

Ibrahim A. Makanjuola

Software Engineer · AI Systems & Agentic AI

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Software engineer building **AI systems**: LLM inference infrastructure, tool-calling agents, and on-device ML. Deployed an open-weight multilingual LLM on GPUs with vLLM, shipped an agent that reasons over live sensor data to actuate physical hardware, and quantized an LSTM to INT8 for microcontroller inference.

EXPERIENCE

Backend Engineer, Contract · De Cloud23 Technologies Apr 2026 – Present
Games4Africa (games4africa.com), a central hub platform for African gaming.

- Build and maintain core backend services for the hub in **Express** and **MySQL**, designing relational schemas and writing hand-rolled SQL through the MySQL driver rather than an ORM.
- Work across the codebase on player accounts and authentication, game-studio integrations into the hub, and wallet, transaction, and rewards flows.

Backend Software Engineer, Intern · Intenttech Limited Oct 2024 – Sep 2025
Software company building Confris (conference management) and OTWise AI (UK home-adaptation grants).

- Built REST APIs in **NestJS** and **Prisma** for two production platforms, designing **PostgreSQL** schemas and optimizing queries to cut response times ~25%.
- Automated deployments with **Docker** and **Azure DevOps** CI/CD, reducing release time ~75%; added auth and role-based access control across multi-role workflows.

Lead Engineer, Volunteer · Retgrow Initiative Dec 2023 – Present

- Built the first version of **Retgrow Learn**, a nonprofit e-learning platform, as one of the first two engineers; now own architecture, code review, and technical direction.
- Architected it on **Next.js**, **FastAPI**, **SQLAlchemy**, and **PostgreSQL** with REST APIs, auth, and course-progress tracking, reaching 100+ students.

Software Engineering Intern · MEMMCOL Feb 2022 – Jul 2022

- Early placement at a smart-meter manufacturer: reviewed production **Java** on the Meter Data Management System and built internal practice projects in Spring Boot and PrimeFaces JSF against **MS SQL Server**.

SELECTED PROJECTS

Artemis · AI Smart Home Agent Python, FastAPI, Gemini, MQTT, ESP32/C++

- Built an LLM agent running a full agentic loop over voice and text (tool selection, execution, result fed back, spoken confirmation) behind a human approval gate requiring an explicit **reasoning trace**.
- Engineered an event-driven **MQTT**/REST sensor pipeline from ESP32 firmware publishing only on state change, plus a Python simulator mirroring the firmware's exact wire contract for hardware-free development.

Kliniq · clinical AI platform across four Nigerian languages Awarri Developer Challenge 2025

- Deployed **N-ATLaS**, an open-weight Nigerian multilingual LLM, on **Modal** A10G GPUs with **vLLM**: FP16 weights, 8K context, cached model volumes, and request concurrency for warm starts.
- Implemented **tool calling on a model with no native function-calling support** by defining a call protocol, parsing tool blocks from raw generations, and executing them transactionally against PostgreSQL.

EV Range Estimation · Edge AI for Electric Tricycles TensorFlow, KerasTuner, TFLite Micro

- Trained an **LSTM** over 60-second windows of 10 telemetry features, tuning units, dropout, and learning rate with **KerasTuner** Bayesian optimization.
- Applied full-integer **post-training quantization** to INT8, cutting model footprint over 75%, and deployed on-device via TFLite Micro inside a 120 KB tensor arena.

Attention-Based Malaria & TB Screening · research implementation TensorFlow, Keras, OpenCV, scikit-learn

- Implemented **CBAM** channel and spatial attention from scratch, injecting it into five architectures (ResNet50, VGG16, MobileNetV2, DenseNet121, custom CNN) behind one shared builder so the backbone stayed the only variable.
- Established significance with **McNemar tests** between model pairs rather than raw accuracy deltas, with Grad-CAM interpretability and latency and size benchmarks for constrained deployment.

Skyla · agentic life-automation platform, in development: users compose sandboxed agents that run long tasks and keep persistent context.

TECHNICAL SKILLS

LANGUAGES	Python, TypeScript, JavaScript, SQL, C++ (embedded), Java
AI SYSTEMS	LLM serving (vLLM, Modal, Vertex AI), tool and function calling, agent orchestration, Model Context Protocol, INT8 quantization, PyTorch, TensorFlow, Keras, scikit-learn, OpenCV, YOLOv8
BACKEND	FastAPI, NestJS, Express, Django, async Python (SQLAlchemy 2.0, asyncpg), Prisma, Pydantic, REST API design, JWT and RBAC, data structures and algorithms, system design
INFRA & DATA	PostgreSQL, MySQL, MS SQL Server, Redis, Docker, Azure DevOps CI/CD, AWS (SageMaker, Lambda, Step Functions), Google Cloud (Cloud Run, Cloud Functions, Cloud SQL), MQTT, Git

EDUCATION

B.Eng. Electronics and Computer Engineering · Lagos State University Graduated Aug 2026 · CGPA 4.42 / 5.00

CERTIFICATIONS & AWARDS

OCI Generative AI Professional, Oracle (2025) · OCI Multicloud Architect Professional, Oracle (2025) · AWS Machine Learning Nanodegree, Udacity (2025) · Model Context Protocol, Anthropic (2026) · Millennium Fellow, Millennium Campus Network (2024)