

Peer Review

Review of: "100% Hallucination Elimination Using Acurai"

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Strengths:

- ✖ Clear motivation in context: The text effectively explains the critical problem of hallucinations in large language models (LLMs) and justifies why existing RAG systems (even with factual data) are still insufficient.
- ✖ In the research, the authors proposed a theoretical model called the “Noun-Phrase Dominance Model” to explain the linguistic behaviours of large language models.
- ✖ The Acurai approach was tested and verified using a specially created dataset called the RAGTruth Dataset Caveats, demonstrating complete elimination of hallucinations for both GPT-4 and GPT-3.5 Turbo.
- ✖ The article provides transparency and reproducibility to the research by providing a link to a GitHub repository for independent verification of the results and methods used. Using the RAGTruth corpus and detailing how the system was tested on multiple datasets (multiple GPT-3.5 Turbo and GPT-4 configurations, for both subtle and obvious conflicts) allowed for a complete and reliable assessment of the performance of the AcurAi system.
- ✖ The authors estimate that AcurAi eliminates between 91% and 100% of hallucinations. Including a confidence interval adds statistical credibility.

Suggestions for authors:

- Explain in detail the precise criteria used to define “hallucination” and how ambiguous cases are resolved.
- Use key terms such as “hallucination elimination,” “true answers,” and “accuracy” consistently throughout the text to avoid confusion.
- Quantify operational costs and increased resource consumption by providing quantitative

benchmarks regarding additional latency and computational consumption compared to direct queries to the LLM (mean time processing per query with Acurai vs. standard RAG systems).

- Include more examples or case studies from diverse domains (beyond the chemical properties example) to demonstrate the broad applicability of Acurai (e.g., medical applications, academic research).

Overall, the text is detailed and makes a convincing case for Acurai.

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Declarations

Potential competing interests: No potential competing interests to declare.