Samuel Adole

Senior Full-Stack Engineer · Python / TypeScript · SaaS, AI, LLM & RAG Systems

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PROFILE

Senior Software Engineer with six years of experience architecting and delivering production systems across high-throughput SaaS, fintech, and healthcare. I specialise in taking distributed backend platforms from greenfield design to launch, leveraging Python (Django, FastAPI), TypeScript, and event-driven AWS infrastructure — including a fintech platform architected from scratch as sole backend lead. In environments where data integrity and compliance are non-negotiable, I enforce strict engineering quality gates, including robust CI/CD, structured logging, and high test coverage, and mentor the engineers around me. With an MSc in Data Science, I bridge traditional software architecture with AI engineering by building observability pipelines and integrating frontier LLMs into production environments.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript (ES6+), SQL, Node.js, Bash

Backend & APIs: Django, Django REST Framework, FastAPI, Flask, Falcon, NestJS, Express, REST, WebSockets, OpenAPI/Swagger

System Architecture: Distributed Systems, Microservices, Event-Driven Architecture, Multi-Tenant SaaS, API Design, High Availability

Data Engineering: PostgreSQL, Redis, MongoDB, Celery, ETL Pipelines, Schema Design, Query Optimisation, Data Reconciliation

Cloud & DevOps: AWS (EC2, S3, Lambda, RDS), Docker, Kubernetes, Helm, Ansible, Linux, GitHub Actions CI/CD, Vercel, IaC

Testing & Observability: PyTest, Jest, React Testing Library, TDD, Structured Logging, CI/CD Quality Gates, Code Review

Security & Compliance: JWT, RBAC, Secure REST API Design, Audit Trails, Healthcare Data Compliance

Frontend: React, Next.js, Redux Toolkit, Component-Driven UI, Real-Time Data Visualisation

AI & LLM Engineering: LangChain, Pydantic AI, OpenAI API, Anthropic Claude API, RAG, Embeddings & Vector Retrieval, Prompt Design, Tool Calling, Structured Output

LLM Evaluation & Observability: RAGAS (Relevance, Groundedness, Correctness), Custom Pipeline Tracing, ChromaDB, BM25, Reciprocal Rank Fusion

Machine Learning: PyTorch, TensorFlow, STT/ASR Training Pipelines, Data Augmentation, NLP, Statistical Modelling

Leadership: System Design Ownership, Engineering Standards, Mentoring, Agile/Scrum, Technical Writing, Incident Response

SELECTED PROJECT

Real-Time Observability & Evaluation Platform for RAG Systems – 2026

MSc Data Science dissertation — Leeds Beckett University · Python · LLM APIs · Observability

- Built an observability platform in Python 3.12 instrumenting Retrieval-Augmented Generation (RAG) pipelines end-to-end, utilising LangChain, Pydantic AI, and the OpenAI API to capture retrieval and generation stages as structured traces.
- Designed a dual-index retrieval layer: ChromaDB (HNSW, cosine, 384-dim all-MiniLM-L6-v2 embeddings) fused with BM25Okapi via a custom Reciprocal Rank Fusion layer (k=60, 0.6 dense / 0.4 sparse).
- Implemented automated quality evaluation with RAGAS 0.4 (context relevance, faithfulness, answer correctness) using Qwen2.5 7B as a fixed third-model-family judge, surfaced as live per-query metrics rather than batch-scored after the fact.
- Evaluated LangSmith, Arize Phoenix, TruLens, and OpenTelemetry LLM extensions before building custom instrumentation: a perf_counter timer across four stages (embed, retrieve, generate, evaluate), writing one orjson document per query with token counts reconciled against tiktoken — revealing that RAGAS evaluation accounts for 85.7% of end-to-end latency.

PROFESSIONAL EXPERIENCE

AI Generalist · Mercor Jun 2026 – Present · US · Remote

Global AI talent platform for model evaluation and developer placement

- Evaluated 500+ pieces of AI-generated content and corporate presentation decks, establishing strict quality criteria to filter out repetitive language, hallucinations, and unpolished layouts.
- Analysed complex technical prompts and provided human-in-the-loop feedback to fine-tune frontier LLMs' reasoning and coding.

Senior Full-Stack Software Engineer · Code & Care Oct 2023 – May 2026

Software development & out-staffing company — embedded in client engineering teams

Client: TOCA Social · Oct 2023 – Nov 2025 · London, UK · Remote

- Designed and maintained public REST APIs and WebSocket services (Node.js/TypeScript) powering real-time, multi-venue synchronisation across a distributed microservices architecture on AWS, handling up to 10,000 concurrent requests per second with weekend event peaks against AWS service SLAs of 99.5–99.999% uptime, using Docker, Kubernetes (EKS), and Helm for high-availability container orchestration.
- Owned the TOCA Connects integration layer end-to-end, a cross-studio data-synchronisation service connecting internal platform services to third-party venue-management systems, with the reconciliation and consistency guarantees enterprise integrations demand.
- Cut backend API latency by 30% through PostgreSQL query optimisation, including custom indexes, refactored joins, and Common Table Expressions (CTEs), alongside Redis caching; introduced structured logging and monitoring that measurably shortened mean time to detection on production incidents.

