

RUCHITHA KURAPATI

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Professional Summary

Software Engineer with 4+ years of experience building **AI-powered, cloud-native, full-stack systems**. Skilled in **Python, TypeScript, FastAPI, React, AWS, PostgreSQL, Redis, Kafka, Docker**. Experienced in **LLM and AI system deployment, real-time data pipelines**, and production-level monitoring. Adept at translating customer feedback into scalable software solutions, troubleshooting complex issues, and delivering **reliable, high-performance systems**.

Technical Skills

Languages & Frameworks: Python, TypeScript, FastAPI, React, Node.js, Java, Spring Boot, JavaScript, SQL
AI/ML: PyTorch, OpenAI APIs, LLM integration, Agent tooling, Prompt engineering
Cloud / Infrastructure: AWS (EC2, S3, Lambda, RDS), Docker, Kubernetes (basic), LiveKit, CI/CD pipelines
Databases / Queues: PostgreSQL, Redis, DynamoDB, Kafka
Monitoring & Testing: Prometheus, Grafana, Splunk, JUnit, pytest, Unit & Integration Testing
Practices: Agile/Scrum, CI/CD pipelines, Production deployment, Observability & troubleshooting
Collaboration Tools: Git, Jira, Confluence

Professional Experience

Software Engineer, American Express, Texas, USA Jan 2025 – Present

- **Built Python-based microservices** and integrated AI/ML models for real-time financial transaction risk analysis.
- Designed **FastAPI endpoints** to serve model predictions and analytics dashboards for internal users.
- Developed **Kafka-based pipelines** for continuous streaming and processing of high-volume transaction data.
- Deployed and monitored AI/ML workloads on **AWS ECS/EKS and Lambda**, ensuring high availability and low latency.
- Implemented unit and integration tests using **JUnit and pytest** to guarantee production reliability.
- Optimized **PostgreSQL and Redis** data stores for high-concurrency workloads, improving response times by **30%**.
- Collaborated with data scientists to operationalize AI models into customer-facing dashboards.
- Containerized AI services with **Docker** and managed CI/CD deployments across staging and production.
- Troubleshoot high-severity production incidents, reducing MTTR by **35%** through monitoring and proactive fixes.
- Documented AI pipelines, APIs, and deployment processes to enable knowledge sharing and reproducibility.

Java Full Stack Developer, Deloitte, India Dec 2019 – Jul 2023

- Developed full-stack web applications using **Java Spring Boot, Node.js, React, and Angular**.
- Designed and maintained **RESTful APIs** for data-intensive workflows and analytics tools.
- Integrated SQL (**PostgreSQL, MySQL**) and NoSQL (**MongoDB, Redis**) backends for scalable services.
- Participated in end-to-end SDLC including requirement analysis, development, testing, and deployment.
- Implemented unit and integration tests, improving code quality and maintainability.
- Developed and monitored **real-time processing pipelines** using Kafka and Celery.
- Containerized applications with **Docker** and deployed via **AWS ECS/EKS**, supporting high availability.
- Collaborated with cross-functional teams and stakeholders to translate requirements into technical solutions.
- Created comprehensive documentation and architecture diagrams for internal training and onboarding.
- Supported accessibility initiatives and ensured compliance with **WCAG standards** for frontend applications.

Achievements

- Built **AI/LLM-powered services** in production, reducing manual analysis time by **40%**.
- Optimized real-time **Kafka pipelines** for streaming analytics, improving throughput by **50%**.
- Designed **AWS-based microservices architecture** for low-latency, high-concurrency applications.
- Implemented observability stack using **Prometheus and Grafana**, reducing incident resolution time by **30%**.

Education

Master of Science in Computer Science - University of Central Missouri, Missouri
Bachelor of Technology in Computer Science - Veltech University

Certifications

- **Microsoft Certified:** Azure AI Fundamentals (AI-900)
- **Microsoft Certified:** Power BI Data Analyst (PL -300)
- **Java Full Stack Developer** - Coursera
- **Frontend Developer Certification** - HTML, CSS, JavaScript, React, Git
- **IBM:** Python for Data Science, AI & Development
- **Introduction to HTML5**