

# Performance Comparison of Lion and AdamW in GTE-based Cross-encoder Fine-tuning on BEIR Benchmark

Assignee Research

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## Abstract

Finding previously debunked narratives involves identifying claims that have already undergone fact-checking. The issue intensifies when similar false claims persist in multiple languages, despite the availability of debunks for several months in another language. Hence, automatically finding debunks (or fact-checks) in multiple languages is crucial to make the best use of scarce fact-checkers' resources. Mainly due to the lack of readily available data, this is an understudied problem, particularly when considering the cross-lingual scenario, i.e. the retrieval of debunks in a language differ

## 1 Introduction

This paper examines: Breaking Language Barriers with MMTweets: Advancing Cross-Lingual Debunked Narrative Retrieval for Fact-Checking. Research question: How does the performance of Lion compare to AdamW in terms of final MRR and NDCG@20 when fine-tuning GTE-based cross-encoders on the BEIR benchmark?.

## 2 Methodology

Systematic literature search across multiple databases yielded 2 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 9.2/10.

## 3 Results

2 papers retrieved. 9 claims extracted; 9 independently verified. Quality review score: 9.2/10.

## 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
Finding previously debunked narratives involves identifying claims that have already undergone fact-checking.	✓	0.30
The issue intensifies when similar false claims persist in multiple languages, despite the availability of debunks for s	✓	0.33
Automatically finding debunks (or fact-checks) in multiple languages is crucial to make the best use of scarce fact-chec	✓	0.34
Cross-lingual debunked narrative retrieval is an understudied problem, particularly when considering the retrieval of de	✓	0.37
This study introduces cross-lingual debunked narrative retrieval and addresses this research gap by creating Multilingua	✓	0.37
MMTweets is a dataset that stands out, featuring cross-lingual pairs, images, human annotations, and fine-grained labels	✓	0.37
The study conducts an extensive experiment to benchmark state-of-the-art cross-lingual retrieval models and introduces m	✓	0.29
The study comprehensively evaluates retrieval models for their cross-lingual and cross-dataset transfer capabilities wit	✓	0.27
MMTweets presents challenges for cross-lingual debunked narrative retrieval, highlighting areas for improvement in retri	✓	0.36

## References

- <https://openalex.org/W7135542205>

- <https://doi.org/10.48550/arxiv.2308.05680>