

Katlego Mokoto

AI & ML Engineer / Full-Stack Developer

Everything that brings **mensmercatus.online** to life: the hosting, the apps, the AI and machine-learning models, the motion and UX systems, the privacy rules, the measured speed, and the release and test tooling behind every change.

● mensmercatus.online LIVE

● All 4 live services up · 17:50 SAST

● Assist LIVE · gemini-2.5-flash

● DEMO · draft queue

Facts only · every figure sourced

https://mensmercatus.online/

Mens Mercatus

WorkCase studiesResumeLabsContact

View CVLinkedInContact me

JOHANNESBURG, SOUTH AFRICA · SAST (UTC+2)

Katlego Mokoto

AI & ML Engineer / Full-Stack Developer

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.

AI & ML Engineer

Full-stack developer

AI systems architect

Product engineer

AVAILABILITY

Available

ENGAGEMENT

On-site, hybrid, or remote

Johannesburg, Pretoria, Cape Town, Durban, and remote teams

View selected work

View CV

LinkedIn

Contact

065 842 4274

Request a code walkthrough

AVAILABLE

Mens Mercatus

⏸

Nasdaq 100 30,023.50 ▲ 1.17% 17:41 SAST

Dow 52,648.22 ▲ 0.29% 17:51 SAST

DAX 25,645.04 ▲ 1.35% 17:30 SAST

Gold 4,133.30 ▲ 0.40% 17:51 SAST

draft-only, nothing auto-applied

NEW AI Tooling Engineer (remote)

Jobgether (partner company)

South Africa (remote)

NEW Senior Software

Tailor this page

ECTED SYSTEMS · 2026

Live homepage, captured 21 Oct 2026, 17:45 SAST (1440 × 900). Hero glass, dot-field background, live quote + JobNet marquee.

4/4

live API services healthy

17:50 SAST

48

URLs in the live sitemap

sitemap.xml

12

reversible releases on 21 Oct

each with a rollback

0

console errors on 13 key live pages

live-console

CONTENTS

What's *inside*

Fifteen sections. Items that exist only in preview carry a red dashed chip:

● In preview, not live yet

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01 · OVERVIEW

A portfolio that *runs*, not one that describes.

mensmercatus.online is Katlego Mokoto’s working portfolio. Instead of screenshots of past work, visitors open the real systems: a music studio, a job-matching pipeline, a paper-trading research desk and Gemini-backed assistants, all served from one domain.

“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.” – live hero copy

48

URLs in the live sitemap
 sitemap.xml · checked
 21 Oct, 17:50 SAST

4/4

live API services healthy
 /health endpoints ·
 17:50 SAST

12

backed-up releases on 21 Oct
 B → E3 · each with a one-command rollback

0

md5 mismatches after any release
 deploy.py verify step

23 MB

self-hosted MiniLM model
 loaded only when used

101/101

AI-layer browser checks
 verify3 · 21 Oct, 03:58 SAST

1020 ms

home LCP, throttled mobile
 CPU 4×, 150 ms RTT, median of 5

0

layout shift (CLS), home + /plan/
 same throttled runs

PRINCIPLE 01

Human gate on every irreversible step

JobNet never applies, Assist never invents balances, nothing sends email by itself. Drafts only; a person presses Send.

PRINCIPLE 02

On-device first

Search, matching, OCR, pitch detection and audio ML run in the visitor’s browser from self-hosted files. Model keys stay on the server.

PRINCIPLE 03

Measured, not claimed

Every public number has a source and a date in data/proof.json; the build fails if one is missing. DEMO surfaces are labelled DEMO.

02 · ARCHITECTURE

Two hosts, one *edge*

The public site is static and fast; anything that needs a secret, a model or live data sits behind **api.mensmercatus.online**. Cloudflare fronts both.



Dashed boxes are off-site processes. Green dots: services whose /health returned OK at 17:50 SAST, 21 Oct 2026.

02 · ARCHITECTURE · COMPONENTS

What each *piece* does

COMPONENT	ROLE (VERIFIED FROM CODE AND LIVE /HEALTH)
Cloudflare	DNS, TLS and CDN for both hostnames. HTML and JSON are served dynamic (not cached); JS/CSS/media use versioned URLs (?v=) so a release never needs a purge.
DreamHost shared hosting	The static site: a hand-patched Next.js static export (HTML + RSC payloads), static app builds, media, self-hosted models and fonts, .htaccess security headers and a small PHP proxy for Assist.
API host (VPS) · nginx	Reverse proxy for the live services. CORS answers only https://mensmercatus.online and www; preflight 204, GET/HEAD/OPTIONS only on read endpoints; per-route rate limits.
Mercatus Cartel Robot	ASP.NET Core 8 minimal API in C#. Calls Gemini through an OpenAI-compatible chat-completions client, so the provider is a config change. Endpoints: /health, /api/mercatus-cartel/assist, /chat.
FX Mercatus Codex API	Paper-only research API: 5 symbols (SPX, NQ, BTC, XAU, EURUSD), 4 timeframes, feeds from Yahoo, Binance, CFTC, ForexFactory plus a synthetic feed. Reports paper_only: true.
JobNet demo API	Read-only: serves sanitised shortlist snapshots. Reports auto_apply: false, auto_send_email: false, and that it never scrapes on this host.
THINK proxy	Node + Express with @google/genai, express-rate-limit and a WebSocket relay for live voice. Holds the model key.
SoundX relay	WebSocket rooms (\$XA + 6 chars) that pair a phone as pads or a microphone with the browser studio.

Security headers

CONTROL	HOW IT IS APPLIED
Content-Security-Policy	default-src 'self'; WebAssembly allowed via 'wasm-unsafe-eval' (not JS eval)
Third-party scripts	fonts, icons and three.js self-hosted; Font Awesome 6.4.0 + three r128 vendored for God Mode instead of loosening CSP
Microphone	allowed per-app (SoundX AI, AI Lab) via scoped .htaccess; requested only on click

400ms

Cartel Robot /health

median of 3 GETs · 04:10 SAST

202 / 169ms

Forex / JobNet /health

median of 3 GETs · 04:10 SAST

160ms

THINK /health

median of 3 GETs · 04:10 SAST

SoundX*AI*

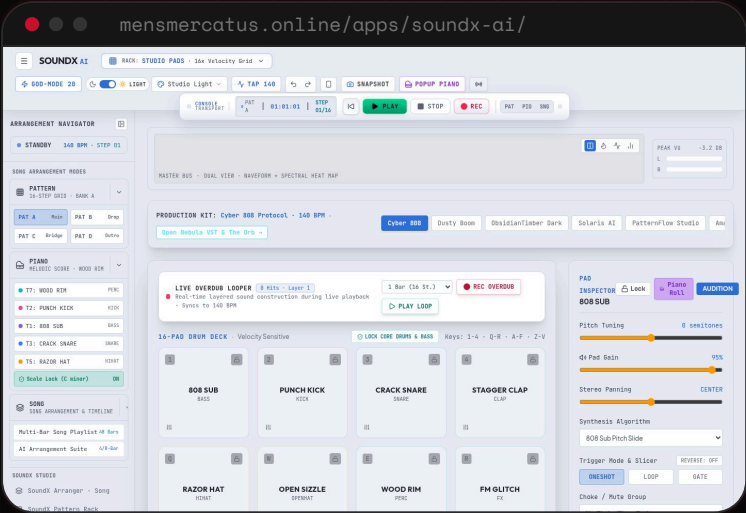
LIVE

React 19 · Vite · TypeScript

Web Audio

three.js · d3 · motion

Offline · no API key



Live, 21 Oct 2026 · default Studio Light theme, 16-pad deck and arrangement navigator.

