

FREDRICK NYANG'AU

Backend Software Engineer | Python · FastAPI · Django · PostgreSQL · Docker
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PROFESSIONAL PROFILE

Information Technology graduate (Kabarak University, Dec 2025) specializing in cloud-native backend engineering. Builds scalable, production-ready REST APIs and microservices using **Python, FastAPI, and Django**, containerized with **Docker** and deployed on **Ubuntu 24.04 LTS** behind **nginx**. Passionate about async-first architectures, database optimization, and solving real Kenyan business problems - from M-Pesa billing automation to poultry farm analytics.

TECHNICAL SKILLS

Languages	Python 3.12 (primary), SQL, JavaScript
Frameworks	FastAPI (async-first, high-performance APIs), Django (full-featured web apps)
Databases	PostgreSQL · SQLAlchemy ORM · schema design · indexing · query optimisation
Infrastructure	Docker · nginx (reverse proxy, SSL termination) · systemd services
Auth & Security	JWT authentication · OAuth2 · REST API security best practices
Linux / DevOps	Ubuntu 24.04 LTS · Zsh/Oh-My-Zsh · UFW · Bash scripting · Git / GitHub
API & Testing	Postman · Pytest · async vs sync pattern selection
Cloud Awareness	AWS fundamentals (Compute, Storage, Networking)

KEY PROJECTS

Wi-Fi Billing & M-Pesa Automation

In Progress | FastAPI · Docker · PostgreSQL · Daraja API

- Architecting a **containerized backend service** for automated internet voucher management deployed behind nginx on Ubuntu 24.04 LTS.
- Integrating **M-Pesa Daraja 3.0 C2B API** for real-time payment processing, eliminating manual billing friction for ISP customers.
- Implementing **JWT-based authentication** with role-based access control (admin, reseller, customer) and async endpoints for high throughput.
- Managed with systemd service units for process supervision and auto-restart on failure.

KukuFiti – Broiler Farm Management

FastAPI · PostgreSQL · SQLAlchemy

- Designed a **normalized PostgreSQL schema** for high-frequency poultry health, mortality, and profit-margin data entry across multiple farms.
- Built **async REST endpoints** with SQLAlchemy ORM, achieving sub-50 ms response times for dashboard queries.
- Focused on farmer UX: schema intentionally maps to pen-and-paper workflows to ease digital adoption.

TraceHub – Team Software Collaboration Tool

Node.js · React · Git workflows

- Served as **Team Lead for a 4-member agile squad**, managing branch strategies, code reviews, and sprint delivery.
- Designed the search and lost-item matching engine; resolved critical blockers in Git merge conflicts and deployment.

AfriSound - Digital African Musical Instruments & History Archive

Python · FastAPI · Digital Archiving Technology

- constructing the backend, including research management, for an interactive digital archive platform.
- utilizing FastAPI for the student-facing API layer and Django's admin and ORM for content management.

WORK EXPERIENCE

ICT Intern - Huduma Kenya Secretariat, Nakuru

Jan 2025 – Apr 2025

- Provided Level 1 technical support and network troubleshooting, maintaining near-100% uptime for citizen-facing digital services (e-Citizen portal).
- Assisted citizens in navigating government digital platforms under high-pressure conditions, reinforcing customer-first thinking in technical problem-solving.
- Gained practical exposure to service desk operations, escalation workflows, and LAN infrastructure management.

COMMUNITY & LEADERSHIP

Lead Learner - Backend Engineers 2026 Peer Group

2026 – Present

- Founded a **technical peer study group** focused on distributed systems, algorithmic complexity (Big-O), and competitive assessment preparation (Codility/HackerRank).
- Facilitates weekly code reviews and architecture discussions, fostering a collaborative, production-minded learning culture.

EDUCATION

BSc Information Technology - Kabarak University

Sep 2021 - 19th Dec 2025

Relevant coursework: Distributed Systems · Data Structures & Algorithms · Software Engineering · Database Management Systems · Computer Networks

COMPLIANCE DOCUMENTS

- DCI Certificate of Good Conduct-[In Process]
- CRB Clearance Certificate - [In Process]

REFERENCES

Available on request - Professional (Huduma Kenya, Nakuru Supervisor), Academic (Kabarak University Lecturer).