

Rishi Ravula

571-660-8500 | rishi.ravula@gmail.com | New York, NY, USA | <https://rishiravula.fyi> | github.com/RishiRavula

EDUCATION

Duke University

Bachelor's, Computer Science

August 2020 - May 2024

GPA: 3.78

Duke University

Bachelor's, Electrical & Computer Engineering

August 2020 - May 2024

GPA: 3.78

CERTIFICATIONS & Awards

AWS Solutions Architect Associate, Capital One Enterprise-Wide Hackathon Winner (1/700). HackDuke 2021 Health Sector Winner (1/300)

PROFESSIONAL EXPERIENCE

Capital One

Associate Software Engineer

New York, NY, USA

August 2024 - Present

- Building **MCP-based LLM Agents** to perform continuous, near-real-time monitoring: **decreasing Mean Time to Acknowledge to minutes**.
- Built low-latency filtering APIs over DynamoDB, enabling real-time queries on **400+ datasets**; **\$1M+ in data monetization at 60K+ QPS**
- Spearheading MVP for vector and graph databases, enabling low-latency access in read-distributed systems; developing from 0 to 1.
- Integrated **Glue ETL pipelines and LLMs** in recruitment systems, achieving **90% accuracy** and **reducing human bias by 37%** in backtesting.
- Optimized low-latency data store, **slashing latency by 70%** using Elasticache/Redis for real-time ML fraud detection.
- Built an automated data loader using S3, Glue, and Lambda, to **restore and recover TBs of data during disasters**; **cut recovery time by 90%**

Natter

Software Engineer Contract

London, UK

August 2023 - January 2024

- Built a highly available, scalable video conferencing platform supporting **10,000+ concurrent users** under heavy traffic.
- Developed **fine-tuned, open-source LLMs**, trained on proprietary data, utilizing zero-shot inferencing and novel embedding techniques.
- Increased attentive engagement by 40%** through AI-driven user matching and predictive analytics, enhancing interaction quality.

Capital One

Software Engineering Intern

New York, USA

May 2023 - August 2023

- Conducted the migration of a core account, Java Spring Boot service from an EC2 instance to a serverless Fargate infrastructure.
- Migration **outperforms the legacy service 45% faster in response times** and tolerates **2.6 million monthly transactions** in production.
- Orchestrated Fargate clusters, Load Balancers, IAM roles and more, including cross-region failovers and Docker containerization.

Tuned.com

Software Engineering Intern

Scottsdale, AZ, USA

May 2022 - August 2022

- Developed a high-frequency trading alert system for the crypto automated trading platform using JavaScript, Kotlin, and GraphQL.
- Alerts were sent as client-facing notifications with low-latency routing mechanisms and with up to **an 85% success rate per execution**.
- Contributed to the platform's success prior to its acquisition, alerts supplementing over **1 million trades** and **\$6 billion in transaction volume**

PROJECTS

End-to-End LLMs For Production Course

- Launched an 8-week LLM production curriculum, attracting 150+ pre-enrollments covering topics from data ingestion to model deployment
- Engineered real-time pipelines (RabbitMQ CDC, Flink, Qdrant) delivering sub-second embeddings and adopting MLOps for 99% model uptime
- Secured early investors, marketing to top universities and enterprises for widespread adoption.

Capital One Enterprise-Wide Hackathon

- Architected and led a team to develop a RAG-powered Slack/VSCode agent using Docker, pgvector, and LLaVa models.
- Unanimously won 1st place; solution adopted for production by Director of Slack with me as team lead overseeing implementation.
- Estimated to save \$1M during production, increasing question answer search accuracy by 80% and impacting 30,000 employees.

AI Celebrity Replica

- Fine-tuned Phi-3 and Mistral 8B for celebrity emulation: LangFuse, PostgreSQL and Tavily for 40% response accuracy improvement
- Orchestrated AWS services (EC2, ELB, Route 53, Docker) for 99.9% uptime/scalability to enable retrieval augmented generation
- Sold for 6 figures and delivered to Sensay, securing 2 full-time roles and a 30% engagement boost.

SKILLS

Languages: Python, Scala, Kotlin, Java, SQL, Swift

Technologies & Tools: AWS, Docker, Kubernetes, LLMs, LangGraph, LangChain, NumPy, Pandas, GraphQL, REST APIs, Redis, Postgres