One browser studio that merges **Sound Deck AI** (pads, sequencer, plugin rack, on-device AI, 22 themes) with the **SoundX studio** (Song / Pattern / Piano views, God Mode hub, AI Producer).

SoundX Studio was folded in on 21 Oct (release E2): old Studio URLs redirect with room codes kept.

- **God Mode hub** · 60 cards and an **AI Producer** chat ("add drums", "bpm 132")
- Pattern picker, Ghost layer (rolling 30 s buffer), Night Shift, version snapshots and Vault
- **Pair Phone**: QR code → phone becomes pads or a mic over the relay
- Four-step demo walkthrough, 11 accent presets (AA contrast tested 1210/1210)
- Static build (3.5 MB of assets before the merge) runs with no Node server; a loading splash took mobile LCP from 4.17 s to 0.92 s (gzip-emulated local run)

The on-device "AI+ Top 20" — all built, all offline

ML

Timbre Search

32-D embedding (24 log-mel bands + spectral features), cosine similarity over 78 bundled sounds.

ML

Smart Sample Tagger

k-NN instrument class + YIN pitch. Leave-one-out accuracy 81% (35/43).

DSP

Clash Detector → EQ

15-band energy masking per track, complementary EQ cuts by role priority.

DSP

Mix QA

Clipping, true peak, phase, mono loss, loudness → 0–100 score with one-click fixes.

MUSIC

Genre Chord Engine

11 styles; key-change assistant ranks 7 modulations with pivot chords.

MUSIC

Style Transfer (-ify)

Amapiano, Gqom, Afro-tech, Kwaito via Jaccard-nearest genre templates.

LIVE

Live Pitch → Instrument

Mic → YIN every ~16 ms. Audio never leaves the device.

MEMORY

Producer Memory

Recency-weighted (21-day half-life), local only, can be switched off or cleared.

Source: soundx-ai repo (FEATURES-TOP20-AI-ML.md, README). Tests: `npm test` (unit + WCAG contrast for 22 themes); headless e2e 78/79 vs live – the one fail is the LAN phone remote, desktop-only by design.

04 · APP · /APPS/JOBNET/ AND /APPS/MERCATUS-CAREERS/

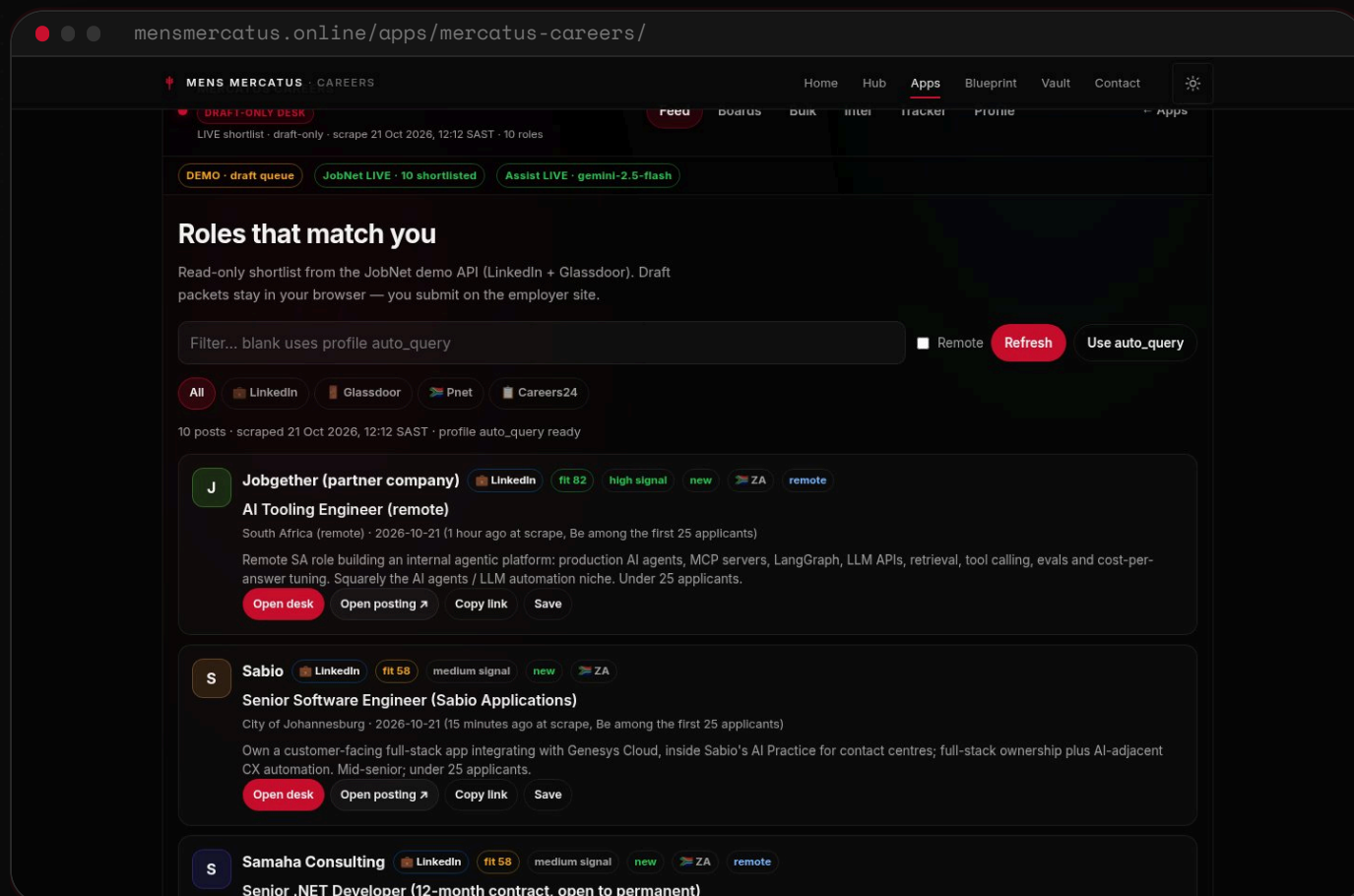
JobNet AI & the *Careers* desk

● JobNet LIVE · 10 shortlisted

● DEMO · draft queue

● Assist LIVE · gemini-2.5-flash

Draft-only · never auto-applies



Mercatus Careers, live 21 Oct 2026: status chips read the live JobNet run (scraped 12:12 SAST, 10 roles) and the Assist model from /health.

