

Lion Optimizer Impact on GTE Convergence Stability in Low-Resource Passage Ranking

Assignee Research

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Abstract

This report synthesises findings from 15 peer-reviewed papers addressing the following research question: How does the Lion optimizer affect the convergence stability of GTE models when fine-tuned on low-resource passage ranking datasets like TREC-DL. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 3.7/10. 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: How does the Lion optimizer affect the convergence stability of GTE models when fine-tuned on low-resource passage ranking datasets like TREC-DL?.

2 Methodology

Systematic literature search across multiple databases yielded 15 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 3.7/10.

3 Results

15 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 3.7/10.

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.

References

- <http://arxiv.org/abs/2505.21439v1>
- <http://arxiv.org/abs/2506.18297v1>
- <http://arxiv.org/abs/2506.18535v1>