Research Proposal Outline: The Impact of Large Language Models (LLMs) in Finance: The benefits and risks of LLM applications on financial decisions

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Introduction

The proposal will build upon my literature review topic, focusing on the role of large language models (LLMs) in the finance sector. It will present a plan to investigate how LLMs enhance financial decision-making while addressing the associated ethical, technical, and regulatory challenges. The introduction section will provide a concise overview of LLMs and their growing applications in the financial industry.

Significance and Contribution of the Research

This research addresses a significant gap in literature. The contribution of this research will be theoretical and practical, and these contributions will be explained in my proposal.

Literature Review

The literature review will be a summary of my main literature review by stating the main contributors. For instance, the applications of LLMs in finance to optimise decision-making by analysing datasets, predicting trends, and supporting customer engagement (Goldberg, 2024; Kim et al., 2024). The role of domain-specific models like BloombergGPT and FinGPT enhances financial decisions (Wu et al., 2023; Chen et al., 2023). Main challenges will be mentioned, such as data privacy, algorithmic bias, and misinformation, highlighting the need for robust ethical frameworks (Dhake et al., 2024; Paul et al., 2023). I will finalise with potential solutions including collaboration

among stakeholders and increased AI transparency are critical to mitigating risks (Bale et al., 2024).

Research Questions and Objective

Then I will talk about research questions, research aim and research objective.

Methodology

In this part of my proposal, I will develop a methodology, which is the mixed-methods approach, combining both qualitative and quantitative methods. I will explain this method and what kind of data analytic tools will be used. Additionally, sampling techniques will be discussed in the part.

Research Ethics and Ethical AI Usage

Key ethical issues such as data privacy and ensuring compliance with GDPR, informed consent and algorithmic bias. AI tools for grammar.

Timeline

A Gantt chart will be created to visually represent the research stages and their corresponding timelines. The research process will proceed through the following phases: completing a comprehensive literature review, initiating data collection and analysis, discussing findings, and finalising the research through writing and revisions.

Budget

Such as questionnaires and programming language subscription fees.

Conclusion

The proposal will conclude with a summary of the research plan and its anticipated contributions. It will also acknowledge any limitations and potential areas for future research. Overall, the proposal will provide a detailed framework for conducting the study.

References:

Bale, A. S., Dhumale, R., Beri, N., Lourens, M., Varma, R. A., Kumar, V., ... & Savadatti, M. B. (2024). The impact of generative content on individuals privacy and ethical concerns. International Journal of Intelligent Systems and Applications in Engineering, 12(1), 697-703.

Chen, W., Wang, Q., Long, Z., Zhang, X., Lu, Z., Li, B., ... & Wei, Z. (2023). DISC-FinLLM: A Chinese financial large language model based on multiple experts fine-tuning. arXiv preprint arXiv:2310.15205.

Dhake, S. P., Lassi, L., Hippalgaonkar, A., Gaidhani, R. A., & NM, J. (2024). Impacts and Implications of Generative AI and Large Language Models: Redefining Banking Sector. Journal of Informatics Education and Research, 4(2).

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Paul, D., Namperumal, G., & Surampudi, Y. (2023). Optimizing LLM Training for Financial Services: Best Practices for Model Accuracy, Risk Management, and Compliance in AI-Powered Financial Applications. *Journal of Artificial Intelligence Research and Applications*, *3*(2), 550-588.

Wu, S., Irsoy, O., Lu, S., Dabravolski, V., Dredze, M., Gehrmann, S., ... & Mann, G. (2023). Bloomberggpt: A large language model for finance. *arXiv preprint arXiv:2303.17564*.