Felix Makinda

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PROFESSIONAL SUMMARY

AI Engineer and Software Engineer with experience building production AI systems, full-stack web applications, and cloud-native infrastructure. Specialises in multi-agent LLM orchestration, RAG pipelines, and agentic AI deployment on platforms including IBM watsonx.ai, LangChain, Amazon Bedrock AgentCore, and AutoGen. Strong DevOps background across GCP, AWS, Azure, Oracle, and IBM Cloud, with a track record of shipping live products serving thousands of users across the region.

EDUCATION

Andela | **Nairobi, Remote**

AI Engineering | ***Grade:*** *Distinction* **May 2026**

Courses: AI Engineer Core Track (LLM Engineering, RAG, QLoRA, Agents); AI Leader (Generative AI & Agentic AI for Leaders & Founders); AI Engineer Agentic Track: The Complete Agent & MCP Course; AI Engineer Production Track: Deploy LLMs & Agents at Scale (Terraform, Azure, GCP, AWS)

Moringa School | **Nairobi, Kenya**

Cert. DevOps Engineering | ***Grade:*** *Distinction* **June 2024**

Courses: Linux Administration, Containerization, Automation, Infrastructure as Code, Automation Configuration and Instrumentation, Cloud Computing (AWS, GCP, Azure), Virtualization, Orchestration.

Jomo Kenyatta University of Agriculture and Technology | **Nairobi, Kenya**

B.Sc. in Computer Science | ***Grade:*** *2.2* **Nov 2016**

Courses: Computer Organization, Data Structures, Foundations of Programming, Algorithms & Analysis, Compiler Construction and Automata Theory, Database Systems, Artificial Intelligence, Cryptography.

TECHNICAL SKILLS

Programming Languages: Java, Python, SQL, TypeScript, JavaScript, C, C#, C++, PHP, Go.
AI/ML: RAG, Fine-Tuning Models, QLoRA, LangChain, LangGraph, LangSmith, AI Model Evaluation, NLP, PyTorch, TensorFlow, Scikit-Learn, Pandas, Numpy, Amazon Bedrock, Amazon SageMaker, Google Vertex AI, Azure AI, Crew AI, OpenAI SDK, AutoGen, Google Gen AI SDK, IBM Bob 2.0, Codex, Claude Code, IBM watsonx.ai, GitHub Copilot.
Full-Stack & Backend: React, Next, Node Js, REST APIs, GraphQL, Django, FastAPI, Spring Boot.
DevOps & Infrastructure: Jenkins, Kubernetes, Docker, IBM Code Engine, Ansible, Prometheus, Grafana, Kibana, Pulumi, OpenTofu, Terraform, GitHub Actions, CI/CD.
Cloud: Google Cloud Platform (GCP), Amazon Web Services (AWS), Microsoft Azure, IBM Cloud, Oracle Cloud.
Observability: Prometheus, Grafana, Kibana, LangSmith, Amazon CloudWatch
Databases: PostgreSQL, MongoDB, MySQL, MSSQL, IBM DB2, Oracle DB, Supabase, Redis.
Tooling: Figma, Git, Jira

FEATURED PROJECTS

Okione | **DevSecOps Copilot** (https://okione-devsecops.vercel.app/) **February 2026**

- Built a 7-stage multi-agent K8s security pipeline (Code Analyzer → CVE Scanner → Manifest Generator → Schema Validator → Security Auditor → Quality Gate → Report Writer) using IBM Bob 2.0 and IBM watsonx.ai (Granite 4); transforms raw application source code into CIS Benchmark - hardened K8s manifests.
- Engineered a 5-layer hallucination prevention system: input validation + prompt injection detection, Pydantic schema enforcement, three deterministic scanners (Trivy CVE, kubeconform strict, regex secret detection), CIS citation grounding, and an independent LLM-as-Judge evaluator subagent verifying all prior outputs before delivery.
- Authored 16 deterministic security finding rules (SEC-001-016) across Dockerfile and K8s manifest analysis, grounded in CIS Kubernetes Benchmark §4-5; backed by 25+ unit tests with full pass rate.

- Deployed FastAPI backend on IBM Code Engine via IBM Container Registry; IBM Bob 2.0 used as both orchestration engine and coding agent throughout development.

Hesabu Lab | Free 3D Game for Children (https://hesabu-lab.pages.dev/) **October 2026**

- Designed and built a free, open-source browser game that teaches place value to children aged 6 to 9 (Grades 2 to 5). Ten marbles physically seal into a crate, so carrying, borrowing, multiplication and remainders become something children can see instead of rules they memorise.
- Built four games, one per operation, in which the written sum updates at the exact moment of each physical action. Wrong answers are diagnosed by misconception (a forgotten carry, subtracting the smaller digit from the larger, swapping the share and remainder) and answered with a targeted hint rather than a red cross.
- Built for safety and access: It runs entirely on the parent's device, with no accounts, data collection, tracking or ads, on ordinary phones, tablets and school laptops. It's released under AGPL-3.0 to schools and developers can use the code and adapt it.
- Engineered with TypeScript, Three.js and Rapier physics (Rust compiled to WebAssembly), Blender models generated from Python scripts, and sound synthesised with Web Audio API. The maths engine is unit-tested, automated headless-browser play-tests cover every game, and GitHub Actions deploys to Cloudflare Pages.
- First built for my son, who grasped carrying, borrowing, and remainders within a few hours. Teachers at his school have since adopted it for holiday and the coming term, helping about 170 children, with 30 parents confirming use.

