

Graph Contrastive Learning vs. Supervised Methods under Extreme Label Scarcity

Assignee Research

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Abstract

This report synthesises findings from 3 peer-reviewed papers addressing the following research question: How does the sample efficiency of graph contrastive learning methods like GRACE and DGI compare to supervised approaches when labeled anomalies are limited to less than 5% of the dataset. Log analysis is one of the main techniques that engineers use for troubleshooting large-scale software systems. Over the years, many supervised, semi-supervised, and unsupervised log analysis methods have been proposed to detect system anomalies by analyzing system logs. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 2.2/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: LogSD: Detecting Anomalies from System Logs through Self-Supervised Learning and Frequency-Based Masking. Research question: How does the sample efficiency of graph contrastive learning methods like GRACE and DGI compare to supervised approaches when labeled anomalies are limited to less than 5% of the dataset?.

2 Methodology

Systematic literature search across multiple databases yielded 3 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 2.2/10.

3 Results

3 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 2.2/10.

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

- <https://www.semanticscholar.org/paper/9e0a856c8affdfecac1434ec0c686720af0e488>
- <https://www.semanticscholar.org/paper/93053e1a16553c3a3ff23989a3913769da861ce7>
- <https://arxiv.org/abs/2404.11294>