JobNet AI — all ML runs in the browser

- **Explainable matching:** BM25 plus MiniLM sentence embeddings (self-hosted, via transformers.js); evidence quoted for every strong or partial match, honest gaps flagged
- **Skill-gap radar,** reply triage and freelance-lead scoring
- **Outcome model:** ships coefficients only (n = 25, leave-one-out AUC 0.49) and says so — labelled “no better than guessing”
- Falls back to BM25 and system fonts automatically if the model is unavailable

The pipeline behind it

- Scheduled scrape at **12:00 SAST** (LinkedIn, Glassdoor) and tailoring at **03:00 SAST**, run by agent routines off the API host
- Latest run 21 Oct: 100 LinkedIn cards reviewed, 18 job pages read, 10 shortlisted (1 high, 4 medium, 5 low)
- Application drafts go to Gmail as **drafts only**; a person reviews and presses Send
- Careers desk tabs: Feed · Boards · Bulk · Intel · Tracker · Profile

Sources: live /jobnet/api/health (17:50 SAST), jobnet-ai repo README and ml.js, verify3 (JobNet AI 39/39 under emulated live headers).

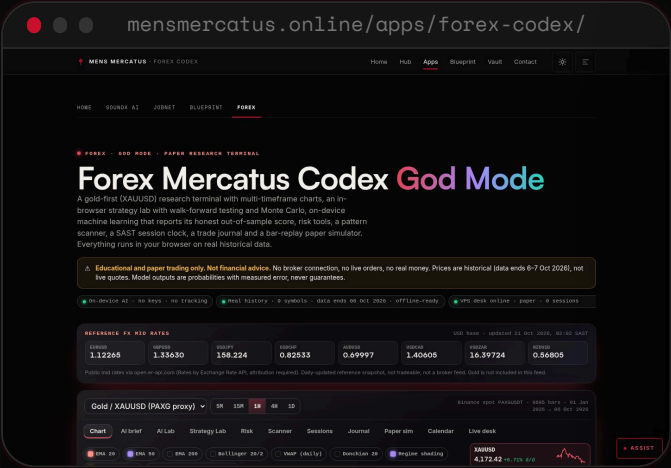
Forex Codex*God Mode*

LIVE

Paper only · not advice

TradingView Lightweight Charts

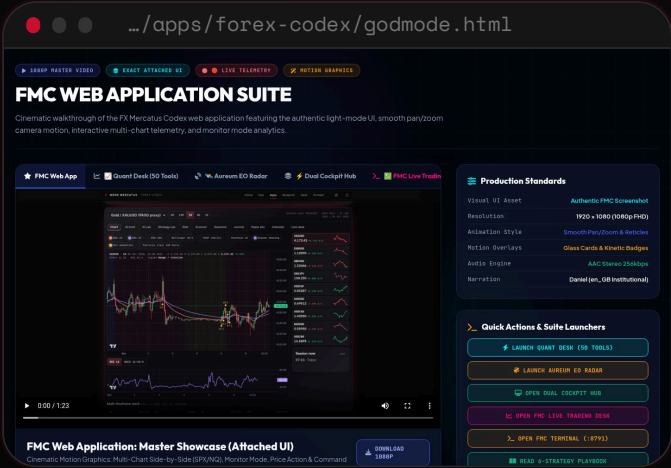
three.js r128 (self-hosted)



Live terminal view, 21 Oct 2026.

A research terminal for the FX Mercatus Codex (FMC) desk. It reads the live paper-only API: quotes for SPX, NQ, BTC, XAU and EURUSD across 1m/5m/15m/1h, plus this week’s ForexFactory calendar (86 events on 21 Oct, 04:10 SAST).

The API states in its own health response that it is **not a broker, not an exchange and not investment advice**; paper sessions are session-scoped and expire.



God Mode showcase with the clean poster frame (release D4).

Hardening shipped on 21 Oct

- B2–B4**: quote grid pre-filled (mobile layout shift 0.30 → passes); calendar served with a strict CORS block
- D3**: icons and three.js self-hosted rather than loosening the CSP; a desk-only websocket now runs only on localhost — 0 console errors, 23/23 icons render
- D4**: clean 1920×1080 app poster, no autoplay

5

symbols: SPX, NQ, BTC, XAU, EURUSD
/forex/api/health

4

timeframes: 1m, 5m, 15m, 1h
/forex/api/health

1040_{ms}

desktop LCP, live median of 3 cold loads · 03:20 SAST

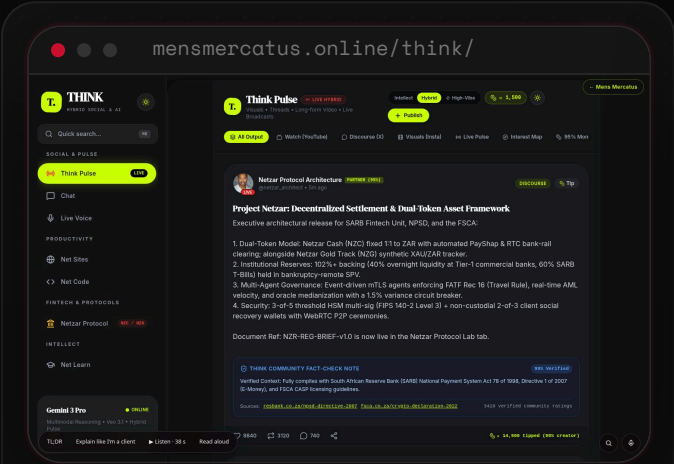
14_{/14}

verify-godmode vs live
0 console errors at 1440 and 390

06 · SHOWCASES

Five more systems, *one card each*

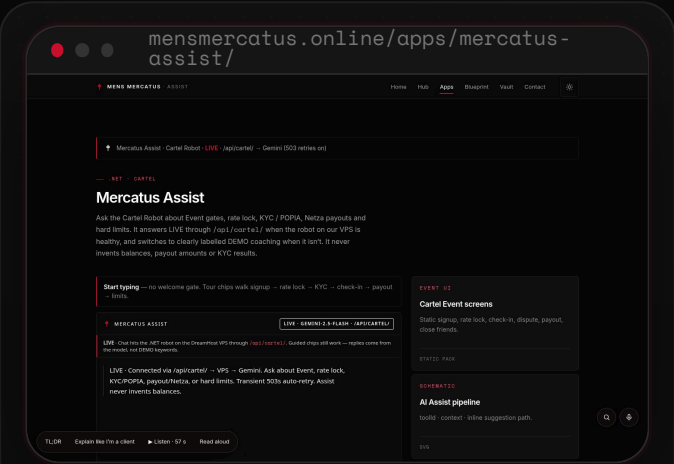
Each showcase has an apps card, a story circle, a reel tile, search entries and a case-study bar whose TL;DR and “client view” sentences are quoted **verbatim** from the page (the build re-checks every quote) with a 45–60 s narrated walkthrough.



