

VICTOR MUREGI

Full-Stack Software Engineer & Founder · Systems, APIs & Payments

Location: Nairobi, Kenya Phone: +254 797 846 126 Email: i.am.muregi@gmail.com

Portfolio: personal-portfolio-muregis-projects.vercel.app GitHub: github.com/Muregis LinkedIn: linkedin.com/in/victor-muregi

PROFESSIONAL SUMMARY

Production-focused **Full-Stack Software Engineer** and founder of **MuregiScore Technologies** with 3+ years of experience architecting and shipping mission-critical institutional software. Proven track record building end-to-end multi-tenant systems in **React, TypeScript, Node.js/Express, PHP, and PostgreSQL/MySQL**. Experienced solving complex operational challenges: idempotent **Safaricom M-Pesa Daraja payment workflows**, granular **Role-Based Access Control (RBAC)**, **background worker queues**, and **Constraint Satisfaction (CSP) timetabling algorithms**. Adept at engineering resilient applications optimized for entry-level mobile devices and spotty network bandwidth across Africa.

TECHNICAL COMPETENCIES

Languages	TypeScript, JavaScript, PHP, SQL, Python, Java, C++
Frontend Architecture	React 19, Next.js, Tailwind CSS, Responsive Design, State Management, HTML5, CSS3, Web Performance
Backend & APIs	Node.js, Express.js, PHP, RESTful APIs, Webhook Ingestion, API Versioning, Error Handling, Middleware
Databases & Integrity	PostgreSQL, MySQL, 3NF Normalization, Indexing & Query Optimization, ACID Transactions, Audit Ledgers
Security & RBAC	Granular Role-Based Access Control (RBAC), JWT Authentication, Session Cookies, Bcrypt, Data Isolation
Queues & Asynchronous	Background Job Queues (Redis/BullMQ patterns), Asynchronous Workers, Batch Report Generators
Payment Integrations	Safaricom M-Pesa Daraja API (STK Push, C2B, B2C, Idempotent Callback Verification), Paystack
DevOps & Tooling	Git, GitHub, GitHub Actions CI/CD, Linux (Ubuntu), Nginx, Docker (basics), Vercel, Railway

ENGINEERING EXPERIENCE

Founder & Lead Software Engineer

2024 – Present

MuregiScore Technologies · Nairobi, Kenya

- Founded engineering firm delivering institutional enterprise web systems and fintech integrations for Kenyan schools and commercial SMEs.
- Architected, developed, and deployed 3 flagship production platforms: **EduCore** (school operations & CBC report cards), **Core CRM** (sales pipeline & customer intelligence), and **EduCore Ratiba** (combinatorial timetable scheduling engine).
- Engineered Safaricom **M-Pesa Daraja STK Push and C2B payment integrations** with idempotent webhook listeners and database transaction locks, guaranteeing **zero double-crediting** under spotty mobile cellular connections.
- Established automated CI/CD deployment pipelines on **GitHub Actions** enforcing TypeScript compilation, ESLint, and automated builds to Vercel and Linux servers.

Freelance Full-Stack Developer

2023 – Present

Client Solutions & Engineering Contracts · Nairobi / Remote

- Delivered **15+ web applications, portals, and database systems** from client requirements gathering to production hosting.
- Architected **Sawa Solar Solution** (commercial clean-energy platform with instant WhatsApp quotation bridge) and **Gracious Love Academy** (institutional admissions portal).
- Built **Livestock Management Platform**, modeling recursive breeding lineages and daily milk yield tracking.
- Optimized frontend assets and bundle sizes to achieve **sub-second First Contentful Paint (FCP)** on low-spec Android devices.

FLAGSHIP SYSTEMS & ENGINEERING PROJECTS

EduCore — Comprehensive School Operations System

React · TypeScript · Node/Express · PostgreSQL · M-Pesa API

Multi-tenant institutional administration platform powering student records, CBC grading, automated term report cards, fee tracking, and M-Pesa payment reconciliation for Kenyan primary and secondary schools.

- **Idempotent Payment Engine:** Handled Safaricom M-Pesa STK Push callbacks with database transactions, eliminating duplicate receipts and keeping student ledgers **100% reconciled in real time**.
- **Batch Report-Card Generation:** Optimized automated PDF report card compilation for hundreds of student records from minutes to **2.3 seconds** without blocking the Node.js event loop.
- **Role-Based Access Control (RBAC):** Enforced 5-tier granular authorization separating Administrator, Principal, Teacher, Bursar, and Guardian access boundaries.
- Live: [educore-school-management-system-pi.vercel.app](#) · Repo: [github.com/Muregis/educore-school-management-system](#)

Core CRM — Sales Pipeline & Customer Intelligence Engine

React · TypeScript · Node/Express · PostgreSQL · REST APIs

Customer operations and deal pipeline platform built for Kenyan SMEs to eliminate lost sales inquiries across scattered WhatsApp threads and notebooks.

- **Interactive Kanban Pipeline:** Developed drag-and-drop deal stage management with automated follow-up reminders, increasing lead conversion visibility to **100%**.
- **High-Performance Relational Schema:** Engineered normalized PostgreSQL models for organizations, contacts, deals, and communication logs with **<50ms query response latency** on complex joins.
- **Multi-User Data Isolation:** Designed 4-tier hierarchical permissions ensuring sales representatives only access assigned prospects while executives view organization-wide metrics.
- Source Code: [github.com/Muregis/Core-Crm-model](#)

EduCore Ratiba — Constraint-Satisfaction Timetable Engine

TypeScript · React · Node.js · CSP Algorithms · Export Engines

Intelligent academic schedule optimization engine that solves the multi-constraint timetabling problem for schools and polytechnics.

- **Combinatorial CSP Engine:** Formulated timetabling as a Constraint Satisfaction Problem utilizing heuristic backtracking and constraint propagation to eliminate teacher and room collisions.
- **Rapid Computation:** Reduced timetable compilation cycle from **4–5 days of tedious manual drafting to under 3 seconds** for 40 multi-subject streams with **0 clashes**.
- **Multi-Format Sync:** Generated printable master school timetables, class schedules, and teacher workload cards with direct export and EduCore synchronization.
- Live: [educoreratiba.vercel.app](#) · Repo: [github.com/Muregis/Educore-Ratiba](#)

Commercial & Domain Systems (Selected Client Work)

HTML5 · CSS3 · TypeScript · Bootstrap · Vercel

- **Sawa Solar Solution:** Mobile-first clean-energy commercial portal with WhatsApp quote-dispatch integration ([Live Demo](#)).
- **Gracious Love Academy:** Institutional portal publishing fee breakdowns, curricula, and admissions workflows ([Live Demo](#)).
- **Livestock Management Platform:** Agricultural animal records application tracking vaccination histories and daily milk production ([Live Demo](#)).

EDUCATION & ACADEMIC CREDENTIALS

Diploma in Computer Science (Level 6) — Kiambu National Polytechnic

2023 – Present (Expected 2026)

Core Coursework: Software Engineering & SDLC, Data Structures & Algorithms, Relational Database Management Systems (RDBMS), Operating Systems (Linux & Windows), Computer Networks & Distributed Protocols, System Analysis & Design, Web Application Development.

AWARDS & TECHNICAL RECOGNITION

- **Top 5 Innovator, Kiambu Polytechnic Innovation Challenge (2024):** Awarded for designing and demonstrating EduCore School Management System.
- **Safaricom Daraja API Implementer:** Recognized for production STK Push and C2B transaction ledger resilience under mobile network retries.