

Research Engineer Intern at AIDF-CRI

Background

The Asian Institute of Digital Finance (AIDF) is a university-level institute in NUS, jointly founded by the Monetary Authority of Singapore (MAS), the National Research Foundation (NRF) and NUS. AIDF aspires to be a thought leader, a Fintech knowledge hub, and an experimental site for developing digital financial technologies as well as for nurturing current and future Fintech researchers and practitioners in Asia. The Credit Research Initiative (CRI) is a non-profit undertaking under the AIDF. Pioneering the "public good" credit risk measures, the initiative is committed to advancing big data analytics and providing directly useful credit intelligence to academic and professional communities.

Moreover, AIDF-CRI is dedicated to staying updated with the latest trends and technologies, especially for AI and LLMs. We are currently in the process of productizing an LLM-driven application system to enhance and diversify our credit solutions. Alongside this, LLM experimentation is a crucial ongoing R&D activity. This involves setting up experimental protocols, conducting iterative tests, and analyzing outcomes to advance our methodology including agentic LLM, and multi-agent frameworks.

Responsibilities

AIDF-CRI is actively seeking candidates with a deep passion for LLM application and exploration. The selected candidate will play a crucial role in our ongoing LLM experimentation efforts by implementing experimental protocols, executing detailed test cycles, integrating new data sources, optimizing system performance, and scaling our solutions to meet diverse market demands better.

Particularly, the responsibilities will include:

- **LLM Experimentation and Development**
 - Develop and standardize experimental protocols to ensure rigorous testing and evaluation of LLM-based systems.
 - Execute iterative testing cycles, meticulously analyzing the results to refine LLM models and enhance their accuracy and effectiveness.
 - Integrate a variety of data sources to enrich model training environments and improve the robustness of our LLM applications.
 - Collaborate with technical teams to implement robust testing protocols that validate the reliability and scalability of LLM applications.
- **Team Collaboration**
 - Work closely with research engineers and product teams to translate experimental findings into actionable insights and system improvements.
 - Facilitate the integration of LLM experimentation results with other R&D efforts to ensure that enhancements are aligned with overall product strategies.
- **Documentation and Knowledge Sharing**
 - Document all experimental designs, procedures, and outcomes to build a comprehensive knowledge base that supports continuous learning and development within the team.

- o Ensure clear communication of experimental insights and updates to facilitate seamless knowledge transfer and application across different R&D projects.

Minimum Requirements

- Preferably major in the areas of computer science/engineering or similar discipline.
- Strong programming skills, primarily in Python.
- Basic understanding of machine learning principles and familiarity with NLP concepts (e.g., tokenization, embeddings, transformers).
- Proficiency in working with various LLMs such as GPT (OpenAI), Llama, etc, either in the form of API calls or hosted locally.
- Experience in deep learning frameworks/libraries like PyTorch or TensorFlow, HuggingFace, LangChain
- Experience in advanced techniques for prompt engineering e.g. Few-shot, CoT, RAG.
- Basic knowledge of Git for version control and collaboration.
- Ability to document experiments clearly and comprehensively for replication and review.

Bonus Skills

- Experience with English and non-English LLMs.
- Skills in optimizing LLM performance for speed, accuracy, and resource consumption.
- Portfolio or examples of previous back-end work, including school projects or internships.
- Experience in the whole process of fine-tuning LLMs from task formulation, and data preparation to hyperparameter tuning and evaluation.
- Ability to take the initiative to discover problems from the experiment result, think creatively, and propose innovative solutions to complex problems.
- Publication in any AI-related conference/journal is a strong plus.
- Knowledge of finance/accounting or strong passion in the financial area is preferable.