THINK

- LIVE
- gemini-2.5-flash
- React 19

- Multimodal workspace: chat, image, live voice, Net Sites, Net Code, Net Learn
- Server-side proxy + live-voice WebSocket relay; the model key stays on the server
- Per-IP caps on live voice and image — the cap is the control



Mercatus Assist

- Assist LIVE
- ASP.NET Core 8 · C#

- DEMO fallback
- Ask the Cartel Robot about event gates, rate lock, KYC/POPIA, payouts and hard limits
- Gemini 503/429 → server + browser exponential backoff (up to 4 attempts), then a labelled DEMO answer
- Never invents balances, payout amounts or KYC results

400ms

Cartel Robot /health (Assist)

median of 3 · 04:10 SAST

160ms

THINK proxy /health

median of 3 · 04:10 SAST

936ms

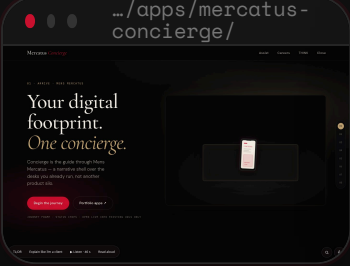
Assist app desktop LCP, live

median of 3 cold loads

2

Gemini fallback models for Assist

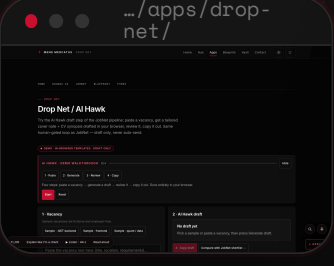
live /health · llmFallbackModels



Mercatus Concierge

● Local demo

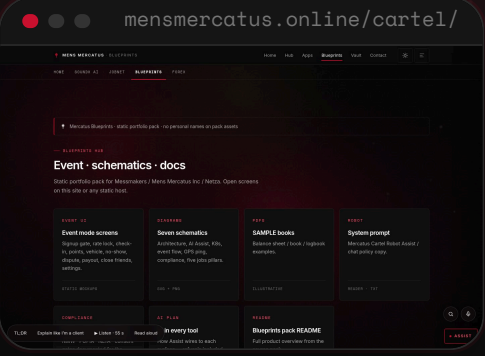
- A guide through Mens Mercatus — a narrative shell over the desks, not another silo
- Brief builder, First Look, honest score out of 100
- No payments, no sign-in, no AI calls: mocks stay mocks



Drop Net / AI Hawk

● Local templates

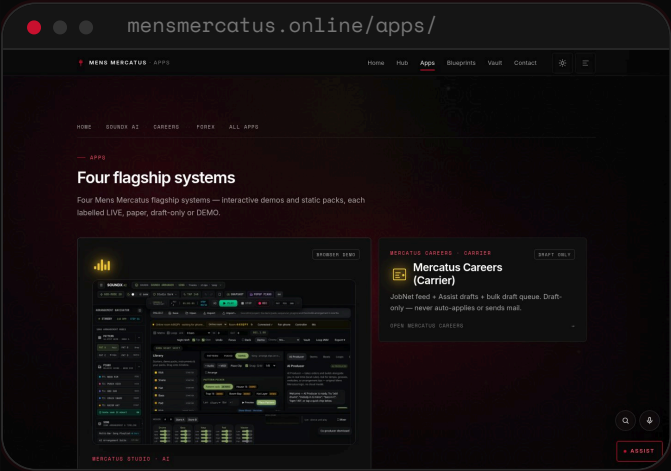
- The draft step of JobNet: paste a vacancy → tailored cover note + CV synopsis
- No LLM call, no scrape, nothing stored or sent
- Same human-gated loop: draft only



The Cartel · Blueprints

Static pack

- Event screens: signup gate, rate lock, check-in, payout, dispute...
- Schematics: architecture, AI Assist, K8s, event flow, GPS ping
- NMW · POPIA · NLTA consent gates documented



The live /apps/ index, 21 Oct 2026.

Shared across every showcase

- Fresh thumbnails, story circles and reel tiles on the home page
- Case-study bar: TL;DR, “Explain like I’m a client”, inline narrator with captions
- verify3: all five pages pass at 1440 and 390 px with no script errors and no horizontal overflow
- Concierge pitch video re-encoded 23.2 → 13.4 MB (x264 CRF 23, SSIM 0.995) with a poster and lazy preload

Showcase copy is quoted, never paraphrased into a claim: if a sentence is not on the source page, the build fails.

1100 ms

Concierge desktop LCP, live
median of 3 cold loads · 03:20 SAST

56

files in the live Concierge app
live mirror count · 04:10 SAST

17

files in the live Assist app
live mirror count · 04:10 SAST

Every model, and *where it runs*

ON-DEVICE · IN THE VISITOR'S BROWSER

all-MiniLM-L6-v2 (q8 ONNX)
sentence embeddings: palette, JobNet, AI Lab

transformers.js + ONNX Runtime Web
WebAssembly, self-hosted, lazy-loaded

BM25 + logistic models
keyword fallback · JobNet outcome model

tesseract.js OCR
self-hosted worker + English model

Web Audio DSP models
YIN pitch · 32-D timbre embedding · k-NN

Web Speech API
voice navigation, typed fallback

On-device intent parser
SoundX AI Producer without the network

SERVER-SIDE · KEY NEVER IN THE CLIENT

Mercatus Assist → Cartel Robot
gemini-2.5-flash · 2 lite fallbacks · backoff

THINK proxy
chat gemini-2.5-flash · image · video · live voice

SoundX AI desktop build
optional Gemini routes, key in the server's env

Caps + DEMO fallback
labelled DEMO answer if the model is down

PRE-RENDERED AT BUILD TIME

edge-tts neural narration
en-ZA Luke & Leah voices → MP3 + WebVTT

Proof, search & SEO generators
proof.json, knowledge base, sitemap, JSON-LD

MODEL / LIBRARY	RUNS ON	USED FOR	NOTES
gemini-2.5-flash	Google (server)	Mercatus Assist via the Cartel Robot; THINK chat	fallbacks: gemini-2.5-flash-lite, gemini-3.1-flash-lite (Assist)
Gemini image / video / live	Google (server)	THINK multimodal paths	models as reported by THINK /health; capped per IP
all-MiniLM-L6-v2 (q8)	Browser · ONNX	Ctrl/⌘K semantic search, JobNet matching, AI Lab recruiter match	23 MB, self-hosted, lazy; Apache-2.0
transformers.js + ORT Web	Browser · WASM	Runs MiniLM; needs only wasm-unsafe-eval	Apache-2.0 / MIT
BM25 + logistic regression	Browser · JS	JobNet keyword fallback, outcome model	coefficients only, AUC reported honestly
tesseract.js	Browser · WASM	AI Lab OCR on example till slip	works with all non-local hosts blocked
YIN pitch, timbre k-NN, DSP	Browser · Web Audio	SoundX AI+ Top 20, AI Lab playground	hum → notes/key, tap → tempo
Web Speech API	Browser	Voice navigation (5 commands)	typed fallback
edge-tts neural voices	Build time	Narrated case studies, en-ZA Luke & Leah	MP3 + WebVTT captions

Server model names read from the live /health endpoints at 17:50 SAST. On-device list from the site's js/ai, the JobNet ml.js and the SoundX source.

