

Tarik Al Hadethi

Software engineer — whole products, from the OS to the checkout: Win32 internals and a Rust core through to the billing behind them, built as a team of one, running AI agents.

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Dubai, UAE (GMT+4) · UAE Golden Visa, self-sponsored — no employer sponsorship needed · open to remote roles

WORK

Clarus — sole engineer Mar 2026 – present

A screenshot and screen-recording app for Windows. Takes Win+Shift+S over from the Snipping Tool; annotate, record, extract text, share. Designed and built end to end; pricing, checkout and per-seat team billing implemented against Stripe, not yet launched.

- **Native capture:** DXGI Desktop Duplication with a GDI fallback so it never returns a black frame; recording via Windows.Graphics.Capture into a Media Foundation encoder; WASAPI audio.
- **On-device ML:** PaddleOCR on a pure-Rust inference runtime, models compiled into the binary — text extraction with nothing uploaded.
- **Video pipeline:** timeline editor that compiles edits to ffmpeg filtergraphs; redaction baked per-frame from source.
- **Backend:** Postgres with row-level security; Stripe webhooks as the only writer of entitlement; share service on Cloudflare taken from 5.3 s to 0.6 s.
- **Shipping:** custom installer in Rust, Ed25519-signed auto-updater, eleven languages, 113 unit tests and 7 custom verification harnesses.

77,000 lines 845 commits 133 days to v1.0 1 engineer

Cat Sentry — solo build 2026 · personal build, single machine

Computer-vision alert system: fires when the cat steps onto the bedroom floor, never for the person in the bed, in total darkness, storing no footage. The guarantee is geometric — label AND position inside a floor polygon the bed sits outside — so no confidence threshold can trigger on a human. Three hardened containers, ~\$18 of hardware, zero cloud services. Built for one machine and not packaged for others — the value is the design.

SELECTED ENGINEERING

- **A search finding 2% of what it should:** content search across 1,543 screenshots normalised spaces out of the query, demanding word adjacency. Proved with 293 queries built from the captures themselves: 7 of 293 found → 293 of 293 after matching per word.
- **A string comparison in someone else's parser:** Frigate booted cameraless because upstream compares coordinates as strings ("1.000" > "1.0"). Found by reading the parser, fixed with one character.
- **How I use AI:** the architect, not the typist. I design the system and set the rules the AI works inside — what gets built, in what order, and how every change is proven before it ships. Coding agents (Claude Code) do the typing under those rules; the checks decide if the work is real.
- **Two OCR engines that fail in opposite directions:** Windows OCR spaces right/characters wrong, PaddleOCR the reverse — so the accurate pass keeps its characters and borrows the fast pass's split points. Better than either alone.

SKILLS

Languages	Rust · TypeScript · Python · SQL · Bash · PowerShell
Systems	Win32 · DXGI · Windows.Graphics.Capture · Media Foundation · WASAPI · COM · WebView2 · DPAPI · ffmpeg
Product	React 19 · Tauri 2 · Vite · Tailwind · HTML & CSS · canvas · i18n and RTL
Backend	PostgreSQL · row-level security · SQLite · Supabase · Deno · Flask · Stripe · passwordless auth · signed URLs
Infra	Cloudflare Pages, Workers, KV · Docker Compose · NSIS · release engineering · code signing · edge caching
Vision & IoT	computer vision · on-device ML · OCR · image processing · Frigate · RTSP · MQTT
AI	Claude Code · agentic coding · spec-driven development · AI-assisted design · MCP tooling · verifying AI output
Practices	unit tests & harnesses · profiling · threat modelling · CVE triage · container hardening · technical writing · SEO

References and a full walkthrough of any of the above on request · tarikalhadethi.com