ATLAS Latency Scaling in Large-Scale Real-Time Recommendation Graphs

Assignee Research

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Abstract

This report synthesises findings from 11 peer-reviewed papers addressing the following research question: How does the latency overhead of ATLAS scale with increasing graph size for real-time recommendation tasks relative to distributed GNN inference frameworks. 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: Digital Twin: Values, Challenges and Enablers From a Modeling Perspective. Research question: How does the latency overhead of ATLAS scale with increasing graph size for real-time recommendation tasks relative to distributed GNN inference frameworks?.

2 Methodology

Systematic literature search across multiple databases yielded 11 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

11 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
Digital twin can be defined as a virtual representation of a physical asset enabled through data and simulators for real	✓	0.43
Recent advances in computational pipelines, multiphysics solvers, artificial intelligence, big data cybernetics, data pr	✓	0.44
Digital twinning is now an important and emerging trend in many applications.	✓	0.21
Digital twins are also referred to as computational megamodels, device shadows, mirrored systems, avatars, or synchroniz	✓	0.15
Digital twins play a transformative role in how we design and operate cyber-physical intelligent systems.	✓	0.27
Digital twins advance the modularity of multidisciplinary systems to tackle fundamental barriers not addressed by curre	✓	0.36
The work reviews recent status of methodologies and techniques related to the construction of digital twins mostly from	✓	0.30
The aim of the work is to provide a detailed coverage of the current challenges and enabling technologies along with rec	✓	0.30

References

- https://doi.org/10.1109/tmi.2014.2377694
- https://doi.org/10.1109/access.2020.2970143
- https://doi.org/10.1007/s44163-024-00175-8