

Kofi E. Ampaabeng, Ph.D.

Principal Engineer & Engineering Leader — Enterprise Distributed Systems · Cloud-Native · Data Platforms · Regulated Fintech

Washington, DC–Baltimore Area · Open to Remote · kofi@capewesley.com · www.ampaabeng.com · linkedin.com/in/kofi-ampaabeng

SUMMARY

The “can-do” engineer-leader — I take on undefined problems in unfamiliar fields, often with the obvious tools off the table, learn them, and ship. 20+ years across regulated banking, data platforms, and applied ML.

- **Full-lifecycle ownership** — concept → architecture → team-building → delivery → client management; built three teams across two co-founded ventures and a Director role; architect **cloud-native (Azure/AWS) or self-hosted to fit budget & business indicators**.
 - **Distributed data** — built RegAuth (Spark/Solr over the full U.S. federal legal corpus) and Vigil (live streaming NLP/LLM), mentoring junior teams to deliver both.
 - **The moat** — a PhD economist who hand-builds the pipeline: rigor most engineers lack, engineering most economists lack.
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SKILLS

- **Languages** — Java 11–21, Python, TypeScript, SQL, Go
 - **Distributed data** — Apache Spark (PySpark/Spark SQL), Parquet, Celery, Solr, Kafka, Redis
 - **Backend & stores** — Spring Boot 3/4, FastAPI; event-driven (outbox), multi-tenant,DDD; PostgreSQL, Oracle 10g–21c, MS SQL Server
 - **Cloud & IaC** — **Terraform** (AWS/Azure/GCP), AWS (VPC/RDS/IAM/ECS/S3), Azure (Container Apps, DevOps); Docker, OpenShift, Kubernetes, self-hosted data center; cost-aware right-sizing
 - **AI-augmented dev** — agentic Claude SDLC automation (MCP, quality gates); self-hosted LLM (vLLM/Ollama)
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SELECTED WORK

RSS Bank — Regulatory Reporting & Core Banking (*production flagship*)

- Automates statistical reporting to the **Bank of Ghana**; live since 2019; deployed incl. **air-gapped** sites.
- **Real client base in Ghana & South Africa** — Fidelity Bank, Izwe S&L, ASA International, Sinapi Aba, Adehyeman, GRA Co-op Credit Union.
- Multi-module JVM + Python ML; FlexCube/T24/Calypso integration; multi-tenant; OpenShift.

RegAuth & Vigil — Distributed Data / NLP Platforms (*architected & team-led*)

- **RegAuth** — one of the few production systems rendering the full U.S. federal legal corpus as structured data: PySpark → Parquet, Solr, Celery.
- **Vigil** — live multi-source social/news ingestion (Celery scrape/analyse/ingest/**stream**), NLU coordination detection + LLM analysis (Ollama), Solr + FastAPI, socioeconomic correlation + ML.
- I owned vision & architecture and **hired and mentored the junior engineers who built both**.

CWC Banking — IFRS-First Core Banking (*architected & owned*)

- **Single-writer, event-driven ledger**; three-currency (IAS 21); transactional outbox + inbox dedup.
- Immutable audit, maker-checker, **multi-tenant** isolation with per-tenant sharding. Spring Boot 4 / Java 21, 46 modules.

CW DevOps — Internal Developer Platform (*designed & built; open-sourcing*)

- **Provider-neutral** (38 implementations / 11 categories) with **Terraform self-service** (AWS/Azure/GCP) and a **Pipeline IR → 6 CI platforms**.

- **Governed AI delivery** — autonomous Claude worker (ticket → tests → MR) behind a **compliance engine that blocks merges on violations**; MCP, DORA metrics, multi-tenant, self-hostable. **2,682 tests**.
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EXPERIENCE

Cape Wesley — Founder & Principal Engineer / Architect

2024–Present · Remote (concurrent with ECS)

- Own architecture, standards, and delivery across a regulated banking / IAM / ML portfolio.
- **Hired and built a globally distributed engineering team (Ghana, Rwanda, US)** serving clients across South Africa, Ghana, Pakistan, and the US.

Excenit — Co-Founder & Executive Director (*fintech startup*)

2019–2024 · Ghana / US · subsumed into Cape Wesley

- Built the RSS regulatory/core-banking platform and a **banking client base across Ghana & South Africa from zero**.

ECS — Senior Backend Engineer

2022–Present · Fairfax, VA

- Technical owner of the national-scale **USPS Change-of-Address** application (cleared).
- **Led the WebSphere → WildFly migration with no prior experience in either**; re-architected Spring Boot 1.x → 4.x.
- **Built a custom email-queuing system** when org constraints precluded Kafka/ActiveMQ; **re-architected auth to a BFF model**, removing OAuth2 from the frontends.

Mercatus Center (GMU) — Senior Research Fellow & Director, Open Health Policy

2019–2023 · Arlington, VA

- **Built the HealthRegData product and a team of research scholars**; built the data-science team + RegCensus platform/API.
- Drove ML text classification; mentored analysts and fellows to published co-authorship.

IMPAQ International — Research Associate / Task Lead

2013–2019 · Columbia, MD

- Designed technical-solution architectures for federal data systems (U.S. DOL/USDA).

Earlier — Ghana Banking & Software (2003–2007)

- Infrastructure Manager, **Fidelity Bank** (Oracle 10g, core-banking rollout) · DBA, Agricultural Development Bank · Senior Developer & DB Consultant, Bsystems.
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EDUCATION & CERTIFICATIONS

- **Ph.D., Economics** — Clark University, 2013
- **B.A., Computer Science & Economics (First Class Honors)** — University of Ghana, 2004
- **PgMP — Program Management Professional (PMI)** — *in progress*