

Retrieval Augmentation Strategies and Their Impact on 7B Model Reasoning in Multihop QA

Assignee Research

June 8, 2026

Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: What is the impact of different retrieval augmentation strategies (e.g., dense vs. sparse retrieval) on the reasoning capabilities of 7B models, as measured by exact match accuracy on multihop QA. 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: Blended RAG: Improving RAG (Retriever-Augmented Generation) Accuracy with Semantic Search and Hybrid Query-Based Retrievers. Research question: What is the impact of different retrieval augmentation strategies (e.g., dense vs. sparse retrieval) on the reasoning capabilities of 7B models, as measured by exact match accuracy on multihop QA benchmarks like HotpotQA or DROP?.

2 Methodology

Systematic literature search across multiple databases yielded 14 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

14 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/2404.07220v2>
- <http://arxiv.org/abs/2404.14464v1>
- <http://arxiv.org/abs/2604.18234v1>