Peer Review Activity

In this peer review activity, two significant research papers have been analysed on the use of large language models (LLMs) in finance. The first is *“A Comprehensive Overview of Large Language Models,"* and the second is *“Financial Statement Analysis with Large Language Models.”*

Paper 1: A Comprehensive Overview of Large Language Models

The first paper provides a systematic review of LLM developments, focusing on architecture, training strategies, applications, and challenges. The problem identified is the rapidly evolving nature of LLM research, which makes it difficult for researchers and practitioners to consolidate key insights. The objective is to provide a comprehensive overview of advancements in LLM research to guide further innovation. This research aligns with my interest in understanding the advancements in LLM research, providing a grasp foundation for exploring their broad applications and challenges.

This paper employs a qualitative approach, synthesising insights from existing literature. The chosen methodology is appropriate as it effectively highlights trends, challenges, and future directions in LLM research. The paper organises complex information into straightforward summaries, enabling readers to understand the range of advancements in the field. However, it could benefit from more detailed domain-specific analysis to enhance its practical applicability.

Paper 2: Financial Statement Analysis with Large Language Models

The second paper assesses whether an LLM, specifically GPT-4 Turbo, can analyse financial statements and predict future earnings directions as effectively as or better than human analysts. It explores whether LLMs can perform quantitative tasks requiring human-like reasoning in financial analysis. The objective is to evaluate LLMs' capabilities in analysing numerical financial data without relying on textual context, comparing their performance with both human analysts and traditional machine learning models. My focus on implementing AI-driven solutions in the finance industry is in line with this paper's relevance to the intersection of AI and finance.

The methodology is experimental, using standardised financial data, including income statements and balance sheets, devoid of contextual narrative. This design isolates the LLM's analytical capability and makes the comparison with human analysts robust. The data spans from 1968 to 2021, and predictive modelling is used to compare performance metrics such as accuracy and F1 scores. The experimental setup is well-suited for evaluating LLMs' capabilities. However, integrating real-time market data could improve the practical application of the findings.

Conclusion

Both researchers make significant contributions to the study of LLMs. The first paper provides a foundational overview of LLM advancements, while the second explores their specific applications in finance. Together, these papers highlight the transformative potential of LLMs across diverse fields.

References:

Kim, A., Muhn, M., & Nikolaev, V. (2024). Financial statement analysis with large language models. *arXiv preprint arXiv:2407.17866*.

Naveed, H., Khan, A. U., Qiu, S., Saqib, M., Anwar, S., Usman, M., ... & Mian, A. (2023). A comprehensive overview of large language models. *arXiv preprint arXiv:2307.06435*.