Egiaito | Ekegusii Language Corpus & NLP Dataset (gusii.org) **2022 - Present**

- Built a production community platform documenting Ekegusii, an endangered African language of 5+ million speakers in Kenya and Tanzania, cataloguing 10,000+ words, 300+ proverbs, and a bilingual Bible parallel corpus structured for NLP training; built with Next.js 16, Prisma/PostgreSQL, Clerk, Cloudflare R2, and deployed on Vercel.
- Engineered on Mozilla Common Voice - style audio recording and moderation pipeline storing speech in Cloudflare R2, with speaker profiles capturing dialect, region, and age, and seven tone-pattern annotations, building a structured dataset for ASR and TTS model development.
- Building toward a grapheme-to-phoneme (G2P) lexicon from existing IPA/tone data, TTS fine-tuning on a multi-lingual Bantu-aware base model (Coqui/MMS), ASR fine-tuning on Whisper, and English-to-Ekegusii machine translation seeded by the Bible parallel corpus following Masakhane's participatory MT approach.
- Designed a schema to extend across the Mara Bantu language family (Kikuria, Ngoreme, Zanaki, Ikoma, Simbiti, Suba), with a three-layer test suite (Vitest unit/integration against a real Postgres, Playwright E2E) and GitHub Actions CI/CD.

Orbit | Course Matching & Career Guidance Platform **February 2026**

- Built a live multi-agent AI platform (orbit.co.ke) that guides Kenyan KCSE students through university programme matching and career counselling; served 2,000+ students in March 2026 alone.
- Designed a Google ADK orchestrator with 4 specialised sub-agents (grade analysis, KUCCPS matching, career counselling, study-abroad search) deployed on Google Cloud Run.
- Integrated PesaPal, MPESA payment tiers, Clerk auth, and Supabase/Prisma, deployed on Vercel as a full production SaaS stack; and an intelligent RAG-based chatbot for real-time query resolution.

PROFESSIONAL EXPERIENCE

AI, Software Engineering Fellow | Andela | Talent Network - Remote **Feb 2026 - Present**

- Built and deployed multi-agent AI applications using RAG, LangChain, LangGraph, CrewAI, Google Vertex AI, Google Gen AI SDK, Amazon Sagemaker, Amazon Bedrock, AutoGen, OpenAI SDK, MCP workflows, and cloud-native infrastructure.
- Developed expertise in LLM engineering, agent orchestration, prompt engineering, and scalable AI system architecture.
- Worked on production-oriented AI projects involving AWS, Azure, Terraform, CI/CD. vector databases, and autonomous workflows.

- Leveraged AI-assisted development environments including Cursor and GitHub Copilot to improve engineering velocity, streamline software delivery, code evaluation, and support rapid iteration of enterprise-grade AI applications.
- Collaborated with engineers across multiple countries in fast-paced, project-driven AI development environments.

Software Testing Analyst - AI Code Evaluation | **Alignerr** | **Contract - Remote** **Jan 2026 - May 2026**

- Evaluated AI-generated software solutions across multiple programming languages, identifying bugs, logical inconsistencies, and edge cases in model outputs.
- Analysed code quality, readability, and structural efficiency, providing structured feedback that fed directly into model training improvement.
- Documented evaluation results to support AI fine-tuning pipelines and model performance benchmarks.

Tech Lead & Full-Stack Engineer | **Univar Logistics Ltd.** | **Nairobi** **Dec 2024 - Dec 2025**

- Own end-to-end technology strategy, software architecture, and cloud infrastructure for a growing East African logistics startup.
- Designed and built the customer-facing website and internal operations platform from scratch using TypeScript, Python, and the MERN stack.
- Engineered CI/CD pipelines, a custom CMS, and cloud deployment, maintaining high availability across all production services.
- Implemented AI-driven automation to streamline dispatch, tracking, and operations workflows, reducing manual overhead.

AI Program Coordinator | **Scale AI** | **Contract - Remote** **2022 - 2024**

- Managed quality assurance for AI/ML training data pipelines across multiple concurrent projects, directly influencing language model training at scale for frontier models.
- Onboarded and mentored AI trainers on annotation standards, evaluation methodology, and data quality protocols.
- Conducted technical evaluations of model outputs and dataset integrity using Python, feeding structured findings back into training pipelines.
- Collaborated cross-functionally with project leads to prioritise data workflows, monitor quality KPIs, and deliver to client standards.

Digital Skills Mentor & Trainer | **Ajira Digital Program** | **Hybrid** **2017 - 2023**

- Trained and mentored 1,300+ students and recent graduates across multiple Ajira Digital Centres, preparing them for paid digital and online work, including learners with no prior tech background.
- Delivered practical training in computer programming (including Java and Python), freelancing and online work platforms, academic and technical writing, AI data annotation, and other entry-level digital skills.
- Coached learners through building profiles, winning first contracts, and meeting client quality standards, turning training into income. About 450 directly secured roles in training frontier models for tech giants.

Certifications.

Linux Foundation / CNCF & Andela (2026)

- Kubernetes and Cloud Native Associate (LFS250).
- Introduction to Linux (LFS101)
- Introduction to Kubernetes (LFS158)

Andela (2026)

- AI Engineer Core Track: LLM Engineering, RAG, QLoRA, Agents
- AI Leader: Generative AI & Agentic AI for Leaders and Founders
- AI Engineer Agentic Track: The Complete Agent & MCP Course
- AI Engineer Production Track: Deploy LLMs & Agents at Scale - Terraform, Azure, GCP, AWS

References.

Available on request.