

CLIFF EZRA ESAU

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PROFESSIONAL SUMMARY

- Mid-Senior Full-Stack Engineer with 5 years of experience delivering end-to-end software — from Angular and Next.js frontends to Go and Laravel backends, mobile applications in Flutter, and ML-integrated data pipelines. Proven ability to architect scalable distributed systems, design performant database schemas, and ship production-ready products across web and mobile platforms.

EXPERIENCE

Software Engineer

Health-E-Net

October 2024 – June 2026, Nairobi, Kenya

- Delivered end-to-end features across PaperEMR's offline-first Angular 17 PWA frontend and its Node/PostgreSQL data and GraphQL backends, deployed across 12+ clinical sites.
- Frontend: built in-browser ML inference (TensorFlow.js handwriting recognition + OMR) with computer-vision deskew (WebGL perspective transform), offline PouchDB sync with client-side encryption, and a scan-completeness/rescan flow that closed a silent-data-loss gap.
- Backend: designed GraphQL APIs (Apollo, Sequelize, PostgreSQL) with JWT auth and role-based authorization, real-time subscriptions, and a streaming CouchDB-to-PostgreSQL ETL across 12+ multi-tenant schemas feeding Looker Studio BI with email-based row-level access control.
- AI/ML: trained image-classification models in Python (PyTorch/fastai, MobileNet/ResNet18) with transfer learning, augmentation, and Weights & Biases tracking, exporting to TensorFlow.js for edge inference, owning the full collection-to-labeling-to-training-to-deployment loop.
- Integrations: connected PaperEMR to DHIS2 (the national/global District Health Information System) via queue-backed routines posting structured health events upstream, and built a Bull/Redis + cron notification service driving SMS (Africa's Talking) and email (SparkPost) alerts plus an encrypted, ~90%-compressed data-dump API for fast mobile first-sync.

Software Engineer

USAID

June 2024 – August 2024, Nairobi, Kenya

- Developed cross-platform mobile applications for USAID and the Kenyan Government using Flutter, introducing local database saving and background syncing via RESTful APIs to improve data collection reliability in low-connectivity field environments.
- Designed and implemented user-centric features and navigation flows in Flutter, improving field worker experience and increasing user engagement through iterative, agile development.
- Handled the integration layer between the Flutter mobile client and complex legacy government backend systems, ensuring secure and accurate data exchange.
- Optimized application performance through efficient state management and code refactoring, reducing load times by 40%.

Software Engineer

Veritas Interactive

February 2022 - March 2024, Kampala, Uganda

- Engineered BetterLaw Africa — a full-stack law management platform — using Next.js for the frontend and Laravel/MySQL for the backend, streamlining case management workflows for legal professionals and reducing case processing time.
- Built SproutRealty, a full-stack property and tenant management SaaS, using Next.js, Laravel, and MySQL; delivered financial tracking, unit management, and complaint resolution features that increased property owner operational efficiency by 40%.
- Containerized services with Docker and implemented automated CI/CD pipelines via GitHub Actions on Digital Ocean infrastructure, cutting release times by 50% and standardizing deployments across projects.

EDUCATION

Bachelor of Science, Computer Science

University of Nairobi (UON)

Mobile & Web Development

eMobilis Technology Institute

Java & Android Development

Modcom Institute of Technology

SKILLS

- **Programming Languages:** Python, Go, JavaScript, TypeScript, Node.js, React.js, Next.js, GraphQL, Java, Angular.js, Laravel, Flutter, Vue.js, TensorFlow, Frappe & ERP Next, WordPress
- **Databases:** PostgreSQL, MySQL, Redis, MongoDB, CouchDB
- **Cloud & Infra:** Docker, Kubernetes, GitHub Actions, Digital Ocean, AWS, GCP
- **Architecture & APIs:** gRPC, Protocol Buffers, RESTful APIs, Distributed Systems, Microservices Architecture

PROJECTS

- **AutoPesa** – A high-performance, event-driven financial ledger built full-stack: a clean React frontend for account and transaction management layered over a Go backend implementing Hexagonal architecture. Engineered core business logic using gRPC/Protocol Buffers for typed internal service communication, backed by PostgreSQL with the Repository/DAO pattern. Exposed a GraphQL API gateway to optimize data fetching for the frontend, with Docker and Kubernetes manifests ensuring stable, reproducible deployments.
- **OncoWorld** – A full-stack web platform enabling patients at Kenyatta National Hospital to book cancer medication online for scheduled in-hospital administration. Delivered a responsive Next.js frontend handling booking flows and patient-facing UI, underpinned by complex relational schemas in PostgreSQL with Drizzle ORM to manage time-sensitive inventory and ordering workflows.
- **SproutRealty** – A property management SaaS built with Next.js, Laravel, and MySQL, enabling property managers in Uganda to manage finances, units, tenant complaints, and repairs from a single platform. Engineered both the Next.js frontend dashboards and the Laravel/MySQL backend APIs, and deployed the full stack on Digital Ocean.
- **Bloodpoint** – A full-stack blood donation and management platform serving hospitals and blood banks across Uganda and Zambia. Built the Next.js frontend and a RESTful Laravel/MySQL backend that synchronizes blood inventory across regional hospitals, tracks donation eligibility, and notifies registered members with health guidelines and donation reminders based on blood requirement needs.
- **CPIMS – Child Protective Information Management System** – An open-source cross-platform mobile application built with Flutter and a Python backend, enabling Kenyan government officers to capture and track child protective cases reported at police stations. Contributed frontend UI development in Flutter and backend integration. [GitHub Repo](#).
- **Law Guru – RAG Chatbot** – A Retrieval-Augmented Generation chatbot built for Kenya Law, using open-source Llama models to extract and reason over recent Kenyan legislation. Enables citizens to query and understand new laws in plain language. Built the Next.js frontend and integrated the RAG pipeline for document ingestion and response generation. [Live Site](#)