

# Aymane Cheikh

Applied AI Engineer

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## Professional Summary

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Innovative and results-driven Data Science engineer with extensive programming experience and a year of hands-on work with AI solutions in investment banking operations. Proven expertise in building data models, data pipelines, and integrating outputs for analysis and ingestion. Strong collaborator and mentor, delivering measurable business impact through data-driven decision-making and stakeholder engagement.

## Key Skills

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- **Programming Languages:** Python (advanced), JavaScript/TypeScript (intermediate), Lua (intermediate), C++ (basic)
- **ML & Data Science Frameworks:** NumPy, SciPy, Pandas, scikit-learn, XGBoost
- **Microservices & Orchestration:** Docker, Kubeflow, Metrics
- **API Integration & Development:** SQLAlchemy, Pydantic, FastAPI, Flask, Django
- **Cloud Platforms:** GCP (VertexAI, AutoML, Google AI Workbench, Pipelines)
- **Frontend Frameworks:** React, Streamlit
- **Financial Services Domain:** Investment Banking Operations, AI Use Cases
- **Mentorship & Leadership:** Team guidance, onboarding, best practices, LLM safety
- **Communication:** Technical and non-technical stakeholder engagement

## Learning & Development (Aspirational Skills)

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- **ML & Data Science Frameworks:** PyTorch, TensorFlow
- **Microservices & Orchestration:** Kubernetes, Tracing
- **API Integration & Development:** Celery
- **Cloud Platforms:** AWS (SageMaker, Lambda, Step Functions), Azure
- **AI Agent Architecture:** Langchain, LangGraph, CrewAI, AutoGen, Multi-Agent System Design
- **Retrieval-Augmented Generation:** RAG pipelines, semantic search, vector databases (FAISS, Pinecone, Weaviate)
- **Generative Models:** Transformers, GANs, VAEs, diffusion models
- **Prompt Engineering:** Advanced prompt design, output validation, guardrails
- **Model Optimization:** LoRA, QLoRA, DoRA, Quantization, Distillation
- **Distributed Computing:** Data Sharding, Performance Optimization

## Professional Experience

**Investment Banking Operations, AI Analyst**

JPMorganChase | London, UK | Dec 25 – Present

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- Led AI initiatives in investment banking operations, designing agentic solutions for process automation and decision support.
- Collaborated with cross-functional teams to deliver AI-driven business impact.
- Ensured compliance with industry standards and best practices for AI safety and reliability.
- Assisted in the design, architecture, and implementation of assistive AI agents to optimize operational workflows.
- Studied and contributed to the Applied AI team's codebase, focusing on LangChain, LangGraph, advanced prompt engineering, and production-grade Pydantic schema design.
- Facilitated architectural solution designs involving AWS, Kafka, and workflow orchestration.
- Supported the design and implementation of semantic search solutions using vector databases.
- Provided business context for seamless database connectivity and agent integration.
- Collaborated with stakeholders to define requirements and design intuitive human-AI interfaces.
- Analyzed data to inform agent capabilities and optimize retrieval; facilitated performance evaluations.
- Mentored team members on agent frameworks, LLM usage, safety, and best practices.
- Developed web applications with React and TypeScript to showcase flagship AI projects and abstract prompt engineering for end users.
- Automated data submission and reporting processes with React and JavaScript, improving efficiency.
- Advocated for SQLAlchemy and database connectivity for data-heavy tasks.
- Built data pipelines using Python (Pandas) for various output formats and dashboarding.
- Conducted statistical analysis on large datasets, optimizing data pipeline performance.
- Ingested and enriched metadata from large shared drives, producing dashboards with React.
- Prototyped full stack applications for project tracking, including dynamic frontends and robust backends.
- Developed automated Jira reporting pipelines using the Jira REST API.

## Certifications

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- Certified Associate Python Programmer
- CFA Level I

# Selected Projects

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## Quantitative Finance

<https://github.com/aymanecheikh/quantitative-finance>

Asynchronous connection to Interactive Broker API, historical data analysis, GCP integration, ML workflow with Kubeflow and VertexAI.

## Blackjack Game

<https://github.com/aymanecheikh/cards>

Console-based game in TypeScript, object-oriented design.

## NumPy Practice

<https://github.com/aymanecheikh/numpy-practice>

<https://github.com/aymanecheikh/sensor-data>

<https://github.com/aymanecheikh/loan-data>

Deep dive into NumPy, vectorized functions, and C-compiled data science stack.

## C++ Practice

<https://github.com/aymanecheikh/cpp-practice>

Learning and practicing C++ basics.

## Arch Linux Setup

Migrated to Arch Linux, configured NeoVim, learned Lua, and established a fluid development workflow.

# Education

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## Bsc in Applied Finance

University of Exeter

# Additional Information

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- No generative AI was used in any GitHub projects, including no use of CoPilot in VSCode.
- Comfortable with Linux environments, terminal workflows, and OS-level configuration.