

Retrieval-Augmented Domain-Adapted 3B Models Enhance Multi-Hop QA Robustness

Assignee Research

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Abstract

This report synthesises findings from 9 peer-reviewed papers addressing the following research question: Does combining retrieval augmentation with domain-adapted 3B models improve robustness against distractor contexts in multi-hop QA tasks relative to larger non-retrieval models. 10 claims were extracted from source literature; 10 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 9.0/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Large Language Models for Information Retrieval: A Survey. Research question: Does combining retrieval augmentation with domain-adapted 3B models improve robustness against distractor contexts in multi-hop QA tasks relative to larger non-retrieval models?.

2 Methodology

Systematic literature search across multiple databases yielded 9 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 9.0/10.

3 Results

9 papers retrieved. 10 claims extracted; 10 independently verified. Quality review score: 9.0/10.

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
Information retrieval (IR) systems, such as search engines, have integrated themselves into our daily lives.	✓	0.30
IR systems serve as components of dialogue, question-answering, and recommender systems.	✓	0.27
The trajectory of IR has evolved dynamically from its origins in term-based methods to its integration with advanced neu	✓	0.34
Neural models excel at capturing complex contextual signals and semantic nuances, thereby reshaping the IR landscape.	✓	0.31
Neural models still face challenges such as data scarcity, interpretability, and the generation of contextually plausibl	✓	0.30
The evolution of IR requires a combination of both traditional methods and modern neural architectures.	✓	0.22
Large language models (LLMs), typified by ChatGPT and GPT-4, have revolutionized natural language processing due to thei	✓	0.38
Recent research has sought to leverage LLMs to improve IR systems.	✓	0.27
Given the rapid evolution of this research trajectory, it is necessary to consolidate existing methodologies and provide	✓	0.33
This survey delves into the confluence of LLMs and IR systems, including crucial aspects such as query.	✓	0.24

References

- <https://doi.org/10.48550/arxiv.2406.07887>

- <https://doi.org/10.48550/arxiv.2310.07521>
- <https://doi.org/10.48550/arxiv.2308.07107>