RESUME · QUANT ENGINEERING

John Kingola @Astralchemist

Quant engineer · Strategy parameters, entry filters, and backtesting infrastructure · Rust and Python

> *I check that something is true before anyone relies on it: trading strategies, AI agents, and the systems around them.*

Nairobi, Kenya (UTC+3) | remote as a contractor or through an EOR | no visa sponsorship needed

I design the parameters and filters that decide when a trading system acts, and build the infrastructure that shows whether the result is real. In Cernos I ported LEAN's indicator library to Rust (241 indicator types) inside a research engine that translates strategies from eight languages into one portable format, counts every parameter trial against overfitting, and exports the winner as standalone Python or C++. I rebuilt published FX and gold systems from their trade logs, tuning filters on one half of the data and judging them on the other. I have done this for six years, since 2020, from MQL5 Expert Advisors built to client risk specifications to a backtest-as-a-service API with a cache keyed on the strategy hash. Currently technical advisor on algorithmic systems for a trading startup, and lead engineer behind the Change Intelligence Platform, which I built end to end and now maintain.

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6 yrs	241	5	129
trading systems, since 2020	LEAN indicator types ported to Rust	upstream fixes merged and credited	testing methods in Cernos

NOW Four fixes merged into ffn and credited in its v1.3.0 release notes, one into skfolio v1.4.1; quantstats and Databento fixed what I reported. PRs are open at Goldman Sachs, Microsoft Qlib, barter-rs, and Alpaca.

NEXT A 90-day pre-registered paper-trading track, kill conditions committed on day 0.

WHY HIRE ME: DECISIONS, AND HOW I CHECKED THEM

How do you set an exit when the training data holds two trades?

- THOUGHT Two engine cycles per variant is too few to fit anything. A fitted exit would only be a search that looks like a result.
- TESTED Derived it from costs instead: take-profit at 450 ticks, which is 346 of round-trip maker fees plus 55 of measured one-second drift plus a margin, and an exit at the touch after 60 seconds.
- RESULT No free parameter was left to overfit, so the test that followed judged the idea, not the tuning.
- PROOF Liquidity Engine study

Was the gate's edge real, or one lucky session?

- THOUGHT Session D's advantage (t ≈ 2.3 on six cycles) came from the only session I had already looked at.
- TESTED Committed three hypotheses, the variants, the commands and the exits before replaying session E, against an ungated control with identical exits.
- RESULT All three hypotheses failed. I reported it as registered, and the README leads with the negative result.
- PROOF Evidence page

AI TOOLS I BUILD WITH

Claude Code · Anthropic | Cursor · Anysphere | Codex · OpenAI

SKILLS

Trading and research

Backtesting engines · Signal extraction · L2 order books, markouts, and adverse selection · Power laws and EVT · MQL5, MT5, and Pine Script · QuantConnect Lean

Data and backend

Python · FastAPI · PostgreSQL and pgvector · TimescaleDB · Redis · RabbitMQ

Web and product

TypeScript · React · Next.js · Tailwind CSS · Node.js · Supabase

Tooling and desktop

Rust (Tauri, research engines) · Kotlin (Compose Desktop) · MCP servers · npm publishing · SQLite · Linux and VPS ops

Delivery

Docker Compose · GitHub Actions CI · Cross-platform credential stores · Release engineering · Latency and build-performance passes · Upstream PRs to quant libraries

AI and GPU inference

vLLM on CUDA GPUs (Modal L4) · PyTorch, Hugging Face Transformers, Accelerate · KV-cache and GPU memory tuning · Llama 3.1 8B fine-tuning and serving · Claude, OpenRouter, Ollama fallback · Tool-calling loops, embeddings, and RAG

EXPERIENCE

Dec 2025 to Present
Dubai, UAE · remote

The Change Intelligence Platform · Lead engineer (contract), then maintainer

- Built and shipped the platform solo in six months, Dec 2025 to Jun 2026, from architecture to production, under the direction of change-management practitioners. On retainer since for maintenance and feature work.
- Multi-tenant change-management SaaS: Next.js and FastAPI on a Docker Compose stack with Supabase. Fine-tuned Llama 3.1 8B and served it with vLLM on a Modal L4 GPU, behind an OpenAI-compatible API with an OpenRouter fallback.
- Four role-based tiers, including a delegated Champion portal with magic-link auth, PDF export via Puppeteer, a seven-tag sentiment model, and an automated LinkedIn outreach pipeline.
- Led a latency and build-performance pass after an audit surfaced I/O-wait bottlenecks and N+1 query patterns.

