HARSH KAMMATH

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Executive Summary

Software Engineer & Finance Analytics Specialist with 3+ years of experience architecting high-concurrency distributed systems for global financial institutions. Expert in building resilient Java/Kafka pipelines and cloud-native infrastructure (AWS/Azure) to bridge the gap between large-scale data engineering and predictive modeling. Proven track record of translating complex business requirements into scalable technical solutions that drive real-time institutional insights.

Education

MSc. in Business Analytics and Finance **Sep, 2024 - Apr, 2026**
Dual Masters | Hult International Business School | Boston, MA

B.Tech, Mechanical Engineering **Jul, 2017 - Jul, 2021**
Bachelors | Vellore Institute of Technology | Vellore, India

Skills

AI & LLM: RAG Architectures, Vector Databases, LangChain, Semantic Search, OpenAI API, NLP Topic Modeling.
Backend & Distributed Framework: Java (Spring Boot), Python, Apache Kafka, REST, Microservices, ETL workflows.
Cloud & Infrastructure: AWS (S3, Athena), Docker, Kubernetes (K8s), Git, MongoDB, ElasticSearch, Camunda, Azure.
Visualization & Analytics: Power BI, Tableau, Excel (Advanced: Power Query, PivotTables), DAX.

Professional Experience

Tata Consultancy Services | Bangalore, India **Jul, 2021 - Jul, 2024**

Systems Engineer. Developed and modernized mission-critical liquidity management systems for SEI Investments, supporting global Tier-1 banking clients including US Bank and HSBC through the "Cash Refactor" initiative.

- Architected distributed Kafka pipelines in Java to transition from End-of-Day (EOD) batch processing to real-time cash projections, managing 1M+ daily transactions and ensuring 99.9% data integrity.
- Modernized legacy banking architecture by migrating SQL-based currency packages to high-concurrency REST APIs and designing the foundational "skeleton" for a Unified Cash Loader to centralize data ingestion.
- Served as Forward Deployed Lead, acting as the primary technical liaison for C-suite stakeholders to translate business requirements into technical roadmaps while mentoring a team of 5 junior engineers.
- Integrated full-stack observability and orchestration using Prometheus, Elasticsearch, and Camunda, leveraging Docker and Kubernetes to ensure high availability for mission-critical wealth management platforms.

Projects

Hult Business Challenge (Confidential Climate Risk Tech Client) | United States **Feb, 2025 - Mar, 2025**

Engineered an automated data pipeline and GIS mapping solution for a European climate risk platform, slashing manual data collection time from 3 days to under 1 hour.

- Architected a high-speed data ingestion engine in Python by reverse-engineering client APIs to automate the extraction of wildfire and flood vulnerability data, achieving a 90%+ reduction in operational latency.
- Developed a geospatial integration layer using Pandas and GeoPandas to process and overlay Copernicus GIS Shapefiles with proprietary ESG risk models, enabling precise visualization of regional infrastructure risks in cities like Bologna.
- Delivered a "one-click" automation tool executed via Jupyter/Google Colab, collaborating cross-functionally with business and technical teams to produce a prioritization matrix based on ESG readiness and regulatory pressure.

Flight Delay Analytics Using AWS (Academic Project) | United States **Nov, 2024**

Architected a cloud-native big data ecosystem on AWS to ingest and process over 10M flight records, identifying critical operational bottlenecks through high-concurrency analytical queries.

- Developed scalable ETL workflows using AWS Glue and Amazon S3, transforming raw flight data into partitioned Parquet tables to optimize storage efficiency and reduce downstream query costs.
- Optimized analytical performance by implementing custom SQL schemas in Amazon Athena, enabling rapid statistical analysis of delay patterns across 10M+ records for specific carriers and airports.
- Integrated external FAA registry data via API to provide a real-time, holistic comparison of mechanical versus operational delay factors, visualized through Amazon QuickSight.

Awards and Recognition

Academic & Innovation (Hult International Business School)

- 4 Time Business Challenge Winner (2024–2026): Ranked in the top 3% for Finance Advisory (IceBrook AI); 1st place across Climate Risk (ESG Data), Speaker-Matching (NLP/ML), and Retail Automation (Computer Vision) categories.
- Aparavi Social Media Innovation Challenge (2025): 1st place winner for the most innovative architectural application of AI toolchains in RAG-based chatbot development.

Professional Honors (Tata Consultancy Services)

- Performance Excellence Triple-Header (2021–2024): Individually recognized with Delivery Excellence, Rising Star, and Emerging Talent awards for full-stack contributions and innovative platform-wide use of the Spring Framework.