

Adaptive Depth in Heterogeneous GNNs: Latency and Memory Trade-offs on Large-Scale Graphs

Assignee Research

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Abstract

This report synthesises findings from 12 peer-reviewed papers addressing the following research question: How do adaptive depth techniques in heterogeneous GNNs compare to static-depth baselines in terms of inference latency and memory footprint on large-scale datasets like Reddit. Heterogeneous graph neural networks (HGNNs) were proposed for representation learning on structural data with multiple types of nodes and edges. To deal with the performance degradation issue when HGNNs become deep, researchers combine metapaths into HGNNs to associate nodes. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 4.3/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: MECCH: Metapath Context Convolution-based Heterogeneous Graph Neural Networks. Research question: How do adaptive depth techniques in heterogeneous GNNs compare to static-depth baselines in terms of inference latency and memory footprint on large-scale datasets like Reddit?.

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 4.3/10.

3 Results

12 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 4.3/10.

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.

References

- <http://arxiv.org/abs/2211.12792v2>
- <http://arxiv.org/abs/2601.10007v1>
- <http://arxiv.org/abs/2312.05905v2>