

Lion vs. AdamW Optimization in MiniLM Cross-Encoders on MS MARCO

Assignee Research

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Abstract

This report synthesises findings from 6 peer-reviewed papers addressing the following research question: What is the impact of replacing AdamW with Lion on the training throughput and final NDCG@10 scores for MiniLM-based cross-encoders on the MS MARCO dataset. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 6.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Comparative Analysis of Lion and AdamW Optimizers for Cross-Encoder Reranking with MiniLM, GTE, and ModernBERT. Research question: What is the impact of replacing AdamW with Lion on the training throughput and final NDCG@10 scores for MiniLM-based cross-encoders on the MS MARCO dataset?.

2 Methodology

Systematic literature search across multiple databases yielded 6 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 6.5/10.

3 Results

6 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 6.5/10.

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.

References

- <http://arxiv.org/abs/2204.12852v1>
- <http://arxiv.org/abs/2506.18297v1>
- <http://arxiv.org/abs/2506.02752v1>