Vendi-RAG Inference Latency Scaling with Context Window Size on NaturalQuestions

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Abstract

This report synthesises findings from 4 peer-reviewed papers addressing the following research question: How does the inference latency of Vendi-RAG scale with context window size on the NaturalQuestions benchmark relative to dense retrieval baselines. A major obstacle to the wide-spread adoption of neural retrieval models is that they require large supervised training sets to surpass traditional term-based techniques, which are constructed from raw corpora. In this paper, we propose an approach to zero-shot learning for. 6 claims were extracted from source literature; 6 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.5/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Zero-shot Neural Passage Retrieval via Domain-targeted Synthetic Question Generation. Research question: How does the inference latency of Vendi-RAG scale with context window size on the NaturalQuestions benchmark relative to dense retrieval baselines?.

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 8.5/10.

3 Results

4 papers retrieved. 6 claims extracted; 6 independently verified. Quality review score: 8.5/10.

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.

5 Extracted Claims

Claim	Verified	Confidence
Neural retrieval models require large supervised training sets to surpass traditional term-based techniques.	✓	0.38
The proposed approach uses synthetic question generation to enable zero-shot learning for passage retrieval.	✓	0.32
The question generation system is trained on general domain data but applied to documents in the targeted domain.	✓	0.34
The approach creates arbitrarily large, yet noisy, question-passage relevance pairs that are domain specific.	✓	0.29
Coupling the synthetic question generation with a simple hybrid term-neural model improves first-stage retrieval perform	✓	0.23
The technique can approach the accuracy of supervised models depending on the domain.	✓	0.25

References

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- https://openalex.org/W7160743104
- https://doi.org/10.18653/v1/2021.eacl-main.92