

SAM ADEYEMI

GENERATIVE AI SOFTWARE ENGINEER • AI SYSTEMS ARCHITECT

Python | Multi-Agent AI | FastAPI | OpenAI API | Intelligent Automation

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85%

FASTER WORKFLOW
EXECUTION

73%

REDUCTION IN OUTPUT
ERRORS

6+

YEARS PRODUCTION
ENGINEERING

7

AI SERVICES / AGENTS
DESIGNED

PROFESSIONAL PROFILE

Generative AI Software Engineer with over six years of experience designing, building and deploying production software using **Python, FastAPI, REST APIs and OpenAI-powered applications**. Experienced in architecting modular AI systems, intelligent workflow automation platforms and scalable backend services that solve practical problems across business, healthcare, education and digital transformation.

Architect of a production **Multi-Agent AI Platform** — seven specialised AI agents collaborating through a central orchestration layer for communications, analytics, knowledge retrieval and intelligent user interaction. Built AI-powered workflow systems that **cut output errors by 73% and accelerated workflow execution by 85%** through structured validation, metadata-driven architecture and event-based orchestration.

Published peer-reviewed AI researcher in *Springer Nature's AI and Ethics*, combining rigorous software engineering practice with hands-on expertise in Generative AI, backend engineering and intelligent automation.

CORE EXPERTISE

GENERATIVE AI

- Multi-Agent AI Architecture
- OpenAI API
- Large Language Models (LLMs)
- AI Workflow Automation
- Prompt Engineering
- Knowledge-Based AI Systems (RAG-aligned)
- Agent Orchestration
- AI Output Validation
- Context-Aware Applications

SOFTWARE ENGINEERING

- Python
- FastAPI
- REST API Development
- Node.js
- JavaScript
- SQL • JSON • YAML
- Git • GitHub • Version Control
- Modular Architecture
- Event-Driven Systems
- React, Next.js, TypeScript

INFRASTRUCTURE

- Linux Administration
- Vercel
- VPS Deployment
- Hostinger VPS
- DigitalOcean
- API Deployment
- Deployment Pipelines
- Production Maintenance
- Technical Documentation

PROFESSIONAL EXPERIENCE

Lead Software & AI Systems Engineer

2019 – Present

Apex Digital Africa

Lead the design, development and deployment of AI-powered software platforms, workflow automation systems and backend applications supporting digital transformation, education, research and ministry technology.

- Designed and deployed **production-ready backend applications** using Python and FastAPI, delivering end-to-end from requirements through architecture, implementation, testing and deployment.
- Built and maintained **REST APIs** supporting scalable software platforms across multiple domains.

- Integrated **OpenAI APIs** into multiple production AI applications for intelligent automation, content generation and domain-specific assistance.
- Designed **metadata-driven workflow systems** using JSON and YAML, enabling configurable business logic without modifying application code.
- Engineered event-driven orchestration pipelines that **improved workflow execution speed by 85%**.
- Implemented structured validation frameworks **reducing output errors by 73%**.
- Managed **Linux VPS infrastructure**, deployment pipelines and production application maintenance.

■ FEATURED ENGINEERING PROJECTS

► **PHHM Multi-Agent AI Platform** — *Lead Architect & Developer*

Production-ready modular AI platform in which **seven specialised agents** — Overseer, Welcome, Analyst, Communications, Care, Gospel and an AI Knowledge Base — collaborate through a central orchestration layer. Delivers intelligent task routing, context-aware response generation and domain-specific knowledge retrieval as production backend services.

Stack: Python • FastAPI • OpenAI API • REST APIs • JSON • YAML • Linux • Git

► **SeedTracker — AI-Powered Church Finance & Engagement Platform** — *Founder & Lead Software Engineer*

Designed and developed a **multi-tenant SaaS platform** for church financial management, member engagement and AI-assisted administration, built specifically for African churches. Features a real-time giving analytics dashboard, **AI-powered financial insights**, QR-enabled member identification, online payment integration, WhatsApp automation, automated reporting, campaign and pledge management, role-based administration, a digital member portal and an enterprise audit trail.

Stack: Python • FastAPI • OpenAI API • PostgreSQL • REST APIs • JavaScript • Payment Gateway Integration • WhatsApp Integration

► **AI CV Builder Pro™**

AI-powered recruitment platform delivering ATS optimisation, tailored CV and cover-letter generation, company intelligence, interview preparation, skills-gap analysis and recruiter insights.

Stack: Python • OpenAI API • FastAPI

► **TrialForge AI & TDCT Validator**

AI-powered clinical trial platform supporting protocol development, validation and structured regulatory documentation, paired with a Python validation engine executing **20+ automated protocol validation rules** through structured YAML-driven logic — raising quality assurance for clinical trial protocols before initiation.

Stack: Python • YAML • Validation Frameworks

► **Company Intelligence Engine**

AI-assisted analysis platform that extracts, summarises and presents company information, job requirements and recruitment intelligence to support targeted applications.

► **School of Ministry AI**

AI-assisted learning platform supporting educational content generation, knowledge retrieval and digital ministry training.

■ RESEARCH & PUBLICATIONS

Governance and Legitimacy in AI: Developing and Testing the AI Authorship Legitimacy Model

AI and Ethics (Springer Nature), 2026 — Peer-reviewed research proposing and evaluating a framework for assessing legitimacy and governance in AI-assisted authorship.

Automated Trial Design Consistency Testing (TDCT): A Validation System for Detecting Protocol Design Flaws Before Clinical Trial Initiation

Zenodo, 2025 — Structured validation framework improving protocol quality through automated consistency testing.

■ EDUCATION & PROFESSIONAL STANDING

MSc Information Security & Software Engineering
University of Greater Manchester — **Distinction**

BEng (Hons) Software Engineering
University of Bolton — **First Class Honours**

- Peer Reviewer — *Trials* Journal (Springer Nature)
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■ **TECHNICAL TOOLKIT**

LANGUAGES	Python, JavaScript, SQL, HTML5, CSS3, React, Next.js, TypeScript
FRAMEWORKS	FastAPI, Node.js
AI	OpenAI API, Multi-Agent AI, Prompt Engineering, AI Workflow Automation
DATA	PostgreSQL, SQL, JSON, YAML
TOOLS	Git, GitHub, Linux
DEPLOYMENT	Hostinger VPS, DigitalOcean

Eligible to work in the UK • Based in Sheffield • Willing to undergo Security Clearance • Available for Software Engineering, Generative AI & AI Systems roles