Kalyani Vaidya | Software Engineer

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EXPERIENCE

Software Engineer – Security Analyst, Central Michigan University, MI, USA — August 2024 – Current

- Developed backend services using Python and Kafka, implementing event-driven components and APIs to automate multi-tenant workflows and reduce manual triage by 70%.
- Built data-processing and monitoring components using Kafka and the Elastic Stack, enabling real-time analytics for high-volume event data.
- Implemented backend data analysis logic in Python using OOP principles to detect abnormal system behavior in real-time streams.
- Contributed to CI/CD and data-processing workflows on AWS and Azure using Docker-based deployments, improving deployment reliability and increasing data throughput by 30%.
- Integrated backend services with AI-driven analytics components to support workflow automation in real-time systems.
- Applied secure coding practices and access-control concepts while developing backend services in a security-focused environment.

Software Development Engineer, APRG Technologies Pvt. Ltd, India — August 2022 - Nov 2023

- Developed RESTful backend microservices in Java and Python using Spring Boot, supporting scalable production applications.
- Implemented asynchronous processing using Kafka to improve service communication and overall system reliability.
- Built CI/CD workflows using GitHub Actions and Docker, reducing release cycles by 65% and improving deployment consistency.
- Optimized backend performance through SQL query tuning, caching strategies, and concurrency improvements, achieving 3× throughput gains.
- Built backend services on AWS (EC2, Lambda, RDS), integrating real-time processing to reduce response latency by 50%.
- Collaborated within Agile/Scrum teams to deliver features, resolve issues, and continuously improve backend systems.

TECHNICAL SKILLS

Languages: Python, Java, SQL, JavaScript, TypeScript, C++
Backend & APIs: Spring Boot, FastAPI, Django, RESTful APIs, Microservices
Databases: PostgreSQL, MongoDB, Redis, Cassandra (basic)
Cloud & Containers: AWS (EC2, EKS, Lambda, RDS, ELB), Docker, Kubernetes
Distributed & Streaming: Apache Kafka, Zookeeper
Data & Observability: Elastic Stack, Splunk, PySpark, Spark MLlib
ML & AI: Pandas, Scikit-learn, TensorFlow, Isolation Forest, DBSCAN, GAN/CTGAN, XGBoost, TabNet

EDUCATION

Master of Science in Computer Science — GPA: 3.6
Central Michigan University, Mount Pleasant, MI — Jan 2024 - Dec 2025
Coursework: Software and data modeling, Application development, Database and Management System, Machine Learning, Artificial Intelligence, Applied Data Engineering, Cloud Computing, Design & Analysis of Algorithms, Data Structures.

Bachelor of Engineering in Information Technology — GPA: 3.9
Savitribai Phule Pune University, Maharashtra, India — July 2018 - May 2022

TECHNICAL PROJECTS & RESEARCH

ShopSphere – E-Commerce App |GitHub

- Engineered a **full-stack e-commerce application** using **FastAPI + Next.js 14** with **JWT authentication**, **RBAC**, and **Docker Compose**, achieving a **95+ Lighthouse score** , improving onboarding speed by **70%** showing strong full-stack and UI modern framework expertise.

CloudShop Lite – Cloud-Native Microservices Platform |GitHub

- Built a distributed AWS EKS microservices platform using **Spring Boot/FastAPI**, Kafka, RDS, ELB, and React + Vite for scalable integration.
- Built an AI-Ops + MCP automation layer enabling log intelligence, health checks, rollout validation, self-healing to improve reliability.

EcoBeanAI – Climate Yield Predictor (Accepted at IEEE AIBThings 2025) GitHub

- Developed data pipelines using **PySpark/Spark MLlib**, GAN/CTGAN synthetic data, and XGBoost/TabNet to predict crop quality (R^2 = 0.9997), visualized in a React dashboard.

PUBLICATION

- F. Dimitrievski, S. Khan, K. Vaidya, and R. Gargees. ***EcoBeanAI: Predictive Modeling of Climate Effects on Coffee and Cocoa Yield.*** **Accepted at IEEE** AIBThings 2025**, co-organized by Central Michigan University and Istinye University, Türkiye.** Link
- Vaidya, Kalyani. (2023). Real Time COVID-19 Tracker Using React JS. International Journal of Science and Research (IJSR). 12. 1113-1116. 10.21275/SR23414181855. Link

CERTIFICATION

- **Oracle Cloud Infrastructure 2025 Developer Professional (1Z0-1084-25) – *Oracle, 2025***
- **Oracle Cloud Infrastructure 2025 Generative AI Professional (1Z0-1127-25) – *Oracle, 2025***
- **AWS Academy Graduate – Cloud Foundations — AWS**