

# BILLY GICHUGU MWANGI

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## SUMMARY

Full-Stack Software Engineer and Founder of Hekima Labs — an AI & Automation Studio building intelligent workflow automation and custom AI agents for African businesses. Specialized in Python/FastAPI backend systems, React and React Native frontends, M-Pesa payment integration, and IoT solutions. Shipped 20+ production-grade projects spanning fintech, mobile, desktop, and embedded systems. Currently serving as System Administrator at XRX Technologies while leading product development at Hekima Labs.

## WORK EXPERIENCE

### Founder & Lead Engineer — Hekima Labs

2025 – Present

- Founded an AI & Automation Studio connecting African SMEs with intelligent workflow automation and custom AI agents, reducing manual operational overhead for clients.
- Architected full-stack platforms with FastAPI, React, and Python, integrating LLMs for business process automation and intelligent document processing.
- Developed and deployed AI-powered tools tailored to the East African market, including M-Pesa payment flows and USSD-accessible interfaces for low-connectivity environments.

### System Administrator Intern — XRX Technologies

Aug 2025 – Present

- Administer Active Directory and Group Policy configurations for a domain of 50+ users, enhancing security compliance and access control.
- Monitor server health and performance metrics, proactively identifying potential issues to prevent system interruptions.
- Execute routine system backups and disaster recovery protocols, ensuring data integrity and business continuity.

### IT Engineer Intern — XRX Technologies

Feb 2025 – Aug 2025

- Delivered IT support to 50+ end-users, resolving 95% of issues within SLA timelines, significantly improving staff productivity.
- Performed preventive maintenance on hardware and software, reducing system-wide downtime by 15% and extending asset lifespans.
- Automated software update deployments across all workstations, enhancing security and reducing manual workload by 5 hours per week.

### AI Trainer — Pareto

Jan 2024 – Apr 2024

- Led the fine-tuning process for a large language model (LLM), developing training datasets that increased model accuracy by 12%.
- Evaluated AI-generated outputs against quality benchmarks to ensure system reliability, relevance, and alignment with project goals.

### AI Trainer — Remotask

Jun 2022 – Feb 2024

- Annotated and labeled over 10,000 data points for machine learning models, contributing to a 20% improvement in AI model accuracy.
- Audited and corrected errors in AI output data, significantly improving the reliability and trustworthiness of training datasets.

### Data Entry & Graphic Design Intern — Memon College

Oct 2024 – Dec 2024

- Processed academic data in Excel/Google Sheets with 100% accuracy.
- Designed educational materials with Canva & Illustrator, improving content quality.
- Trained staff on customized software features, enhancing team efficiency.

### Industrial Attachment — Kenya Ports Authority

Jan 2023 – Mar 2023

- Installed and configured SAP clients and Office 365 across multiple departments.
- Set up networks, troubleshoot connectivity issues, and improved system stability.
- Performed secure backups and cloud data migrations.

## PROJECTS

### Hekima Labs FastAPI • React • Python • AI

AI & Automation Studio for African businesses. Full-stack platform connecting SMEs with intelligent workflow automation and custom AI agents. Founder & Lead Engineer.

### DukaPOS Electron • FastAPI • React • SQLite [github.com/BillyMwangiDev/DukaPOS](https://github.com/BillyMwangiDev/DukaPOS)

Offline-first Windows desktop POS for Kenyan retail. M-Pesa STK Push, barcode scanning, loyalty points, KRA eTIMS export, and ESC/POS thermal printing. 60 automated tests on CI.

**Keja** FastAPI • React Native • PostgreSQL • PostGIS [github.com/BillyMwangiDev/Keja](https://github.com/BillyMwangiDev/Keja)

Trust-first property rental app for Nairobi. Zero agent fees, verified landlord badges via National ID + deed check, M-Pesa STK Push deposits, and PostGIS proximity search.

**XAU/USD Trading Terminal** TypeScript • Node.js • Claude AI • WebSocket [github.com/BillyMwangiDev/Trading-dashboard](https://github.com/BillyMwangiDev/Trading-dashboard)

Quant trading terminal for Gold/USD — real-time candlestick charts, 7 server-side indicators (RSI, MACD, Bollinger Bands, ADX, ATR), AI analyst powered by Claude, Kelly Criterion risk calculator, and SQLite trade journal.

**Stock Soko** FastAPI • React Native • Python • M-Pesa [github.com/BillyMwangiDev/Stock-Soko](https://github.com/BillyMwangiDev/Stock-Soko)

Mobile trading platform for the Nairobi Securities Exchange (NSE). Real-time quotes via multi-provider fallback, AI buy/sell/hold signals, M-Pesa deposits/withdrawals, WebSocket price streaming, and a 24-module investing education centre.

**Mifugo (IoT Cattle Platform)** FastAPI • Next.js • MQTT • PostGIS [github.com/BillyMwangiDev/MIFUGO-MANAGEMENT](https://github.com/BillyMwangiDev/MIFUGO-MANAGEMENT)

IoT cattle platform for Kenyan pastoralists. ESP32-S3 smart collars publish GPS + temperature + accelerometer data over MQTT. PostGIS geofencing, theft detection, estrus alerts, and USSD field access via Africa's Talking.

**Nexus Movie** Python • FastAPI • React Native • PostgreSQL [github.com/BillyMwangiDev/nexus-movie-frontend](https://github.com/BillyMwangiDev/nexus-movie-frontend)

Full-stack movie platform with a weighted collaborative-content hybrid recommendation engine. ALX capstone — FastAPI backend, React Native frontend, PostgreSQL graph powering personalised suggestions.

**PriceChekRider** Python • FastAPI • USSD • SMS API [github.com/BillyMwangiDev/Africas-talking\\_hackathon](https://github.com/BillyMwangiDev/Africas-talking_hackathon)

USSD + SMS retail price comparison built for the Africa's Talking Hackathon. Shoppers dial in, set their Nairobi location, and receive an SMS comparing prices across major supermarkets.

## EDUCATION

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**BSc. Information Technology — Technical University of Mombasa**

*Aug 2024*

Relevant Coursework: Database Systems, Software Engineering, Networking, Web Development

## CERTIFICATIONS

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- ALX Pro Dev — Backend Development | 2025
- Veeam Sales & Technical Sales Professional | 2025
- Python Essentials — Cisco Networking Academy | 2024

## TECHNICAL SKILLS

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**Languages:** Python, TypeScript, JavaScript, SQL

**Backend:** FastAPI, Django, Django REST Framework, PostgreSQL, MySQL, SQLite, Redis, REST APIs

**Frontend:** React, Next.js, Tailwind CSS, Framer Motion

**Mobile & Desktop:** React Native, Expo, Electron

**IoT & Protocols:** MQTT, ESP32-S3, PostGIS, GPS/Accelerometer Integration

**AI & Automation:** LLM Integration, Prompt Engineering, Workflow Automation, Data Pipelines, Claude AI

**Payments:** M-Pesa STK Push, Africa's Talking USSD/SMS

**Infrastructure:** Docker, Vercel, GitHub Actions, Linux, CI/CD Pipelines

**Cloud & Admin:** AWS (EC2, S3), Azure, Active Directory, Group Policy, Microsoft Exchange

**Methodologies:** Agile/Scrum, Test-Driven Development, Project Management