08 · AI LAB & ADAPTIVE SITE · /AI/

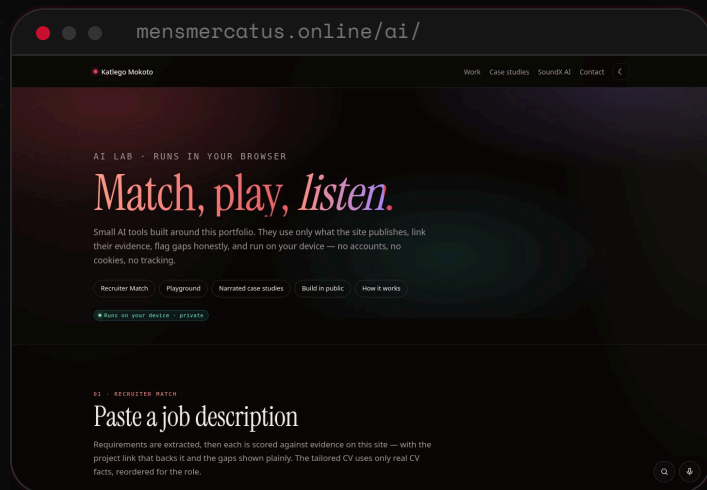
An AI layer that *stays light*

● LIVE

6.1 KB gz boot

11 lazy modules ≈ 43 KB gz

No cookies · no third-party requests



The live AI Lab, 21 Oct 2026.

- **Ctrl/⌘K palette:** instant + semantic/hybrid search; shows result links only, no chat answers
- **Voice navigation:** “open SoundX AI”, “go to contact”, “switch to light mode”, “show me music work”
- **Adaptive homepage:** ?for=recruiter, UTM, referrer or two in-session music clicks reorder sections — stored in sessionStorage only, and in-session clicks only *suggest*
- **Recruiter Match:** paste a job ad → score with evidence on every row, honest gaps (e.g. CI/CD, Azure), and a one-page tailored CV that prints to A4 with no inflated claims
- **Playground:** hum → notes and key, tap tempo → beat, OCR on an EXAMPLE slip, agent visualiser that stops at a human gate for “email”
- **Narrator:** 6 flagship + 4 showcase walkthroughs, 35–60 s, captions highlight as they play
- **Build-in-public feed:** every entry traces to a real commit, change log or report

0

model, OCR or embedding bytes
fetched on page load

verify3 · lazy by design

23 MB

MiniLM, fetched only
when search needs it
self-hosted, no CDN

10

narrated
walkthroughs, en-ZA
voices

MP3 + WebVTT

5

spoken commands
understood

typed fallback

The earlier “Ask Katlego” chat was removed from the site on 20 Oct by choice. The palette uses the knowledge base for links only, so the site never puts words in his mouth.

Motion with *manners*

● LIVE

GSAP + ScrollTrigger

Lenis

```
three.js r186.1 hero glass
```

Canvas 2D

CURSOR

Red / black / white cursor

Dot + spring ring, magnetic pull on links, contextual labels (Open, View, Play, < Drag >), click ripple, idle orbit. Off on touch, reduced motion and iframes; native cursor kept on inputs and charts.

BACKGROUND

Reactive dot field

Canvas field bends and reddens toward the pointer (tilt/touch on mobile). DPR capped, paused off-screen; static gradient for reduced motion, Save-Data and low-end devices.

MARQUEE

Live quotes + JobNet lane

Real desk quotes with change % and "as of ... SAST"; fallback to daily reference rates, then "stale", then "unavailable" — never invented numbers. Refresh 60 s / 10 min, only while visible.

SCROLL

Progress bar + wave-2 motion

Preloader, split headings
(screen-reader safe), pinned
horizontal section, stacking
cards, mask reveal, magnetic
CTA. Pinning only when Lenis
drives scroll.

STATUS

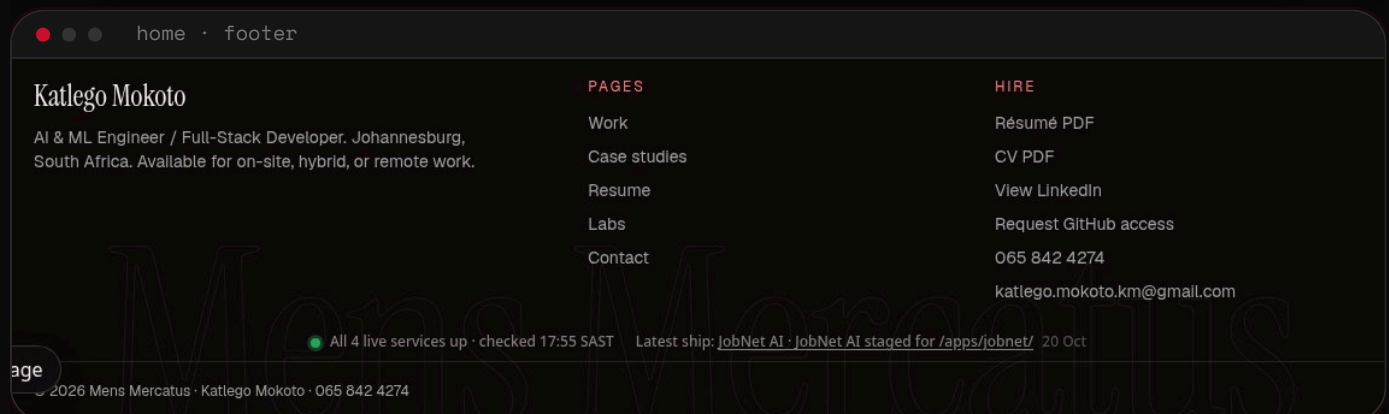
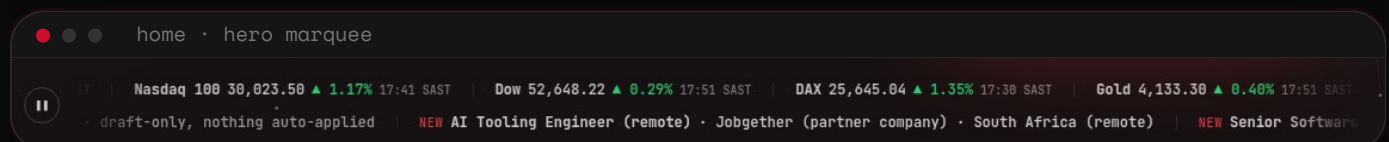
Site-health dot + latest ship

Footer checks the 4 /health endpoints and shows the check time in SAST, plus the latest entry from shipped.json. Skipped on /plan/.

THEME

Dark / light, a11y

Theme toggle, AA-contrast tokens, reduced-motion paths, JS-off content visible, mobile swipe rows instead of pins.

