

Sebastian Muchui

Software Engineer · Nairobi, Kenya

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PROFESSIONAL SUMMARY

Full stack software engineer based in Nairobi, Kenya, with a heavy focus on backend development and system design. A problem solver with a commitment to every challenge.

PROFESSIONAL EXPERIENCE

Software Engineer

May 2025 – Present

CHAJI Services Limited

Nairobi, Kenya

- Lead design and development of CHAJI's Charging Station Management System (CSMS), Battery Intelligence, and Fleet Management systems in Go.
- Build high-throughput data ingesters over WebSocket and MQTT.
- Design wallet-based billing systems built on the Daraja (M-Pesa) API.
- Design SDKs for USSD, SMS, and Daraja and use them in APIs.
- Develop a multi-channel notifications and alerts system.
- Own system design decisions and optimize based on observability metrics.
- Maintain a private fork of the open-source ocpp-go package, extending it with additional functionality.
- Build CI/CD pipelines for deployments and write unit tests for code.
- Collaborate with hardware and product teams to deliver end-to-end solutions.

Software Engineer

May 2024 – Nov 2024

Disheey

Nairobi, Kenya

- Translated Figma designs into responsive, high-performance frontends with modern web technologies.
- Integrated REST APIs to enable seamless communication between the frontend and backend services.

PROJECTS

Semi-Autonomous Wheeled Robot with Manipulator Arm

Final year project, BSc Control and Instrumentation, JKUAT

🔗 Firmware 🔗 Web app

- Designed and built, as part of a three-person team, a semi-autonomous wheeled robot with a four-joint manipulator arm for warehouse operations and environmental monitoring.
- Wrote C/C++ firmware for an ESP32 that drives a two-wheel base and the arm, reads sensors, and detects bumps and free-falls from an IMU.
- Streamed sensor telemetry and events over MQTT, with drive and arm commands received over the same channel.
- Built a Go (Fiber) web application with REST APIs, MQTT connectivity, and PostgreSQL and ScyllaDB storage to monitor and manage robot telemetry and events, self-hosted with Docker Compose.

Davis & Shirliff Ltd IoT Notifications, Alarms, and Triggers System 🔗

- Led a team building a distributed notification system for real-time alerts and alarms from IoT devices across the Davis & Shirliff ecosystem, handling 1,000+ alerts daily.
- Won the MVP Award at the Davis & Shirliff Hackathon for innovation and impact in IoT monitoring.

PixelSequel Object Relational Mapper 🔗

lightweight PHP Object-Relational Mapper (ORM) for MySQL databases

- Built a lightweight ORM on the PHP Standard Library that removes boilerplate SQL from vanilla PHP; published on Packagist with 20+ installs.

TECHNICAL SKILLS

Languages

HTML, CSS, SCSS, JavaScript, TypeScript, PHP, Python, Go, React/Next.js, Node.js, Django, Laravel

Hardware

Firmware (C/C++), Circuit design, Arduino, ESP32, FreeRTOS, STM32

DevOps Tools

Linux, Bash, Docker, Git, GitHub Actions, GitLab CI

EDUCATION

Jomo Kenyatta University of Agriculture and Technology

Bachelor of Science in Control and Instrumentation

Juja, Kenya

ALX Holberton

Software Engineering

Nairobi, Kenya

Jomo Kenyatta University of Agriculture and Technology

Inspire Youth in STEM Bootcamp

LEADERSHIP EXPERIENCE

Google Developer Groups JKUAT

Co-Lead

Juja, Kenya

- Coordinated core team selection, managed club events, and led outreach that grew membership by 100+ sign-ups.
- Built partnerships with the JKUAT Society of Engineering Students to strengthen the developer community and make it more inclusive.
- Hosted technical sessions on Web Development, DevOps, and IoT.

Google Developer Student Clubs (GDSC) JKUAT

IoT and Robotics Lead

Juja, Kenya

- Organized hands-on workshops that trained 20 mentees in IoT and Robotics fundamentals.
- Supported outreach that onboarded new members into the GDSC community.

REFERENCES

Lucy Mwangi, Project Manager, CHAJI

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Additional references available upon request.