledge graphs.	✓	0.20

References

- https://doi.org/10.1186/s40537-021-00444-8
- https://doi.org/10.1109/access.2019.2950985
- https://doi.org/10.1109/tnnls.2021.3070843