Vendi-RAG Diversity Optimization Robustness Across Domain Shifts in Cross-Domain Benchmarks

Assignee Research

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Abstract

This report synthesises findings from 7 peer-reviewed papers addressing the following research question: How robust is Vendi-RAG's diversity optimization to domain shifts when evaluated on cross-domain benchmarks like TyDiQA and DROP with F1 score comparisons. Aligned large language models (LLMs) demonstrate exceptional capabilities in task-solving, following instructions, and ensuring safety. However, the continual learning aspect of these aligned LLMs has been largely overlooked. 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: TRACE: A Comprehensive Benchmark for Continual Learning in Large Language Models. Research question: How robust is Vendi-RAG's diversity optimization to domain shifts when evaluated on cross-domain benchmarks like TyDiQA and DROP with F1 score comparisons?.

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 8.7/10.

3 Results

7 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
Aligned large language models (LLMs) demonstrate exceptional capabilities in task-solving, following instructions, and e	✓	0.32
Existing continual learning benchmarks lack sufficient challenge for leading aligned LLMs, owing to both their simplicit	✓	0.41
TRACE consists of 8 distinct datasets spanning challenging tasks including domain-specific tasks, multilingual capabilit	✓	0.36
All datasets in TRACE are standardized into a unified format, allowing for effortless automatic evaluation of LLMs.	✓	0.23
After training on TRACE, aligned LLMs exhibit significant declines in both general ability and instruction-following cap	✓	0.33
The accuracy of llama2-chat 13B on gsm8k dataset declined precipitously from 28.8% to 2% after training on TRACE dataset	✓	0.27
Empirical findings suggest that tasks inherently equipped with reasoning paths contribute significantly to preserving ce	✓	0.35

References

- https://doi.org/10.48550/arxiv.2310.06762
- https://doi.org/10.48550/arxiv.2405.10936

- https://doi.org/10.3390/info17020139