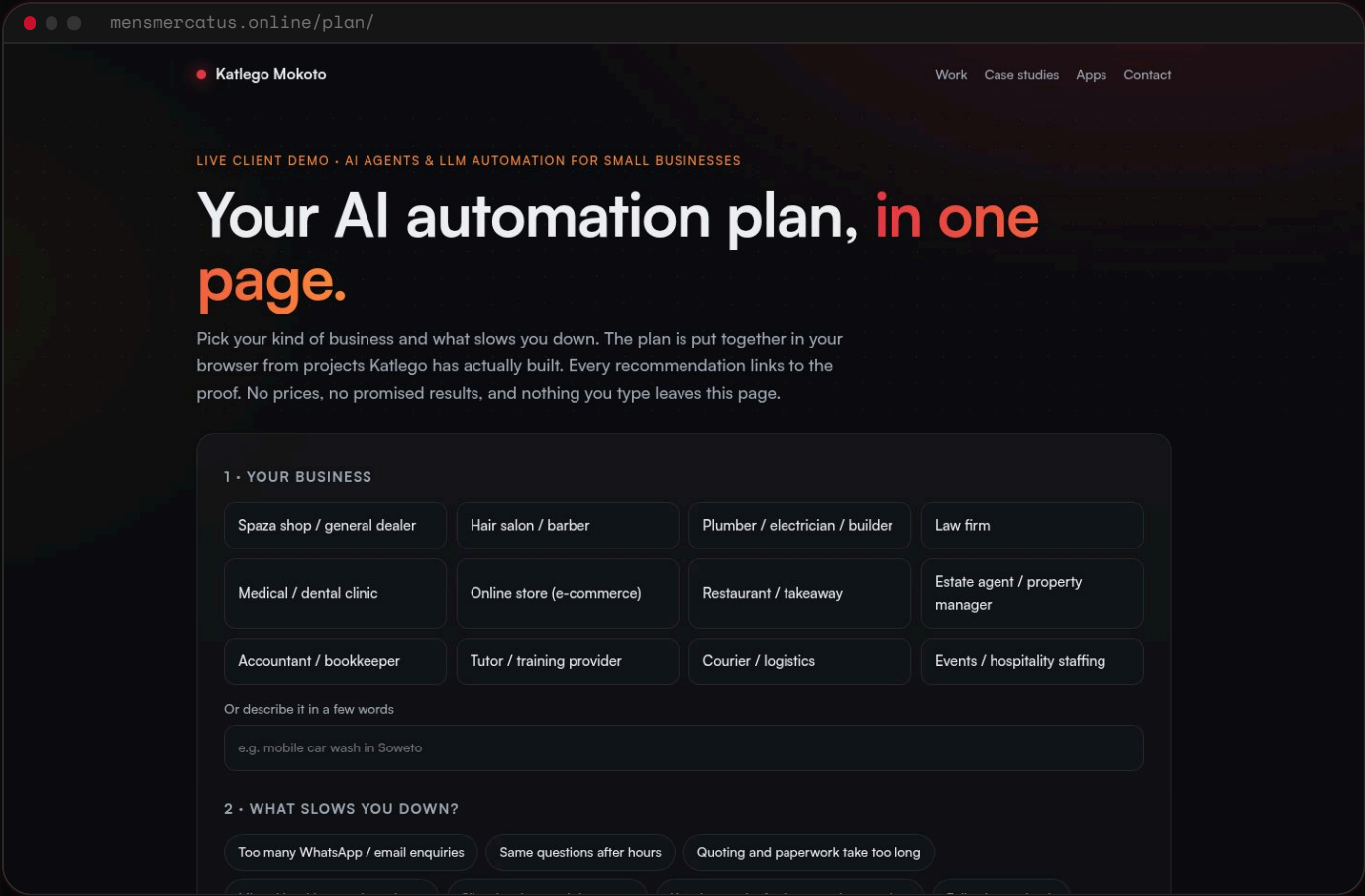


“Your AI automation plan, *in one page*”

LIVE

On-device · nothing sent

Book a call = [mailto](#)



The live client demo, 21 Oct 2026.

A visitor picks one of **12 business types** and up to **11 pain points** (or types free text). The page builds a ranked automation plan in the browser from `plan-kb.json`.

- 17 proof quotes, each checked word-for-word against the site and linked to its project
- No prices, no rands, no promised savings — a test enforces it

“Measured, not claimed” strips

Four case studies and four app pages carry a strip of live figures. Each figure has a source, method and date in `data/proof.json`; `build_proof.py` fails the build if any is missing. Placed below the first screen so it never shifts visible content.

13.9 days

JobNet API uptime at collection

/jobnet/api/health · 04:10 SAST

86

calendar events this week

/forex/api/calendar · 04:10 SAST

353

files in the live Forex app

live mirror count

276_s

SoundX AI explainer video

ffprobe duration

verify-plan 15/15 · verify-proof 49/49 (local, 21 Oct).

11 · DATA, PRIVACY & POPIA

Built so there is *nothing to leak*

LIVE TODAY

What the site does

- No cookies and no third-party requests on the home page (verify3)
- Personalisation lives in sessionStorage for the visit only
- Models, OCR, fonts and icons are self-hosted; OCR still works with all external hosts blocked
- Microphone requested only on click; audio is analysed on-device
- localStorage keeps only the last good quotes and job titles for the stale fallback — no personal data
- Model keys stay on the server; the browser never sees them
- CORS on the API host allows only the two site origins

HUMAN GATE

What the systems refuse to do

- JobNet: auto_apply: false, auto_send_email: false
- Assist: never invents balances, payouts or KYC results
- /plan/ and Drop Net: nothing stored or sent
- Forex: paper only, explicitly not advice
- JobNet outcome model: coefficients only — no company names, roles or emails shipped
- Every outbound message is a **draft** a person reviews

CONSENT-BASED LEADS

How the preview lead flow is designed

● In preview, not live yet

- A "leave your details" card that only queues with an explicit POPIA consent tick; the visitor is never emailed automatically
- Company-level visit notes only: organisation/ASN only, consumer ISPs skipped, Do-Not-Track and Global Privacy Control respected
- **No raw IP addresses stored** — only a salted hash of a truncated IP
- Follow-ups become Gmail drafts for Katlego to review; a PII-free access log; token-protected pull API
- A plain-language privacy page explains all of the above

Identifying named visitors from an IP address is not possible and would breach POPIA, so the site does not attempt it. Visitors who want contact leave their own details.

12 · PERFORMANCE & SEO

Real numbers, *with receipts*

Live desktop LCP (largest contentful paint)

/case-studies/jobnet/		408 ms
/apps/jobnet/		916 ms
/apps/mercatus-assist/		936 ms
/case-studies/soundx/		960 ms
/case-studies/forex/		968 ms
/case-studies/assist/		1036 ms
/apps/forex-codex/		1040 ms
/apps/soundx-ai/		1072 ms
/apps/mercatus-concierge/		1100 ms

Median of 3 cold loads, 1440×900, no throttling, against <https://mensmercatus.online> · 21 Oct 2026, 03:20 SAST · Google's "good" threshold is 2.5 s.

