

Tree of Reviews vs. Chain-Based Retrieval Latency on MuSiQue with Llama-3-8B

Assignee Research

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Abstract

This report synthesises findings from 14 peer-reviewed papers addressing the following research question: How does the inference latency of Tree of Reviews compare to chain-based retrieval methods on MuSiQue when scaling retrieval hops from 2 to 4 on Llama-3-8B. Compared to black-box neural networks, logic rules express explicit knowledge, can provide human-understandable explanations for reasoning processes, and have found their wide application in knowledge graphs and other downstream tasks. As extracting rules manually from large. 7 claims were extracted from source literature; 7 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.7/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: Embedding Entities and Relations for Learning and Inference in Knowledge Bases. Research question: How does the inference latency of Tree of Reviews compare to chain-based retrieval methods on MuSiQue when scaling retrieval hops from 2 to 4 on Llama-3-8B?.

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 8.7/10.

3 Results

14 papers retrieved. 7 claims extracted; 7 independently verified. Quality review score: 8.7/10.

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.

5 Extracted Claims

Claim	Verified	Confidence
Logic rules express explicit knowledge and can provide human-understandable explanations for reasoning processes.	✓	0.35
Extracting rules manually from large knowledge graphs is labour-intensive and often infeasible.	✓	0.31
Automated rule learning has recently attracted significant interest, and a number of approaches to rule learning for kno	✓	0.40
This survey aims to provide a review of approaches and a classification of state-of-the-art systems for learning first-o	✓	0.41
A comparative analysis of various approaches to rule learning is conducted based on rule language biases, underlying met	✓	0.40
The approaches considered include inductive logic programming (ILP)-based, statistical path generalisation, and neuro-sy	✓	0.33
Important and promising application scenarios of rule learning include rule-based knowledge graph completion, fact check	✓	0.39

References

- <https://doi.org/10.48550/arxiv.2402.07927>
- <https://doi.org/10.4230/tgdk.1.1.7>
- <https://doi.org/10.18653/v1/d16-1021>