

MUKISA BEN EZRA

SOFTWARE ENGINEER | AI, BACKEND, MOBILE, CLOUD & EMBEDDED SYSTEMS

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PROFESSIONAL PROFILE

Software engineer, technical lead, and system architect building practical systems across artificial intelligence, backend platforms, native mobile applications, cloud delivery, data, and connected hardware. Focused on applying AI and robust data management to real operational challenges in Africa's digital race and the global AI revolution. Experienced in leading products from architecture and work planning through implementation, code review, integration, testing, and deployment.

EDUCATION

Bachelor of Science in Software Engineering

Makerere University | 2024 - Present | Expected completion: 2028

PROFESSIONAL EXPERIENCE

ERPNext Developer - Freelance

ERPNext App | Remote, Kampala, Uganda | Jun 2025 - May 2026

- Developed custom business modules with Python, JavaScript, and the Frappe Framework to help small enterprises replace manual processes with structured ERP workflows.
- Designed custom DocTypes and Server Scripts that improved operational accuracy and supported better financial and management decisions.
- Simplified ERP complexity for growing businesses through accessible interfaces, practical automation, and user-focused implementation.

Odoo Developer - Part-time

Odoo Developers | Remote, Kampala, Uganda | Jan 2025 - Dec 2025

- Customized, extended, and implemented Odoo open-source software using Python, XML, JavaScript, and PostgreSQL.
- Built custom modules and integrations with attention to maintainable architecture, scalability, authentication, SMTP, and business adoption.
- Supported end users through ERP configuration and training from both implementation and operational perspectives.

SELECTED ENGINEERING WORK

CropWIT - AI-powered crop diagnosis platform

Role: Technical Lead & System Architect | **Technology:** Computer Vision, FastAPI, Django, Next.js, Neo4j, Android, Arduino, ESP32

- Designed an end-to-end agricultural intelligence workflow connecting field observations, computer vision, knowledge graphs, mobile software, and edge devices.
- Brought diagnosis closer to real field conditions through Android and ESP32 integration and explainable reasoning across symptoms and observations.

Authentication Microservice

Role: Technical Lead & System Architect | Five-person team | **Technology:** Flask, PostgreSQL, Docker, GitHub Actions, Railway CLI

- Created the base architecture, decomposed delivery into documented GitHub issues and milestones, and assigned work across the team.
- Protected the main workflow, reviewed and requested revisions on pull requests, integrated tested contributions on development, and published through CI/CD.

MenuLive - Native Android food discovery

Role: Technical Lead & System Architect | Five-person team | Technology: Kotlin, Jetpack Compose, Hilt, Room, Firebase, Firestore

- Established the Compose architecture and starter project, assigned deliverables, reviewed pull requests, integrated contributions, and tested the completed release.

Clothe SCM - Supply chain management platform

Role: Technical Lead & System Architect | Five-person team | Technology: Laravel, Blade, Tailwind, Spring Boot, Flutterwave, KPIs, Machine Learning

- Defined the system architecture and coordinated deliverables through GitHub and ClickUp across sourcing, production, inventory, sales, and performance workflows.
- Reviewed and integrated team contributions and tested the complete workflow with Flutterwave card and Mobile Money payments.

SYSTEM DOCUMENTATION & REVERSE ENGINEERING

Eferno - Ecommerce system architecture

Tools: User Research, Requirements, ProcessOn, Draw.io, Microservices, Cloud Architecture

- Gathered requirements through interviews, surveys, and questionnaires, then documented layered, service-communication, microservices, and cloud-native architecture views.

CropWIT Knowledge Graph Pipeline - Developer documentation

Tools: OpenAPI 3.1, Mintlify, MDX, MD, Mermaid

- Generated an OpenAPI 3.1 contract for 14 API operations and published protected Mintlify documentation covering setup, system flows, release boundaries, and knowledge-versus-runtime evidence.

Access Hub - API and stakeholder documentation

Tools: OpenAPI, Swagger UI, GitBook, MD, Technical Writing

- Centralized 30 operations across 21 paths in one OpenAPI contract, rendered it through Swagger UI, and published GitBook documentation for engineers, frontend developers, stakeholders, and non-technical leads.
- Used interactive testing to trace an application-model and PostgreSQL-schema mismatch to unapplied migrations; the final documentation integration passed 113 tests.

TECHNICAL CAPABILITIES

AI & Data	Machine learning, computer vision, LLMs, agents, knowledge graphs, data science
Backend	Python, FastAPI, Django, Flask, Java, Spring, PHP, Laravel, Node.js
Web & Product	React, Next.js, JavaScript, TypeScript, Tailwind CSS, product UI/UX
Mobile	Android, Kotlin, Jetpack Compose, Flutter, iOS, Hilt, Room, Firebase
Databases	PostgreSQL, MySQL, MongoDB, SQLite, Neo4j
Cloud & Delivery	AWS, Docker, GitHub Actions, Git, GitHub, Railway CLI
ERP Systems	ERPNext, Frappe Framework, Odoo, custom modules, integrations, user training
Documentation	OpenAPI, Swagger, GitBook, Mintlify, MDX, MD, Mermaid, ProcessOn, Draw.io
Embedded	Arduino, ESP32, sensors, circuits, Autodesk Fusion, field hardware

ADDITIONAL ENGINEERING WORK

Business Validation Server (Spring Boot, Maven) | CropWIT Knowledge Graph (Django, MongoDB, Neo4j/Cypher) | AI agent experiments (Hugging Face, custom tools, planning and reasoning) | Odoo customization (Python, XML, PostgreSQL, 2FA, SMTP) | Tricon static web platform.