

FELIX KWASI SARPONG

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SUMMARY

Backend-first Software Engineer (5+ years) building Java/Spring Boot and Python/FastAPI systems on AWS for fintech/payments. Delivered event-driven microservices (Kafka/JMS) at scale (1M+ tx/day; 20M+ tx/month) with strong reliability (MTTR ~35%) and performance (p95 ~140ms). Builds agent platforms with human-in-the-loop approvals, policy-gated tool execution (MCP), and auditability across OpenAI/Anthropic and local LLM runtime (Ollama).

SKILLS

Languages: Java, Python • Backend: Spring Boot, Spring Security (OAuth2/JWT), FastAPI, REST/OpenAPI, GraphQL • Messaging: Kafka, JMS • Data: PostgreSQL, Oracle, MySQL, Redis • Cloud/Infra: AWS (ECS/Fargate, Lambda, SQS/SNS, RDS, S3, IAM, CloudWatch), Docker, Terraform, GitHub Actions • Observability/Quality: Prometheus/Grafana, Micrometer, JUnit, Pytest • AI/Agents: LangGraph, CrewAI, LangChain, LlamaIndex, MCP, Neo4j, OpenAI, Anthropic, Ollama

EXPERIENCE

Senior Software Engineer — FIDO (Global Fintech) | Remote | Jan 2024 – Dec 2024

- Built and operated Spring Boot + FastAPI services processing 1M+ transactions/day over Kafka/JMS; improved resilience with idempotency, safe retries/timeouts, and Resilience4j patterns.
- Reduced MTTR by 35% with Prometheus/Grafana dashboards and alerting; improved p95 latency to ~140ms via SQL tuning, Redis caching, and connection pool optimization.

Software Engineer — EFT Corporation (Payments Platform) | Distributed | Aug 2021 – Dec 2023

- Owned backend services for a prepaid card platform processing 20M+ transactions/month; reduced processing latency 15–25% through Redis caching and SQL/JDBC tuning.
- Implemented OAuth2/JWT RBAC and PCI-aligned controls (tokenization, encryption, TLS); supported Visa/Mastercard/Verve readiness and ISO 8583 cutovers.

Software Engineer (Integration) — Republic Bank (Core Banking) | Accra | Oct 2020 – Jul 2021

- Built Temenos T24 integration APIs using SOAP (WSDL)/XML supporting ~7M transactions/month; improved reliability via strict validation and operational logging.
- Partnered with QA/SRE and downstream teams to stabilize releases and reduce integration defects during cutovers.

Backend Developer (Contract) — Passmall (E-commerce) | Remote | Dec 2018 – Aug 2021

- Developed FastAPI services for catalog, onboarding, and checkout; improved deployment reliability via containerization and CI checks.
- Implemented concurrency-aware real-time integrations (threaded handlers + back-pressure patterns) to manage upstream connections safely.

SELECTED PROJECTS

Senteniel — Human-in-the-Loop Control Plane for Tool-Using Agents | FastAPI, GraphQL, Postgres, Neo4j, MCP

- Built an SDK-first control plane that forces agents to proposeToolCall(tool,args); policy returns ALLOW / BLOCK / APPROVAL_REQUIRED for consistent governance.
- Implemented approval workflow (PENDING → APPROVED → EXECUTED or PENDING → DENIED) with audit-grade decision traces; enforced filesystem boundary to /sandbox.
- Added tool discovery + contract storage via syncMcpTools; supports multiple orchestrators (langgraph / crewai / autogen) and LLM runtimes (Ollama/OpenAI/Anthropic).

Canon — Citation-first academic RAG platform (AWS deployed) | FastAPI, LangGraph, Postgres, FAISS, Docker, Terraform

- Built course-aware, citation-first RAG with deterministic routing; deployed to ECS Fargate + RDS with CI/CD and optional local inference via Ollama.

EDUCATION

M.S., Computer Science — Texas Tech University | 2024–2025 • B.S., Computer Science — KNUST | 2016–2020

RESEARCH

Graduate Researcher (Machine Learning, GenAI & Privacy) — Texas Tech University | Jan 2025 – Dec 2025

- Built distributed ML experimentation pipelines (PyTorch Lightning) with differential privacy training (Opacus/DP-SGD) for recommender systems.
- Developed WGAN/WGAN-GP distribution-matching attacks and evaluated privacy–utility–robustness trade-offs for DP factorization machines (ACM SACMAT 2026).