- Set and upheld engineering standards through code review and CI/CD quality gates (GitHub Actions), sustaining 80%+ test coverage (Jest, React Testing Library) and preventing regressions at scale.

Python LLM Engineer · Turing Aug 2024 – Sep 2024 · US · Remote

AI-powered talent platform — embedded in client engineering teams

- Assessed and benchmarked LLM-generated code in Python, TypeScript, and advanced SQL (focusing on query execution plans, recursive CTEs, and database normalisation) to evaluate functional correctness, algorithmic complexity, and architectural design.
- Constructed complex software engineering prompts and gold-standard solutions to build evaluation datasets used in fine-tuning frontier models.

Senior Full-Stack Software Engineer · Code & Care Apr 2022 – Aug 2023

Software development & out-staffing company — embedded in client engineering teams · Remote

Client: FMG (Fulton Market Group) · Apr 2022 – Aug 2023 · NSW, Australia (Remote)

- Architected and built high-throughput internal REST APIs in Python (Falcon) for a multi-tenant supply chain SaaS platform, with strict validation, error handling, and full OpenAPI documentation.
- Delivered real-time operational dashboards integrating WebSocket-driven Python backends with a Next.js and React frontend, utilising Redux Toolkit for complex state management to give operations teams live visibility of 20,000+ monthly shipments.
- Introduced structured logging, polling fallbacks, and fault-tolerance patterns across distributed services, significantly reducing on-call incidents.

Full-Stack Software Engineer · Intron Health Nov 2021 – Mar 2022 · California, US · Remote

Healthcare technology — EMR integration under compliance constraints

- Built high-throughput ETL pipelines processing 10,000+ daily AI transcription outputs and integrating them with downstream EMR systems via secure REST APIs; designed normalised PostgreSQL schemas and wrote complex SQL stored procedures to ensure ACID compliance, strict data accuracy, and secure audit trails under healthcare regulations.
- Developed preprocessing and data-augmentation tooling for STT/ASR model training (PyTorch, TensorFlow), capturing 300+ accent profiles with measurable gains in accuracy and pipeline repeatability.
- Wrote comprehensive integration specs covering data flow, failure modes, and rollback behaviour, giving the team a reliable reference for asynchronous review across time zones.

Full-Stack Software Engineer · Amenta Media AB (Likvio) Aug 2021 – Dec 2021 · Gothenburg, Sweden · Remote

Fintech SaaS — greenfield Django/FastAPI platform build

- Architected Likvio's backend platform from scratch as sole backend lead, defining the data model, service boundaries, and integration architecture on FastAPI and Django REST Framework, and driving Test-Driven Development (TDD) with PyTest for robust error handling and financial data reconciliation, through to a launch supporting $4,000+ monthly transactions.
- Integrated the Fortnox financial API to automate contract lifecycle and invoice synchronisation, and managed high-volume background processing (Celery, PostgreSQL) with retry and reconciliation logic, SQL transaction management, row-level locking, and optimised bulk inserts to maintain 100% data integrity across concurrent financial operations.
- Authored complete Swagger/OpenAPI documentation covering endpoints, authentication flows, and error schemas, enabling external developers to self-serve integration.
- Onboarded and mentored junior developers, establishing coding standards and code-review practice that brought them to independent contribution.

Software Engineer · V3C Technologies Jan 2021 – Apr 2021 · Abuja, Nigeria

Multi-role education platform

- Designed Flask REST APIs with JWT authentication and role-based access control (RBAC) across teacher, parent, and student portals, an access model directly applicable to enterprise SaaS user provisioning.
- Standardised API lifecycle documentation (Swagger/OpenAPI) and implemented architectural improvements that reduced developer integration time by 30%.

Full-Stack Python Developer · eHealth4everyone Dec 2019 – Jan 2021 · Abuja, Nigeria

Health-data / DHIS2 platform — regulated public-health domain

- Built and managed a DHIS2 hosting platform (Django, Ansible), automating server provisioning and configuration management as infrastructure-as-code at scale in a public-health data context.
- Designed and deployed high-availability data APIs (Django REST Framework, Redis, AWS EC2/RDS) for the HealthThink dataset; optimised SQL query sets, Redis caching, and auto-scaling improved overall system throughput by 40%.

EDUCATION & CERTIFICATIONS

MSc Data Science · Leeds Beckett University, Sep 2025 – Sep 2026

BSc Computer Science · Bingham University Karu, Sep 2014 – Sep 2018

Neo4j Fundamentals · Neo4j GraphAcademy, Jul 2026

AWS Machine Learning Foundations · Amazon Web Services