

Katlego Mokoto

AI & ML Engineer / Full-Stack Developer

065 842 4274 | katlego.mokoto.km@gmail.com | mensmercatus.online

Johannesburg, South Africa | Open to Johannesburg, Pretoria, Cape Town, Durban, and remote teams | Available

LinkedIn: linkedin.com/in/katlego-mokoto1759

SUMMARY

I build agentic workflows and full-stack systems a teammate can review, deploy, and trust: career pipelines, multimodal assistants, and research desks, with a human decision on every irreversible step. Targeting AI engineering, full-stack .NET, and product engineering roles.

SELECTED SYSTEMS

JobNet - career pipeline

- Daily scrape at 20:00 SAST. A sentence embedding ranks each posting against the case studies and keeps one role per company.
- A letter is sent only when the posting prints an employer address. A 15:00 SAST mail reports the previous run.

Mercatus Assist and THINK - multimodal assistant

- ASP.NET Core 8 minimal API (C#) calls Gemini through an OpenAI-compatible client. Exponential backoff on HTTP 429 and 5xx.
- systemd on Ubuntu, nginx, Cloudflare. API key stays on the VPS. Per-IP caps. Labelled demo fallback when unhealthy.
- THINK front end: React 19, Vite, TypeScript, live-voice WebSocket relay.

Forex Mercatus Codex - paper research desk

- Python and Highcharts desk, about 87 MB, hosted on a VPS (port 8790) over HTTPS.
- Pandas, NumPy, and yfinance feed the paper models. Session cap 24, 2-hour idle TTL, quotes about every 60 seconds. Public health JSON. No orders.

SoundX - browser studio

- TypeScript and Web Audio. Load demo, play, shape, generate. Audio stays in the browser.
- AI Producer proposes a DSP chain. Generate can estimate tempo from onsets in the local buffer. The person applies it. No sign-in.

TECHNICAL STACK

Python: Forex Mercatus Codex engine, FastAPI, Pandas, NumPy, yfinance, paper-bot and session models.

Languages: Python, TypeScript, C#, JavaScript, SQL, Bash.

Frontend: React 19, Next.js, Vite, TypeScript, Tailwind, Flutter, Web Audio studio UI.

AI: LLM orchestration, RAG, LangChain, ChromaDB, Ollama, Gemini, Agent Zero, tool-using agents with human approval.

Machine learning: Pandas, NumPy, yfinance, OR-Tools, regime and paper-research models, DSP and stem analysis.

Backend: ASP.NET Core 8, FastAPI, Node.js, WebSockets, Redis.

Data: PostgreSQL, Pandas, NumPy, yfinance, OR-Tools.

Infra: Docker, Linux, systemd, nginx, Cloudflare, Ubuntu VPS, Nebius.

EXPERIENCE

Project Antigravity - AI systems architect and founder - Mar 2026 to present

- Local-first agent tooling on Apple Silicon M4 with Ollama, Agent Zero, and Cursor.
- Nebius for training and deploy experiments.

Mens Mercatus - full-stack, .NET, and AI systems - ongoing

- Mercatus Assist, THINK, JobNet, Forex Mercatus Codex, and SoundX: Python, React 19, ASP.NET Core 8, and local audio DSP.
- Human approval on send, orders, and studio changes. API keys stay on the VPS.

Earlier systems work - operations and optimization

- Fleet and logistics optimization with OR-Tools.
- Diesel and mechanical operations. Systems thinking under physical constraints.

EDUCATION AND CERTIFICATIONS

Self-taught.

LINKS

Portfolio case studies, ATS copy of this CV, and contact: [this site](#).

Live demos remain on [mensmercatus.online](#).

A public GitHub profile is not listed. Repository walkthroughs are available on request.