

Ephraim Morphusking Makada

Full-Stack & Machine Learning Architect

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PROFESSIONAL SUMMARY

High-impact Software Architect and Machine Learning Engineer specializing in building, scaling, and maintaining AI-augmented web applications for mission-critical sectors. Proven track record of spearheading national-scale digital transformation, successfully taking complex engineering systems from raw concepts to production-ready, secure, and compliant infrastructure. Expert at leveraging Generative AI to accelerate development velocity and building robust, identity-first architectures for government and financial institutions.

CORE COMPETENCIES

- Languages & Frameworks: React, Tailwind CSS, Django, PHP, Python, JavaScript, HTML5/CSS3.
- AI & Machine Learning: GenAI Integration, Agentic AI, Mixture of Experts (MoE), Predictive Modeling, Fraud Detection Pipelines.
- Methodologies & Architecture: Identity-First Security (MFA/Biometrics), Distributed Systems, RESTful APIs, Automated Testing, Scalable Cloud-Native Architecture.

KEY PROJECTS & PROFESSIONAL EXPERIENCE

Integrated National Police Management System (INPMS) – Kenya | Lead Architect

- Spearheading the digital transformation of the Kenya National Police Service (KPS, APS, GSU, DCI) into a fully paperless, secure, and interoperable digital ecosystem.

- Architected "Identity-First" protocols: Implemented mandatory MFA and biometric verification (via Force Number) to ensure strictly authenticated access across all service tiers.

- Built high-integrity approval workflows: Engineered a multi-tier authorization logic (Draft -> OCS Review -> HQ Synchronization) to maintain data precision and chain of custody.

- Enhanced public transparency: Deployed a public-facing layer for automated Digital OB (Occurrence Book) issuance and real-time SMS notifications for citizens.

- Ensured mission-critical security: Enforced AES-256 encryption, immutable anti-tamper logs, and geographically redundant data center architecture to guarantee system stability and auditability.

Spreaders (www.spreaders.shop) | Founder & CEO

- Architected a full-stack social e-commerce, digital learning, and event booking platform from the ground up using React, Tailwind CSS, and Django.

- Engineered "Daria S AI": Developed an integrated intelligence component for automated fraud detection, product verification, and intelligent hyper-personalized recommendation pipelines.

- Award Recognition: Secured 1st Runners Up in the 2024 FOYA Africa Awards (E-commerce Category) with operational footprints in Kenya, Uganda, and the DRC.

M-KOPA Kenya | Full-Stack AI Engineer Consultant

- Engineered and optimized core full-stack web application modules, driving system maintainability and scalability across cross-functional platforms.
 - Integrated Generative AI into development workflows, accelerating prototyping and deployment speeds by ~40%.
 - Established robust automated testing protocols to protect critical financial tech features from regressions during high-velocity deployments.
- **Equity Bank Kenya** | Lead AI-Augmented Developer**
- Led a financial engineering team focused on building high-impact features using AI-assisted coding methodologies to ensure production-grade code quality.
 - Designed and maintained robust, secure API integrations compliant with stringent banking standards.
 - Mentored teams on clean code practices, blocking technical debt at the PR review level to prioritize system maintainability.
- **Spreaders Ride & Keshir POS** | Lead Architect**
- Designed secure, scalable backend routing for DRC government logistics ensuring integrity despite infrastructure instability.
 - Architected data pipelines for Keshir POS to support cross-border currency and sales analytics for the Kenya-Indonesia coffee trade corridor.

EDUCATION & CREDENTIALS

- B.S. in Informatics and Artificial Intelligence | President University
- Studied in Applied Physics and Computer Science | Multimedia University
- Awards: 1st Runners Up, FOYA Africa Awards 2024 – E-commerce Category