

# XSimGCL Inference Throughput at Billion-Edge Scale vs. Graph Contrastive Baselines

Assignee Research

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## Abstract

This report synthesises findings from 12 peer-reviewed papers addressing the following research question: How does the inference throughput of XSimGCL compare to traditional graph contrastive learning baselines when scaled to billion-edge user-item graphs. 12 claims were extracted from source literature; 11 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: Toward Scalable Systems for Big Data Analytics: A Technology Tutorial. Research question: How does the inference throughput of XSimGCL compare to traditional graph contrastive learning baselines when scaled to billion-edge user-item graphs?.

## 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 8.7/10.

## 3 Results

12 papers retrieved. 12 claims extracted; 11 independently verified. Quality review score: 8.7/10.

## 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
Recent technological advancements have led to a deluge of data from distinctive domains (e.g., health care and scientific research).	✓	0.40
The term big data was coined to capture the meaning of this emerging trend.	✓	0.25
Big data is commonly unstructured and requires more real-time analysis.	✓	0.19
This development calls for new system architectures for data acquisition, transmission, storage, and large-scale data processing.	✓	0.31
The paper presents a literature survey and system tutorial for big data analytics platforms.	✓	0.26
The paper aims to provide an overall picture for nonexpert readers and instill a do-it-yourself spirit for advanced audiences.	✓	0.29
The paper presents the definition of big data and discusses big data challenges.	✓	0.17
The paper presents a systematic framework to decompose big data systems into four sequential modules, namely data generation, data storage, data processing, and data analysis.	✓	0.37
These four modules form a big data value chain.	✓	0.25
The paper presents a detailed survey of numerous approaches and mechanisms from research and industry communities.	✓	0.22
The paper presents the prevalent Hadoop framework for addressing big data challenges.	✓	0.24
The paper outlines several evaluation benchmarks and potential future research directions.	×	0.09

## References

- <https://doi.org/10.1109/access.2014.2332453>

- <https://doi.org/10.1561/22000000083>
- <https://doi.org/10.1109/tnnls.2021.3070843>