

# 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.
- Troubleshooted 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

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- 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

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**Master of Science in Computer Science** - University of Central Missouri, Missouri

**Bachelor of Technology in Computer Science** - Veltech University

## Certifications

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- **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**