

James Mogoi.

Software Engineer · Security · AI Engineering

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PROFILE

I build the systems Kenyan businesses run on, and I have shipped four of them to production on my own: a live electronics storefront taking M-Pesa, a point of sale that reconciles cash and mobile money on one receipt, a digital-forensic tool that proves what a USB device did on a machine, and Mlinzi, a public game that tests whether an AI till assistant can be talked out of money, in English, Swahili and Sheng.

Working on Linux since 2019. Strongest where correctness is expensive: payment reconciliation, authentication, audit trails, evidence, and AI agents whose controls are enforced in code. Veesa, the storefront I built and run, is registered with the Office of the Data Protection Commissioner.

EXPERIENCE

Software Engineer, Veesa Solutions

JAN 2026 TO PRESENT

Nairobi. Solo build to production, architecture through deployment. veesasolutions.co.ke

- Live consumer storefront for a Kenyan electronics retailer. 249 products across seven categories, priced in shillings, trading today.
- Integrated M-Pesa Daraja end to end, STK Push and C2B, covering webhook callbacks, duplicate-callback handling, timeout states and payment reconciliation.
- Took Veesa through registration with the Office of the Data Protection Commissioner under the Data Protection Act 2019, and built the data collection, retention and PII-safe logging that registration requires, with error monitoring scrubbed of personal data.
- Built the authentication and session layer, including edge-compatible credential hashing and mitigations for common web attack classes.
- Applied distributed rate limiting to authentication and payment routes to protect upstream payment APIs and hold availability under load.
- Enforced schema validation at every API boundary and secured media handling through presigned object-storage URLs.
- Built the admin the owner runs the shop from: products, pricing, photography and categories, without a developer in the loop.

Freelance Software Engineer

2023 TO PRESENT

Nairobi. Client web systems taken through requirements, design, implementation, testing and handover with technical documentation.

- **The Hive Pastries, Thika.** Cake catalogue priced per tier with a build-your-own flow and ordering that hands off to WhatsApp.
- **Medora, Nairobi.** Luxury bag and apparel storefront with category filtering, cart and delivery thresholds.
- **Barista Paul.** Bilingual English and French site for a competition barista, six service tiers with live pricing.

Freelance ICT Support and Systems Installation

2021 TO 2023

Nairobi. Operating system installation and recovery, hardware diagnostics, network setup and troubleshooting for small businesses and individual clients.

ICT Attachment, Kenya Seed Company

SEP TO DEC 2021

IT support across the organisation. Laptop servicing and repair, hardware and software fault diagnosis, end-user troubleshooting to resolution.

PROJECTS

Tija, point of sale for Kenyan retail

2026

Next.js, TypeScript, Prisma, SQLite, M-Pesa Daraja. [tija-seven.vercel.app/pos](#) (live demo, no sign-up)

- A till built for a shop with a queue. Cash and M-Pesa in one basket, on one receipt.
- Every sale, refund and payout is written once to an append-only record and cannot be quietly rewritten.
- Blind cash count at close: the cashier counts without seeing the expected figure, and the variance against the books is recorded rather than argued.
- Role separation. The till sells; stock levels and margins stay with the supervisor.

Digital Forensic Timeline and USB Exfiltration Analysis

FINAL YEAR, 2026

Python, FastAPI, TypeScript, React, PostgreSQL, Prisma, The Sleuth Kit. [forensic-timeline.vercel.app](#)

- Two-tier platform. A case-management and timeline front end delegates all binary artifact parsing to a Python microservice, with SHA-256 integrity hashing enforced at ingestion.
- Four artifact parsers: Windows registry USBSTOR device enumeration, LNK shortcut files, event logs, and a purpose-written NTFS USN change-journal decoder that recovers deletion records surviving an emptied Recycle Bin.
- Correlation engine that classifies every device-to-file link as confirmed or temporal-only, refusing to promote timing coincidence to evidence, with a written justification attached to each verdict.
- Tamper-evident chain-of-custody reports in the form recommended by ISO/IEC 27037 and NIST SP 800-86, backed by an immutable examiner audit log.
- Validated against a ground-truth dataset built in an isolated KVM/QEMU laboratory, acquiring and carving evidence read-only with The Sleuth Kit.

Mlinzi, an AI security game in English, Swahili and Sheng

2026

Next.js, TypeScript, Groq (gpt-oss-20b), Llama Prompt Guard 2, Neon Postgres, Vercel. [ulinzi.vercel.app](#) (live, no sign-up)

- Players try to talk a mobile-money till assistant into an unauthorized payment. Five levels keep one policy, approved refunds only, and move its enforcement from the prompt to code.
- Wins are judged in code from the payment the model actually attempted, never by a second model. At the last level the till checks every payment, so a fooled model still moves no money.
- Llama Prompt Guard 2 scores every message, blocking or not, to measure the detector on real Swahili and Sheng attacks. In testing it caught instruction overrides even in Sheng and missed a Sheng SIM-swap story entirely.
- Redacted research log, signed anonymous sessions, per-IP and daily rate limits, 73 automated tests.

TECHNICAL SKILLS

PAYMENTS	M-Pesa Daraja (STK Push, C2B), Stripe, webhook integration, payment reconciliation, Google Merchant API
SECURITY	Authentication and session design, rate limiting, input validation, data-protection compliance (Kenya Data Protection Act 2019, ODPC registration), digital forensics and artifact analysis, chain of custody (ISO/IEC 27037, NIST SP 800-86)
AI ENGINEERING	LLM tool calling (Groq, gpt-oss), prompt-injection defence, guard models (Llama Prompt Guard 2), code-enforced agent controls, attack logging and outcome evaluation
LANGUAGES	TypeScript, JavaScript, Python, SQL, Bash
BACKEND	Node.js, FastAPI, Django, REST API design, PostgreSQL, Prisma, Redis
FRONTEND	React, Next.js, TypeScript, Tailwind CSS
INFRASTRUCTURE	Linux (primary OS since 2019), Docker, CI/CD, AWS, KVM/QEMU

EDUCATION AND CERTIFICATIONS

Bachelor of Science in Computer Science

STARTING 2027

Diploma in Cyber Security and Forensics

2025 TO 2026

Zetech University, Nairobi. Entered at Semester 2 with credit from prior ICT certification. Final examinations completed.

Software Engineering, intensive bootcamp · Zindua School, Nairobi

OCT 2024 TO MAY 2025

Certificate in Information and Communication Technology · Cambridge College, Nairobi

2019 TO 2021

CCNA 1 to 3 · Cisco Networking Academy