DAVID OKELLO

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SUMMARY

Final-year Computer Science student at the University of Nairobi, graduating September 2026. Building production software alongside the degree since 2023: web and mobile apps, M-Pesa and Paystack payments, and the Linux servers behind them, for research institutes, agribusiness and consulting clients in Kenya.

EXPERIENCE

Software Engineering Intern, TDGG Livestock Data System Aug 2026 - Present
International Livestock Research Institute (ILRI) *Nairobi, Kenya*

- Working on ILRI's TDGG livestock data system, part of the Africa-Asia Dairy Genetic Gains programme, to extend it from dairy cattle to small ruminants (sheep and goats).
- Mapped the old MISTRO system against the current TDGG database and wrote up which parts of the schema already handle multiple species and which need rebuilding.

Technical Consultant, Infrastructure & Software Development Jun 2023 - Jul 2026
Kilimo Hakika Limited (Contract) *Nairobi, Kenya*

- Built and ran the company's cloud setup across several VPS instances and object storage, keeping public services separate from internal tools behind a self-hosted VPN. About $1,400 a year cheaper than the managed options we priced.
- Shipped staging.kilimohakika.com and fctnetwork.org on Next.js and PostgreSQL, both with custom admin panels for staff. The first also carries a quote-request workflow and M-Pesa payments through Safaricom's Daraja API.
- Built an internal project management tool in Django for a team of 15 to 20, and took hosting from ad hoc to maintainable: SSH key access, firewalls, Git-based deploys, automated backups.

  Tech: Next.js, PostgreSQL, Django, Docker, Caddy, Git, M-Pesa Daraja API

Full-Stack Developer Jan 2026 - Mar 2026
Bedefast Consultancy (Freelance, for CPHRM Group Limited) *Remote, Nairobi, Kenya*

- Built a pan-African advisory firm's website and content platform from scratch in Next.js 13 and TypeScript: twelve industry and service pages, a blog, case studies, search, and a role-based admin dashboard for content and form submissions. Preview at cphrm-mu.vercel.app.
- Moved the backend off Supabase onto PostgreSQL, Prisma, Auth0 and Docker so the client could host it themselves after handover. Ran the engagement solo, from scoping through to documentation.

  Tech: Next.js, TypeScript, PostgreSQL, Prisma, Auth0, Docker, S3-compatible storage

Software Engineer Intern, eKapiti Platform Jul 2025 - Mar 2026
International Livestock Research Institute (ILRI) *Nairobi, Kenya*

- Led development of eKapiti, a booking and visitor platform for ILRI's Kapiti Wildlife Conservancy, taken from prototype to production on iOS, Android and web. Built the booking flows for game drives, guesthouse stays and events, with dynamic pricing and availability checks.
- Integrated M-Pesa STK Push and Paystack, with webhook verification, retries and reconciliation so payment state stayed correct when a transaction failed midway.
- Built an offline-first conservancy map with routes, live GPS and geofencing for use where there is no signal, plus passwordless email-link login, SendGrid and Twilio messaging, and an admin dashboard showing bookings and revenue.

  Tech: React Native, Expo, TypeScript, Supabase (PostgreSQL, Auth, Edge Functions), M-Pesa API, Paystack API, Google Maps API

PROJECTS

MajiGuard, final-year research project Sept 2025 - May 2026
University of Nairobi *Nairobi, Kenya*

- Low-cost IoT water quality monitor. An ESP32 node reads pH, turbidity, TDS and temperature into Firebase every 30 seconds, and an Isolation Forest and River HalfSpaceTrees ensemble flags contamination against sensor drift at 82% precision and 100% recall over 1,373 labelled readings. Prophet forecasts ahead, and a retrieval-augmented generation (RAG) engine over a FAISS index of WHO and KEBS guidelines writes the safety advisories, surfaced in a React Native app. Under KES 15,000 a unit.

  Tech: ESP32, C/C++, Python, scikit-learn, River, Prophet, FAISS, RAG, Firebase, React Native

VOLUNTEER WORK

- **Website Developer (Volunteer), Episcopal Diocese of Wanyjok** (Apr 2026 - Aug 2026). Built and maintain dow-anglican.org in Next.js with a Git-backed CMS (Decap) on Cloudflare Pages, so staff publish without a developer.

EDUCATION

BSc, Computer Science Expected September 2026
University of Nairobi *Nairobi, Kenya*

Current standing: Second Class Honours (Upper Division) | Spoken languages: English (fluent), Kiswahili (fluent), Mandarin (HSK 1)

SKILLS

Languages: TypeScript / JavaScript, Python, SQL, C/C++ (Arduino), HTML / CSS
Web: React, React Native, Expo, Next.js, Tailwind CSS, Node.js, Django, Flask
Data and ML: PostgreSQL, Supabase, Firebase, Prisma, scikit-learn, River, Prophet, pandas, FAISS, RAG, Power BI
Infrastructure: Docker, Linux / VPS administration, Nginx, Caddy, Git, Cloudflare
Integrations: M-Pesa Daraja API, Paystack, Twilio, SendGrid, Auth0, Google Maps API, Mapbox