



PRINCIPAL SOFTWARE DEVELOPER

KOFI ADEYEMI

PYTHON · ORACLE/POSTGRESQL · AI-DRIVEN SYSTEMS

Principal engineer with **15+ years** of experience designing and scaling data-intensive platforms in the UK. Specialist in **Python** and **Oracle/PostgreSQL**, leading delivery of high-availability services, complex data pipelines and **AI-augmented features using LangChain**, LLMs and vector search. Proven track record mentoring teams, modernising legacy estates, and embedding AI safely into enterprise applications.



AI-NATIVE ARCHITECTURE · LANGCHAIN · LLM INTEGRATION

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PYTHON

ORACLE

POSTGRESQL

LANGCHAIN

LLMS

EXPERIENCE

Principal Software Engineer (Python & Data Platforms)

2020 – PRESENT

FinEdge Capital – London, UK · FinTech (Trading & Risk)

Technical lead for a **Python / PostgreSQL / Oracle** platform powering intraday risk analytics and AI-driven insights across multi-asset trading desks.

Architected a **LangChain-based AI assistant** for risk analysts, enabling natural-language querying over **PostgreSQL** data and Oracle risk models, reducing ad-hoc SQL/report requests by 65%.

Designed a unified **vector search layer** (PostgreSQL + pgvector) to index research notes, trade rationales and market commentary, powering contextual retrieval for LLM-backed copilots.

Migrated critical reporting workloads from legacy PL/SQL into **Python services** using SQLAlchemy and async processing, improving end-of-day batch completion times by 40%.

Implemented a secure **AI governance framework** (prompt templates, guardrails, PII scrubbing, audit logging) around LangChain pipelines to meet internal model-risk and compliance standards.

Led a cross-functional squad of 8 (engineers, data scientists, QA) and mentored senior developers stepping into staff/principal responsibilities.

Lead Software Engineer (Data & Integration)

2015 – 2020

Northbridge Health Systems – Manchester, UK · Healthcare

Led delivery of secure data integration services and clinical analytics built on **Python, Oracle and PostgreSQL**.

Developed a suite of **Python microservices** exposing patient and claims data from Oracle and PostgreSQL via a unified REST/GraphQL API, consumed by internal portals and third-party partners.

Introduced **data-quality monitoring** with SQL-based validation rules, anomaly detection in Python, and dashboarding, reducing critical data-quality incidents by 70%.

Designed a prototype **clinical decision-support assistant** using early LLM tooling (later refactored to LangChain), providing summarised patient histories and coding suggestions to clinicians.

Optimised key Oracle and PostgreSQL queries (partitioning, indexing strategies, materialised views), eliminating chronic slow-query alerts and cutting report runtimes from minutes to seconds.

Championed CI/CD (GitLab CI, Docker, Kubernetes) and led a gradual migration from on-prem Oracle to a **hybrid PostgreSQL** architecture in the cloud.

Senior Software Developer (Backend & Data)

2010 – 2015

BrightSky Retail Group – London, UK · E-commerce

Core developer on a high-volume e-commerce platform built on **Python, Oracle** and distributed caching, focused on pricing, inventory and personalisation.

Implemented backend services in **Python** managing catalogue, promotions and order fulfilment, integrating tightly with Oracle for transactional integrity.

Designed new schemas and PL/SQL procedures for promotions & loyalty, later ported to PostgreSQL during an in-house POC migration.

Introduced A/B-test pipelines (Python + SQL) for personalisation rules, improving average order value by ~8% across key categories.

Mentored junior developers in Python best practices, SQL optimisation and clean architecture patterns.

SELECTED AI & DATA ENGINEERING WORK

LangChain-Powered Analyst Copilot

Python · LangChain · OpenAI/Anthropic APIs · PostgreSQL · Oracle · pgvector

Designed an internal copilot for risk and compliance teams: orchestrated **LangChain** tools to translate natural-language queries into SQL, perform retrieval-augmented generation across **PostgreSQL** and Oracle datasets, and provide fully cited responses. Added query-plan analysis and automatic **SQL optimisation suggestions** for complex ad-hoc questions.

Knowledge Graph & Vector Search for Research Content

Python · FastAPI · Neo4j (optional) · PostgreSQL · pgvector · LangChain

Built a research discovery platform indexing analyst notes, filings and earnings calls into **PostgreSQL + pgvector**. Used LangChain to enrich content with entities and relationships, and delivered a semantic search API that plugged into existing web portals with minimal changes.

Legacy PL/SQL Modernisation to Python Services

Python · SQLAlchemy · Celery · Oracle · PostgreSQL · Kubernetes

Led a multi-year effort to replace monolithic PL/SQL jobs with containerised Python services. Introduced clear **domain boundaries**, standardised data-access layers for Oracle and PostgreSQL, and implemented async job orchestration. Improved transparency, observability and deployment safety, while reducing operational incidents.

CORE SKILLS

LANGUAGES & FRAMEWORKS

Python (Advanced)

FastAPI

Django / DRF

AsyncIO

TypeScript (APIs)

Bash

DATABASES & STORAGE

PostgreSQL

Oracle

pgvector

SQL Performance Tuning

Data Modelling

Redis

AI, LLMS & LANGCHAIN

LangChain

RAG (Retrieval-Augmented Generation)

Prompt Engineering

OpenAI / Anthropic / Azure OpenAI

Vector Stores (PostgreSQL, Chroma, Pinecone)

Tool-Calling & Agents

Guardrails & Safety

ARCHITECTURE & DEVOPS

Microservices

Event-Driven Design

Docker

Kubernetes

CI/CD (GitLab, GitHub Actions)

AWS / Azure

Observability (Prometheus, Grafana, ELK)

LEADERSHIP & DELIVERY

Technical Strategy

Mentoring & Coaching

Stakeholder Management

Agile / Kanban

Cross-team Collaboration

EDUCATION

MSc, Software Engineering

University of Cape Town – Cape Town, South Africa · 2008 – 2010

Thesis: *Scalable Service-Oriented Architectures for Data-Intensive Systems*

BSc (Hons), Computer Science

University of Lagos – Lagos, Nigeria · 2004 – 2008

Final year project on high-performance query processing over relational databases.

CERTIFICATIONS & TRAINING

Oracle Certified Professional, Java SE 6 (historical; foundation in enterprise stacks).

PostgreSQL Administration & Performance Tuning (EnterpriseDB training).

Advanced LangChain & LLMOps Workshops (various online programmes, 2023–2024).

AWS Certified Solutions Architect – Associate.

ADDITIONAL INFORMATION

DOMAINS

Capital Markets

Retail & E-commerce

Healthcare

COMMUNITY & LEADERSHIP

Regular mentor for early-career African developers transitioning into UK software roles.

Speaker at internal engineering guilds on **LLM architectures**, **LangChain patterns** and **production-grade RAG**.

Contributor to internal Python and SQL style guides and reviewer of critical database-schema changes.

Detailed references and portfolio available on request.