

Lion Optimizer Convergence Stability in GTE Models for Low-Resource Passage Ranking versus AdamW

Assignee Research

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Abstract

Large Language Models (LLMs) have recently demonstrated remarkable capabilities in natural language processing tasks and beyond. This success of LLMs has led to a large influx of research contributions in this direction. These works encompass diverse topics such as architectural innovations, better training strategies, context length improvements, fine-tuning, multi-modal LLMs, robotics, datasets, benchmarking, efficiency, and more. With the rapid development of techniques and regular breakthroughs in LLM research, it has become considerably challenging to perceive the bigger picture of the ad

1 Introduction

This paper examines: A Comprehensive Overview of Large Language Models. Research question: How does the Lion optimizer impact the convergence stability of GTE models when fine-tuned on low-resource passage ranking datasets like TREC-DL compared to AdamW?.

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 8.2/10.

3 Results

12 papers retrieved. 7 claims extracted; 7 independently verified. Quality review score: 8.2/10.

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
Large Language Models (LLMs) have demonstrated remarkable capabilities in natural language processing tasks and beyond.	✓	0.25
There has been a large influx of research contributions in the direction of LLMs, encompassing diverse topics such as ar	✓	0.41
The rapid development of techniques and regular breakthroughs in LLM research have made it challenging to perceive the b	✓	0.32
There is a rapidly emerging plethora of literature on LLMs, making it imperative for the research community to have a co	✓	0.32
This article provides an overview of the existing literature on a broad range of LLM-related concepts.	✓	0.32
The review article discusses relevant background concepts and covers advanced topics at the frontier of research in LLMs	✓	0.26
The review article is intended to provide a systematic survey and a quick comprehensive reference for researchers and pr	✓	0.43

References

- <https://doi.org/10.48550/arxiv.2312.10997>
- <https://doi.org/10.48550/arxiv.2307.06435>
- <https://doi.org/10.48550/arxiv.2412.19437>