Financial Data 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 productionizing an LLM-driven application system to enhance and diversify our credit solutions. This includes redesigning, testing, and improving the backend framework.

Responsibilities

AIDF-CRI is actively seeking candidates with a strong passion for backend development to enhance our modern credit analytics platforms. The selected candidate will play a key role in building a robust ModelOps pipeline to ensure seamless and reliable day-to-day client data delivery. In addition to infrastructure development, the candidate will also have the opportunity to contribute to credit research initiatives, including exploring new methods to improve existing DTD (Distance-to-Default) and PD (Probability of Default) models and developing other analytical toolkits.

Particularly, the responsibilities will include:

- Data Pipeline Development
    - Analyze and document the existing data pipeline, including **data ingestion, transformation, and model computation workflows**.
    - Design and implement scalable, efficient, and automated ETL/ELT pipelines using **Snowflake, BigQuery** and other Google Cloud Platform (GCP) services.
    - Develop and optimize data models and schemas to support analytics, reporting, and machine learning applications.
- Credit Research & Model Enhancement
    - Work closely with credit analysts and researchers to **improve existing DTD and PD models**, leveraging advanced methodologies and new data sources.
    - Explore and develop **enhanced modeling techniques** and analytical toolkits to refine credit risk assessments.
    - Support the integration of research findings into production pipelines, ensuring seamless deployment and real-world applicability.
- Data Quality & Operational Support
    - Assist in **monitoring data pipelines**, troubleshooting issues, and improving data integrity.

- Implement **data validation checks** and help develop tools to ensure accurate and consistent financial data processing.
- Perform **ad-hoc analysis and support operational needs**, responding to client and internal stakeholder requests.

Requirements

- Preferably major in the areas of Computer Science, Finance, Economics, Mathematics, Statistics, Engineering, or a related field
- Familiar with at least one programming language (Python, Julia, MATLAB).
- Experience with SQL, cloud databases (BigQuery, MySQL, MSSQL), and data processing frameworks is a plus.
- Knowledge of version control systems (Git) and experience with Bloomberg Terminal or financial databases is beneficial.
- Strong problem-solving skills, with a keen attention to detail and ability to work independently.
- Proactive attitude with a strong sense of responsibility and eagerness to learn.

Why Join Us?

- Gain hands-on experience in **cloud-based data engineering** and **credit risk modeling**.
- Work on a **real-world** system revamp project, transitioning from legacy infrastructure to **modern, automated pipelines**.
- Collaborate with **experienced professionals** in finance, data science, and engineering.
- Opportunity to contribute to **research and model enhancements**, applying **statistical and machine learning** techniques.