1020 ms

home LCP, throttled mobile

CPU 4x, 150 ms RTT, 5 runs · 05:58 SAST

512 ms

/plan/ LCP, same throttling

CLS 0 (was 0.055)

0.92 s

SoundX AI mobile LCP with splash (was 4.17 s)

gzip-emulated local run

-42%

Concierge video 23.2 → 13.4 MB

SSIM 0.995, PSNR 44.8 dB

Speed techniques

- Motion layer is one module loaded after the load event; CSS injected by JS for LCP parity
- AI boot 6.1 KB gz; models and WASM (MiniLM, ORT, OCR) load only when used
- Hero WebGL pauses off-screen and is skipped on mobile and reduced motion
- Reserved space for chips and strips → layout shift 0 on measured pages
- Video: faststart, posters, preload="metadata" or none

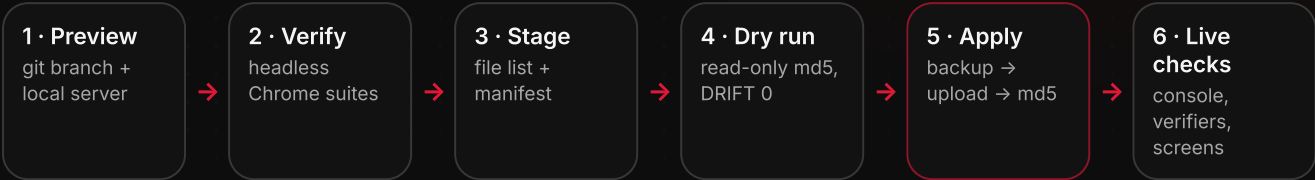
SEO pass (release C)

- Descriptions, canonicals, Open Graph and Twitter tags on every HTML page
- JSON-LD: Person, SoftwareApplication, CreativeWork; jobTitle "AI & ML Engineer / Full-Stack Developer"
- sitemap.xml with 48 URLs and a robots.txt that keeps internal paths out of the index
- 3 duplicate descriptions fixed

13 · DEPLOY, ROLLBACK & QA

Every release *reversible*

NOTHING GOES LIVE WITHOUT AN EXPLICIT YES FROM KATLEGO



🔑 `rollback <release> <timestamp>` restores the backup and removes files the release added · newest first

Release history · 21 Oct 2026 (SAST)

RELEASE	TIME	WHAT WENT LIVE	FILES
B	02:02	Showcases, JobNet AI, Forex God Mode, wave 1–3 theme and AI layer	199
B2–B4	02:22–02:54	Forex quote grid, calendar fetch and versioned app.js; nginx CORS for the calendar	1–3
C	04:23	/plan/ client demo, proof strips, SEO pass, speed pass	61
D + D2	06:14–06:20	Motion layer (cursor, background, marquee, progress, status) + nginx quote CORS	27 + 23
D3	06:55	God Mode CSP fix: self-hosted Font Awesome + three r128	8
D4	07:25	God Mode clean poster, no autoplay	2
E1	07:46	New title “AI & ML Engineer / Full-Stack Developer” everywhere	31
E2	11:13	SoundX Studio merged into SoundX AI; Studio URLs redirect	21
E3	11:42	Hero tags without .NET; ATS CV PDF title rebuilt	29

Every release: dry run with DRIFT 0 first, backup of every overwritten file, md5 check of every uploaded file (0 mismatches), then live checks. Rollback is one command per release, newest first.

DRIFT GUARD

A read-only mirror of live is compared by md5 before each release; apply refuses to run if any live file changed.

CACHE

New assets get new versioned URLs (`?v=d3`, `?v=e3title`, hashed Next chunks), so Cloudflare never serves a stale copy.

APPROVAL

Each release lists its files, size, risks and rollback, and runs only after Katlego’s explicit yes.

Headless Chrome, *every time*

Each suite drives a real Chrome (puppeteer-core) at 1440 px and 390 px, in dark and light mode, with reduced motion, touch and JavaScript off where relevant, and records results to JSON with screenshots.

SUITE	WHAT IT COVERS	LAST RESULT
verify	Home, links, stories, mobile, reduced motion, JS off	46/46
verify2	Wave-2 motion: preloader, pins, Lenis, light mode, mobile	44/44
verify3	AI layer, palette, voice, adaptive, AI Lab, showcases, JobNet AI	101/101
verify-plan	/plan/ client demo	15/15
verify-proof	Proof strips and sources	49/49
verify-motion	Cursor, background, marquee, fallbacks, touch	36/36
verify-godmode	Forex God Mode vs live (icons, CSP, poster)	14/14
verify-merge	SoundX merge (local incl. Apache rules / vs live)	26/26 · 19/20
SoundX AI e2e	Studio boot, transport, God Mode, pairing	78/79
JobNet AI	Unit + headless e2e under emulated live headers	39/39
live-console	13 key live pages, 0 console errors	13/13
live-d	Motion layer on live pages	16/16

The non-passing checks are known and documented: SoundX's LAN phone remote needs the desktop app (the web build pairs over the relay); verify-merge's Apache cases run locally only.

0

console errors on 13 key live pages

live-console · after E3

< 0.1

CLS on every tested page and size

≤ 0.002 on 15 of 16 proof runs

1210/1210

AA contrast checks on SoundX accents

soundx-ai test suite

Tooling: Python (stage, deploy, proof, SEO, mirror), Node (puppeteer-core verifiers and recorders), ffmpeg/ffprobe (video), esbuild (hero glass bundle), git for every change.

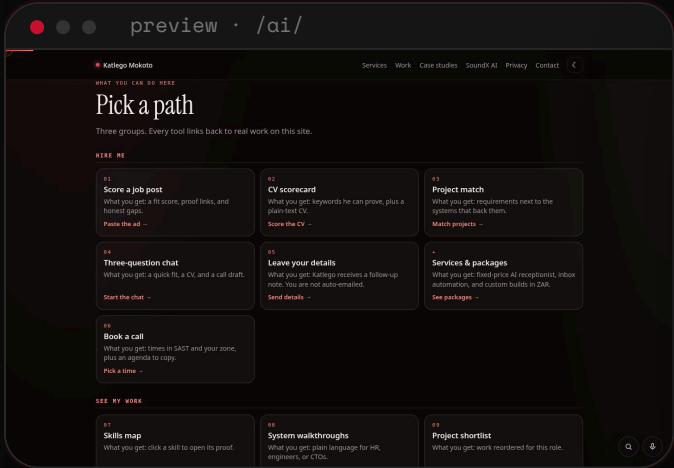
14 · IN PREVIEW

AI hiring suite & *services*

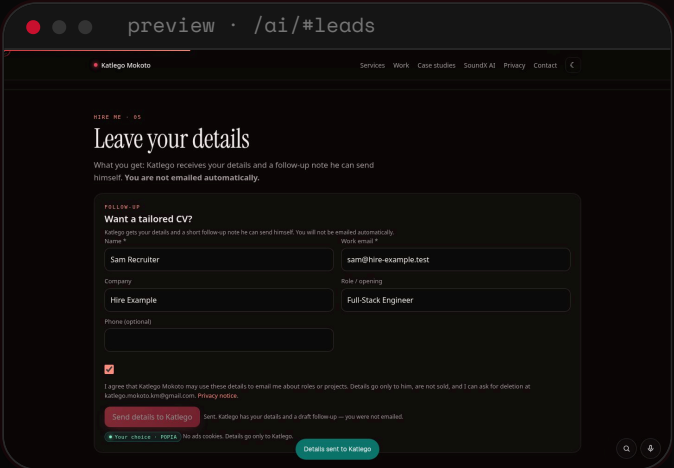
● In preview, not live yet

branch option-F

verify-F 24/24 · services 21/21 · API 12/12



Preview only, captured 21 Oct from the option-F branch: 15 numbered tools grouped into Hire me / See my work / Try the AI.



Preview only: consent-based details card (sample data).

