Synthetic QA Pairs Enhance Zero-Shot Retrieval in Specialized Domains

Assignee Research

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Abstract

This report synthesises findings from 16 peer-reviewed papers addressing the following research question: To what extent do synthetic question-answer pairs generated for specialized domains improve the zero-shot generalization of retrieval models compared to fine-tuning on standard benchmarks. Recent advancements in Large language models (LLMs) have demonstrated remarkable capabilities across diverse domains. While they exhibit strong zero-shot performance on various tasks, LLMs' effectiveness in music-related applications remains limited due to the relatively small. 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 1.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: MUST-RAG: MUSical Text Question Answering with Retrieval Augmented Generation. Research question: To what extent do synthetic question-answer pairs generated for specialized domains improve the zero-shot generalization of retrieval models compared to fine-tuning on standard benchmarks?.

2 Methodology

Systematic literature search across multiple databases yielded 16 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 1.5/10.

3 Results

16 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 1.5/10.

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/2411.15497v3
- http://arxiv.org/abs/2504.02268v1
- http://arxiv.org/abs/2507.23334v2