

MERCY KATHOMI MBAKA

Software Engineer | Full-Stack Developer

Nairobi, Kenya

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GitHub: <https://github.com/Mbaka-cmd>

SUMMARY

Backend Engineer specializing in Python, Django, and PostgreSQL with production experience building RESTful APIs, JWT-secured systems, and M-Pesa payment integrations. Proven ability to design and deploy scalable multi-tenant SaaS platforms with real-time transaction processing, webhook handling, and automated reporting systems. Strong focus on deployment, performance, and building systems for real users.

TECHNICAL SKILLS

Backend: Python, Django, Flask, REST APIs, JWT Authentication, Webhooks

Database: PostgreSQL, SQLite, Indexing, Query Optimization, Schema Design

DevOps: Docker, Docker Compose, Nginx, Gunicorn, CI/CD, Linux (Ubuntu)

Payments: M-Pesa STK Push (Daraja API), Webhook Reconciliation, Retry Logic

Frontend: HTML5, CSS3, JavaScript (Vanilla, Mobile-First)

Tools & Libraries: Git, Render, WeasyPrint, Africa's Talking SMS API, Requests

KEY PROJECTS

School Management SaaS System | [Sole Developer](#) · [Live: https://school-management-system-final-1.onrender.com/](#) 2026

- ▶ Built a multi-tenant Django/PostgreSQL SaaS platform supporting 1,000+ student records with 4 role-based portals (Admin, Staff, Student, Parent)
- ▶ Implemented JWT-secured RBAC system ensuring secure multi-user access and data isolation
- ▶ Integrated M-Pesa STK Push (Daraja API) with webhook callbacks, idempotent retry logic, and transaction reconciliation, reducing payment failures and disputes
- ▶ Automated generation of hundreds of PDF report cards per term using WeasyPrint with grading logic and ranking systems
- ▶ Designed and deployed modules for attendance tracking, timetable generation, analytics dashboard, and library management
- ▶ Integrated Africa's Talking SMS API enabling bulk notifications (fees, attendance, OTPs) for 2,000+ messages per batch
- ▶ Deployed using Docker, Gunicorn, and Nginx with production environment configuration+

Website Security Certificate Platform | [\(School Project\)](#) - Flask, PostgreSQL 2025

- ▶ Digital security audit certificate platform - JWT auth, WeasyPrint PDFs, webhook automation, full admin audit trail

Smart Tap Tots - IoT Device Management | [Collaborative Project](#) 2025

- ▶ Designed REST API and PostgreSQL schema for IoT telemetry ingestion, device registration, and data logging

EXPERIENCE

Software Engineer Attaché | [Survey of Kenya, Ministry of Lands](#) Sep - Dec 2025

- ▶ Supported digital workflow implementation and ICT system monitoring for government land survey operations

EDUCATION

Diploma in Software Engineering - Zetech University 2024 - 2025

KCSE - St. Bakhita Chuka Girls High School 2016 - 2019

ACHIEVEMENTS

- ▶ Participant, Red Bull Basement - national innovation & entrepreneurship program
- ▶ Self-taught M-Pesa Daraja API: sandbox to production migration with live webhook reconciliation