

Advancing Portfolio Asset Management **with** **with AI Integration**

How Quansight historically collaborated with leading financial institutions to enhance analytical performance through AI.

Executive Summary

Facing challenges in adopting AI for specialized operations, several prominent financial institutions partnered with Quansight Consulting to implement advanced AI solutions. By deploying AI Agents, innovative Retrieval Augmented Generation (RAG) systems, developing tools for evaluating large language models (LLMs), and optimizing data pipelines, these institutions enhanced their analytical capabilities, achieved scalable AI integration, and gained a competitive edge.



The Challenge

Our clients encountered numerous obstacles in adopting AI technologies. Here are a few examples:



Zero to AI:

Clients in this space had no expertise in AI and needed a strong partner to explore the rapidly evolving space. Exploration uncovered what worked and how it could be used.



Domain-Specific Knowledge:

The use cases required specialized expertise, creating a challenge to find analysts able to interpret proprietary data.



Data Integration and Infrastructure:

Integrating existing knowledge bases and pipelines into new AI infrastructures required significant data engineering efforts and collaboration.





The Solution

To overcome these challenges, we designed and deployed cutting-edge AI solutions:

Retrieval Augmented Generation (RAG) System

- Developed an open source application enabling query of internal business and legal docs.
- Engineered the application with role-based access controls for security and privacy.
- Built a prototype, rolled it into production and deployed it quickly across whole organization.

LLM Evaluation Framework

- Created tools to measure and optimize the performance of various LLMs, including ChatGPT, Mosaic, and Claude.
- Introduced prompt engineering techniques tailored for business-specific tasks.

Data Pipeline Optimization

- Collaborated with internal teams to integrate existing knowledge bases into new AI infrastructures.
- Developed scripts and built new pipelines to assist with data conversion and deployment.
- Authored tutorials and documentation to facilitate seamless adoption and maintenance.

AI Research

- Finetuning of LLMs on internal GraphQL queries.
- Deployed Nebari for them as an private AI research platform.



Each collaboration yielded significant outcomes:

- **Innovation Delivered:** Inspired the creation of Ragna, an open source tool enabling user interactions with internal, proprietary company documents.
- **Enhanced Analytical Capabilities:** Empowered clients to evaluate LLMs, optimize prompts, and monitor AI performance over time.
- **Streamlined AI Deployment:** Facilitated seamless integration of AI “Agents” into existing workflows, addressing limitations in RAG query and LLM evaluation.
- **Improved Data Infrastructure:** Successfully integrated existing document indexes into new AI infrastructures, enhancing data accessibility and processing efficiency.
- **Privacy-aware AI** Nebari successfully provided a platform for using AI and research without sending private data to a third party.



Tools & Technologies

Programming & Frameworks



Nebari

pandas



FastAPI



Panel

SQLA



EVALS

Databases



PostgreSQL



Chroma



pgvector



snowflake

DevOps



GraphQL



docker



OpenTelemetry



kubernetes





Why Quansight

Our approach allowed us to quickly bring our clients up to speed with new technologies and react to changes in a fast-paced field in real time. We ensured clients retained complete control of their data while achieving scalable AI solutions. By leveraging our experienced team and knowledge of specific technologies, our clients maintained data privacy, reduced costs, and gained a competitive edge.

Ready to transform your organization's analytical capabilities with advanced AI solutions?

Partner with Quansight to leverage cutting-edge technologies tailored to your unique needs. Contact us today to discover how we can help you achieve scalable AI integration and gain a competitive edge.

