



EMPIRICAL VALIDATION AND IMPLEMENTATION OF A BEHAVIORAL PROFILING FRAMEWORK FOR GENERATIVE AI IN FINANCIAL SERVICES

M.Sc. Thesis Topics*

Outline. This master’s thesis project will empirically validate the Behavioral Profiling Framework proposed in the position paper, “Profiling AI Agents in Finance: A Position Paper on Behavioral Risk Management for Generative Models.” The project’s core objective is to move beyond the paper’s theoretical foundation by implementing the proposed models and conducting a rigorous empirical analysis. The student will develop and execute a practical, data-driven study to test the framework’s effectiveness in detecting subtle but significant “behavioral drift” in large language models (LLMs) used in simulated financial applications. This project will fill a significant gap in the current understanding and operational management of AI risk, directly addressing a critical need identified by regulatory bodies and industry practitioners.

Deliverables.

- A well-structured codebase in a code repository containing the full implementation of the framework and analysis scripts.
- A written thesis documenting the methodology, empirical results, discussion of findings, and conclusions.
- A presentation summarizing the key findings.

This project is presented in collaboration with the Strategic Technology Analysis Center (STAC; <https://stacresearch.com>) – the trusted voice for technology performance in capital markets.

Interested? → Send an e-mail to info@stce.rwth-aachen.de. Include a transcript of your current grades and a brief statement of reasons for your interest in this topic.

*Software and Tools for Computational Engineering