

# Tree of Reviews vs. Tree-Based Retrieval Methods in MultiHopQA for Llama-3-8B

Assignee Research

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## Abstract

This report synthesises findings from 13 peer-reviewed papers addressing the following research question: How does the Tree of Reviews retrieval framework compare to other tree-based retrieval methods in terms of accuracy and computational overhead when applied to Llama-3-8B models on the MultiHopQA. Multi-hop question answering is a knowledge-intensive complex problem. Large Language Models (LLMs) use their Chain of Thoughts (CoT) capability to reason complex problems step by step, and retrieval-augmentation can effectively alleviate factual errors caused by outdated and 0 claims were extracted from source literature; 0 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 3.8/10. This report is a machine-generated literature synthesis and does not constitute original research.

## 1 Introduction

This paper examines: Tree of Reviews: A Tree-based Dynamic Iterative Retrieval Framework for Multi-hop Question Answering. Research question: How does the Tree of Reviews retrieval framework compare to other tree-based retrieval methods in terms of accuracy and computational overhead when applied to Llama-3-8B models on the MultiHopQA benchmark?.

## 2 Methodology

Systematic literature search across multiple databases yielded 13 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 3.8/10.

### **3 Results**

13 papers retrieved. 0 claims extracted; 0 independently verified. Quality review score: 3.8/10.

### **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/2404.14464v1>
- <http://arxiv.org/abs/2507.23334v2>
- <http://arxiv.org/abs/2506.06962v3>