Diversity-Weighted Retrieval Enhances FLAN-T5-xl Robustness on HANS Benchmark

Assignee Research

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Abstract

This report synthesises findings from 7 peer-reviewed papers addressing the following research question: How does diversity-weighted retrieval in RAG pipelines affect FLAN-T5-xl robustness against syntactic perturbations on the HANS benchmark compared to standard dense retrieval. The rapid advancement of Large Language Models (LLMs) has driven their expanding application across various fields. One of the most promising applications is their role as evaluators based on natural language responses, referred to as "LLMs-as-judges". 11 claims were extracted from source literature; 11 were independently verified against retrieved documents. An automated multi-reviewer quality assessment produced a score of 8.2/10. This report is a machine-generated literature synthesis and does not constitute original research.

1 Introduction

This paper examines: LLMs-as-Judges: A Comprehensive Survey on LLM-based Evaluation Methods. Research question: How does diversity-weighted retrieval in RAG pipelines affect FLAN-T5-xl robustness against syntactic perturbations on the HANS benchmark compared to standard dense retrieval?.

2 Methodology

Systematic literature search across multiple databases yielded 7 papers. Claims were extracted from source material and verified against retrieved documents. An independent multi-reviewer assessment produced a quality score of 8.2/10.

3 Results

7 papers retrieved. 11 claims extracted; 11 independently verified. Quality review score: 8.2/10.

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
The rapid advancement of Large Language Models (LLMs) has driven their expanding application across various fields.	✓	0.29
One of the most promising applications of LLMs is their role as evaluators based on natural language responses, referred	✓	0.30
The LLMs-as-judges framework has attracted growing attention from both academia and industry due to their excellent effe	✓	0.38
This paper presents a comprehensive survey of the LLMs-as-judges paradigm from five key perspectives: Functionality, Met	✓	0.39
The paper begins by providing a systematic definition of LLMs-as-Judges and introduces their functionality (Why use LLM	✓	0.24
The paper addresses methodology to construct an evaluation system with LLMs (How to use LLM judges?).	✓	0.25
The paper investigates the potential domains for the application of LLMs-as-judges (Where to use LLM judges?).	✓	0.25
The paper discusses methods for evaluating LLMs-as-judges in various contexts (How to evaluate LLM judges?).	✓	0.22
The paper provides a detailed analysis of the limitations of LLM judges and discusses potential future directions.	✓	0.21
The paper aims to provide insights on the development and application of LLMs-as-judges in both research and practice.	✓	0.27
The authors will continue to maintain the relevant resource list at https://github.com/CSHaitao/Awesome-LLMs-as-Judges.	✓	0.30

References

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- https://doi.org/10.48550/arxiv.2412.05579

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