

PAUL AFOLABI

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SUMMARY

Software engineer with over 3 years of enterprise experience building high-throughput, event-driven payment systems across three African banks, including infrastructure processing over NGN1 billion (\$700,000+) in daily volume with zero data loss. Experienced in distributed systems, Kafka, and Redis, and complementing that domain depth with applied AI focused on personalization, recommender systems, and agentic systems for finance, healthcare, logistics, and e-commerce. Currently pursuing an MS in Engineering Artificial Intelligence at Carnegie Mellon University (graduating May 2028), and excited to bring my engineering experience to domains of interest.

EDUCATION

Carnegie Mellon University

MS. Engineering Artificial Intelligence

Relevant Coursework: Recommender Systems, Applied Stochastic Processes, Machine Learning, Deep Learning

AUG. 2026 - MAY 2028

Federal University of Technology, Minna - Nigeria

B.Eng. Mechanical Engineering

SEPT. 2015 - SEPT. 2021

SKILLS AND PROFESSIONAL CERTIFICATIONS

Certifications: [AWS Certified Solutions Architect - Associate](#) | [Kubernetes and Cloud Native Essentials](#) | [ITIL Foundation Certificate in IT Service Management](#) | [Microsoft Certified: Azure Fundamentals \(AZ-900\)](#)

Programming and Development: Go, Python, C#, Go, SQL, .NET Core, Git

Data Stores and Databases: MSSQL, Oracle SQL, MongoDB, MySQL, PostgreSQL, Azure Blob, AWS DynamoDB, Redis Cache, S3 bucket

Infrastructure and Platforms: AWS, Azure, Apache Kafka, Docker, Kubernetes, Linux, Redis, SUSE Rancher

PROFESSIONAL EXPERIENCE

Backend Engineer | [Wema Bank PLC](#)

Lagos, Nigeria | C#, MSSQL, OracleSQL, Kafka, Redis, IIS, RHEL

DEC. 2025 – OCT. 2026

- Designed, provisioned, configured, and managed an on-premises, geo-redundant active-active 5-node Kafka cluster and Redis infrastructure processing over NGN1 billion (\$700,000+) in daily payment volume with zero data loss.
- Led the technical review and architectural redesign of the eTranzact payment system (inbound), optimizing a database-as-a-queue solution into an event-driven, Kafka-and-Redis-powered 5-microservice solution, prioritizing data consistency and partition tolerance.
- Reduced end-to-end transaction processing latency by over 25× (96%), from an average of 20 seconds to 800ms, while reducing vendor notification delays from ~30 seconds to 2.5 seconds.
- Designed and developed a distributed payment architecture consisting of 7 services for payments originating from FinTech partners of the Bank, reducing transaction latency by over 3× and improving payment-state tracking and customer experience through callback and state-management services.

Backend Engineer | [First Bank of Nigeria Ltd](#)

Lagos, Nigeria | AWS, C#, MSSQL, OracleSQL, Kafka, Redis, Azure DevOps, Linux

APR. 2024 – DEC. 2025

- Developed the PAPSS (Pan-African Payment and Settlement System) remittance feature on the LIT App, enabling seamless digital cross-border payments for our African customers. The feature handles over \$500,000 in annual transaction volume.
- Built a biometric onboarding feature that streamlined user verification, with <150ms latency.
- Developed a Kafka-powered push notification service for the LIT App delivering over 1M notifications daily.
- Designed and developed a role-based access management backend system for over 2,000 active internal users, ensuring precise permission control and reducing complaint resolution TAT by 50%.

Backend Engineer | [Access Bank Plc](#)

Lagos, Nigeria | C#, MSSQL, OracleSQL, Azure DevOps, SUSE Rancher

DEC. 2022 - MAR. 2024

- Led the development and deployment of 3 middleware applications for each of ten (10) African subsidiaries of the Bank.
- Built an account opening microservice, increasing daily customer onboarding by 40%, growing from an average of 3,000 to 5,000 customers.
- Developed an account statement microservice that generates approximately ₦6 million (~\$7500) in annual revenue for the bank.

SELECTED PROJECTS

FIFO Single Server Queue - https://github.com/api-sage/systems_stochastic_processes.git | Python, numpy, matplotlib

- Built a discrete-event simulation of a single-server FIFO queue (M/G/1-style) to study how utilization and arrival variability affect waiting time, system time and queue length across $\rho = 0.5$ to 0.95 .
- Showed that utilization alone doesn't determine delay. Reducing arrival variability at matched mean rates materially cut congestion near saturation, so misjudging variability can mislead capacity planning.

FCY Payment Processor - <https://github.com/api-sage/fcy-payment-processor.git> | Go, PostgreSQL, Docker

- Built a multi-currency (USD, EUR, GBP, NGN) payment backend covering onboarding, accounts, deposits, FX conversion, fee/VAT computation and internal and external transfers, using transactional posting through suspense/GL accounts for traceability and settlement.
- Used goroutines for concurrent transfer processing. Also diagnosed a latency regression (125ms to 220ms) to database connection pool limits and fixed it by tuning the pool, bringing transfers to ~110ms. Wrote business-rule and negative-path tests around transfer integrity.