

# Contrastive Loss Functions and Batch Size Scaling in TabLAM Pretraining Performance

Assignee Research

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## Abstract

This report synthesises findings from 12 peer-reviewed papers addressing the following research question: How does the choice of contrastive loss function (e.g., InfoNCE vs. SimCLR) influence the scaling behavior of batch size during pretraining and its correlation with TabLAM benchmark scores. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 6.3/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: How Does Critical Batch Size Scale in Pre-training?. Research question: How does the choice of contrastive loss function (e.g., InfoNCE vs. SimCLR) influence the scaling behavior of batch size during pretraining and its correlation with TabLAM benchmark scores?.

## 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 6.3/10.

## 3 Results

12 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 6.3/10.

## 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/2410.21676v4>
- <http://arxiv.org/abs/2507.07101v4>
- <http://arxiv.org/abs/2511.12188v1>