HIRE ME

Score a job post · CV scorecard · Project match · Three-question chat · Leave your details · Book a call

Fit score with proof links and honest gaps; plain-text ATS CV; times in SAST and the visitor's zone.

SEE MY WORK

Skills map · System walkthroughs · Project shortlist · Proof table · What shipped lately · Value sketch

Every tool links back to real work on the site.

TRY THE AI

Interview practice · How scoring works · Live demos · Voice pitch · Reading helpers

Plus a plain-language privacy page.

/services/ ● In preview, not live yet

Fixed-scope packages for South African small businesses: an AI receptionist, inbox and admin automation, a custom AI build, and an optional care plan, with an FAQ on ownership, POPIA and support. Pricing is still being finalised and is not shown here.

Before it can go live

- Katlego's explicit approval of the release and the package wording
- Real-visitor IP handling at the API host (needed for the privacy-safe company notes)
- The leads service and its scheduled pull into Gmail drafts

Throttled mobile LCP in preview: / 1976 ms, /ai/ 1192 ms, /services/ 904 ms, all CLS 0.

What's *next*

01 · DECISION PENDING

Ship the AI hiring suite + /services/

Built and tested in preview; waits for an explicit go-live
yes and final package wording.

02 · HONESTY CALL

SoundX God Mode Assist pill

Its health probe points at a path that returns 404, so the pill stays DEMO. Re-pointing it would turn it LIVE — left for Katlego to decide.

03 · HOUSEKEEPING

Studio redirects 302 → 301

Old SoundX Studio URLs use temporary redirects while the merge settles.

04 · DATA

Refresh proof figures

Proof numbers are dated snapshots (21 Oct). One collector command plus a one-file redeploy updates them.

05 · SOUNDX ML

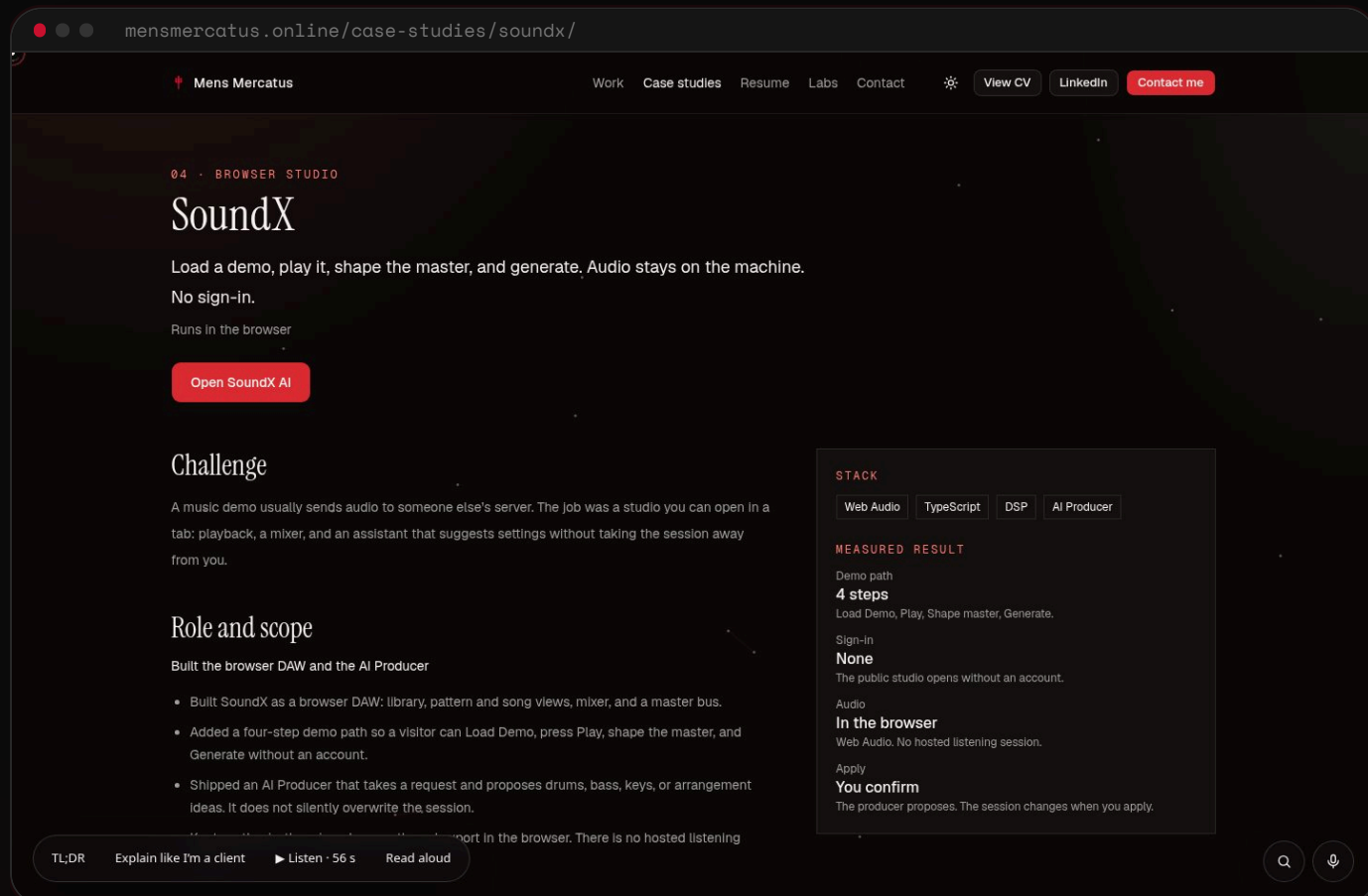
Listed as "Coming" in the source

Neural source separation (true stems), a learned CLAP-style timbre embedding, DJ decks with a crossfader.

06 • FOREX

Commercial readiness

The API reports operator-ready but not commercial-ship: a legal acknowledgement and a charting licence are still open. It stays paper-only.



SOURCES & METHOD

How this document was *made*

Built as HTML using the portfolio's own design tokens — #0a0a0a canvas, Cartel red #c8102e, Instrument Serif headings, Inter body, Space Mono labels, Satoshi figures, the wheat mark, and the status pills from the Careers desk — then printed to A4 with headless Chrome.

SOURCE	WHAT WAS USED
Live checks	https://mensmercatus.online and api.mensmercatus.online /health endpoints, sitemap.xml, fresh screenshots — 21 Oct 2026, 17:45–17:55 SAST
Measured files	proof collection (04:10 SAST), live desktop speed run (03:20 SAST), throttled mobile run (05:58 SAST), verifier result JSON
Code	portfolio site repository (releases B-E3), soundx-ai (merge 399b630), jobnet-ai (9456e87), forex-codex-godmode (0ed3dc3), Cartel Robot (.NET 8), THINK proxy
Release records	the deploy plan: dry runs, backups, md5 checks and rollback commands for each release
Preview	branch option-F (AI hiring suite, /services/, consent leads) — not deployed

Chip legend

● LIVE

● DEMO · labelled demo / local mock

● In preview, not live yet

AI / ML

Tech stack

All times are SAST (UTC+2). Numbers are snapshots from the dates shown; live figures such as quotes, job counts and uptime change continuously.

Mens Mercatus