

LightGCL Scalability and Robustness in Self-Supervised Recommendation Systems

Assignee Research

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Abstract

This report synthesises findings from 6 peer-reviewed papers addressing the following research question: How does the inference efficiency of LightGCL scale with dataset size compared to SimGCL and DCL when evaluated on perturbed HOI datasets with robustness metrics. In recent years, neural architecture-based recommender systems have achieved tremendous success, but they still fall short of expectation when dealing with highly sparse data. Self-supervised learning (SSL), as an emerging technique for learning from unlabeled data, has. 8 claims were extracted from source literature; 7 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: Self-Supervised Learning for Recommender Systems: A Survey. Research question: How does the inference efficiency of LightGCL scale with dataset size compared to SimGCL and DCL when evaluated on perturbed HOI datasets with robustness metrics?.

2 Methodology

Systematic literature search across multiple databases yielded 6 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

6 papers retrieved. 8 claims extracted; 7 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
Neural architecture-based recommender systems fall short of expectation when dealing with highly sparse data.	✓	0.28
Self-supervised learning (SSL) is a technique for learning from unlabeled data.	✓	0.25
The paper proposes an exclusive definition of Self-Supervised Recommendation (SSR).	✓	0.20
Existing SSR methods are categorized into four types: contrastive, generative, predictive, and hybrid.	✓	0.18
The authors released an open-source library named SELFRec.	×	0.09
The SELFRec library is hosted at https://github.com/Coder-Yu/SELFRec .	✓	0.19
The SELFRec library incorporates a wide range of SSR models and benchmark datasets.	✓	0.23
Experiments using the SELFRec library yielded findings regarding the selection of self-supervised signals for enhancing	✓	0.25

References

- <https://doi.org/10.1145/3689037>
- <https://doi.org/10.48550/arxiv.2203.15876>
- <https://doi.org/10.1007/s10994-023-06313-0>