

THOMAS OKONKWO

Software Engineer

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PROFESSIONAL SUMMARY

Software Engineer with 3+ years of experience building and operating backend systems, distributed data pipelines, and cloud infrastructure. Currently at American Express designing secure, scalable services in Java/Spring Boot and automating large-scale data workflows in an Agile (SAFe) environment. Proven track record across fintech and big data platforms, from credit transfer middleware at InterSwitch serving multiple banks to real-time streaming systems at Twitter. Strong foundation in distributed systems, REST API design, cloud infrastructure (AWS, GCP), and CI/CD, backed by an M.Sc. in Computer Science.

TECHNICAL SKILLS

Languages: Java, Python, Scala, SQL

Frameworks: Spring Boot, Flask, REST APIs, Apache Beam

Cloud & DevOps: AWS (S3, EC2, VPC, Glacier), GCP, Kubernetes, Docker, Jenkins, Terraform, CI/CD

Data & Streaming: Kafka, Spark (Structured Streaming, Spark SQL), Hive, MapR, HBase, PostgreSQL, MySQL

Tools & Practices: Git, Jira, Confluence, Postman, Agile/SAFe, Adobe Experience Platform

WORK EXPERIENCE

American Express — Software Engineer

Jun 2023 – Present

- Build and maintain backend services in Java (Spring Boot) that integrate with Adobe Experience Platform via WebClient, supporting customer eligibility and exclusion logic for a High Yield Savings Account product.
- Diagnose and resolve production issues across the network stack, including tracing a failing external API integration to a network egress/firewall restriction rather than an application defect.
- Configure and manage passwordless SSH across test and production Tomcat environments, streamlining secure remote access for the engineering team.
- Build and manage AWS S3 bucket policies for application storage and Glacier-based backup and archival.
- Query and analyze large datasets using Hive and Spark SQL (PySpark) to support business and product decisions.
- Participate in sprint planning, backlog refinement, and delivery within a SAFe Agile framework using Jira.

InterSwitch Group — Software/Cloud Engineer

Sept 2018 – Jan 2021

- Developed credit transfer middleware for banks in Java Spring, increasing inward transfer success rates across multiple payment channels, and deployed the service to Kubernetes.
- Built and operated a distributed, highly available microservices architecture, using Docker and Jenkins for containerization and CI/CD.
- Implemented infrastructure as code (IaC) with Terraform and CloudFormation/ARM templates in collaboration with platform engineers.
- Designed and built data pipelines to extract, classify, and merge structured and unstructured datasets into MapR DB, including Spark jobs for real-time streaming ingestion.
- Improved automation of marketing, sales, and solutions workflows by 30% through algorithm refinement.
- Identified and resolved software defects, improving overall processing efficiency by 21% through systematic testing and documentation.

Twitter, Inc. — Engineering Intern

May 2022 – Aug 2022

- Built data pre-processing tools for machine learning pipelines in Apache Beam with the Machine Learning Data Framework team.
- Wrote Beam and Dataflow jobs against Google Cloud Storage, and used Notebooks to inspect streaming data behavior.
- Designed and optimized database schemas to support efficient large-scale data storage, retrieval, and pipeline ingestion.
- Debugged and resolved software issues in collaboration with senior engineers to improve system performance.

EDUCATION

Prairie View A&M University

Aug 2021 – 2023

M.Sc. Computer Science — GPA 3.90/4.00

SELECTED PROJECTS

Cerber Ransomware Detection

- Built a machine learning classifier to detect Cerber ransomware from packet capture (pcap) files using TF-IDF feature weighting on network traffic parameters.

IoT-Based Monitoring for Cell Tower Sites

- Designed a PostgreSQL/Flask backend for a 5-person team to remotely monitor cell tower sites, including CRUD endpoints and a report-generation endpoint with graphical site health visualization.