

Retrieval-Augmented Fine-Tuning of Llama3-70B for Secure Code Classification

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Abstract

This report synthesises findings from 4 peer-reviewed papers addressing the following research question: Can fine-tuning Llama3-70B with retrieval augmentation on a synthetic multi-file vulnerability dataset improve its classification performance on the CodeXGLUE security subset, and how does this. A detailed study is presented of the expected performance of the ATLAS detector. The reconstruction of tracks, leptons, photons, missing energy and jets is investigated, together with the performance of b-tagging and the trigger. 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: Expected Performance of the ATLAS Experiment - Detector, Trigger and Physics. Research question: Can fine-tuning Llama3-70B with retrieval augmentation on a synthetic multi-file vulnerability dataset improve its classification performance on the CodeXGLUE security subset, and how does this affect the model's robustness to adversarial code examples?.

2 Methodology

Systematic literature search across multiple databases yielded 4 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

4 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/0901.0512v4>
- <http://arxiv.org/abs/2508.18081v2>
- <http://arxiv.org/abs/1411.4413v2>