Next.js · FastAPI · Python · Supabase · PostgreSQL · Docker Compose · Llama 3.1 8B · vLLM · Modal · OpenRouter · Puppeteer

Oct 2025 to Present
Dubai, UAE · remote

Early-stage stealth startup · Technical advisor, algorithmic systems

- Joined as lead algorithmic engineer at the founding stage, then moved to an advisory role while funding closes.
- Designed the backtest-as-a-service API: FastAPI, TimescaleDB, a Redis cache keyed on the strategy hash, and per-key rate limits.

Python · FastAPI · TimescaleDB · Redis

2024 to 2025
Nairobi · hybrid

ConsultHasha · Principal systems engineer

- Early engineer at a startup. Designed and built the REST API layer and the production service endpoints the product and its client integrations ran on.
- Owned architecture, deployment, and reliability.

2020 to 2025
Remote

Upwork · Freelance quant and full-stack developer

- MQL5 and MT5 Expert Advisors built to client risk specifications, then Python backtesting tools, Telegram signal bots, and execution dashboards.
- Also Docker-first Next.js and Postgres client platforms.

MQL5 · MetaTrader 5 · Python · Telegram bots · Next.js · PostgreSQL · Docker

EDUCATION

Sep 2022

Mount Kenya University · Computer Science

PROJECTS

Cernos — Strategy research engine in Rust, LEAN indicators ported

● Pre-release · private repo

A terminal tool that finds trading strategies on the web, translates them into one JSON format with an LLM, checks each translation against the original code in a sandbox, backtests and breeds them, and exports the winner as standalone Python or C++.

241 indicator types ported from LEAN · 129 testing methods · 8 source languages translated

Private repo, architecture only

Rust · OpenRouter LLM loop · Sandboxed containers · Python and C++ export

Strategy Rebuilds — 16 published FX and gold systems, reverse-engineered

● In progress · private

Rebuilt published MyFxBook systems from their trade logs: profiled 16, inferred their entry rules, and ported the strongest to MT5 and to a core-plus-adapters Python kit where session, trend and pause filters attach without touching the entry logic, then tested them on real broker ticks.

16 systems profiled · 88% of one vendor's trades matched by the inferred rule · 218 trades reproduced exactly

Private repo, architecture only

MQL5 · MT5 real-tick tester · Python · Dukascopy and broker ticks

Liquidity Engine — BTC order-book research, pre-registered

● Public · negative result

A deterministic Rust engine that records BTC perpetual order books on three venues, replays them exactly, and tested a market-making strategy that does not work at retail fees.

47-67% variance from OFI · 41-66 ticks drift at 1 s · 3 venues, exact replay

Evidence page · Study, eleven figures · Source

Rust · WebSocket feeds · L2 queue model · Python figures

UPSTREAM FIXES TO QUANT AND TRADING LIBRARIES

Bugs found by reference-value tests and benchmarks, reproduced with failing tests, and reported with a fix.

ffn	The ulcer performance index was not annualised, rounding residue counted as tracking error, short lookbacks missed month-end anchors, and 3y, 5y and 10y returns were reported without enough history. Four PRs merged, credited by name in the v1.3.0 release notes.
skfolio	Drawdown measures ignored a loss on the first observation, so they disagreed with the optimizer. PR merged the same day, listed in the v1.4.1 release notes.
quantstats	The probabilistic Sharpe ratio used the wrong kurtosis and could return a probability above 1. All three bugs confirmed by the maintainer, fixed in v0.0.82.
Databento dbn	The symbol map stored one entry per day per mapping, 1.73 GB at 20,000 instruments, and the test suite failed without a feature flag. Both fixed by the maintainers, released in 0.71.0 and 0.72.0.

gs-quant	Goldman Sachs' toolkit: a correlation crash, Sortino computed over losing days only, Sharpe on two clocks, an RSI seed, and backtest P&L that counts the starting capital. Six issues and five fix PRs open; the first was reproduced independently by another contributor.
Qlib	Microsoft's risk_analysis max drawdown ignored a loss in the first period, the same bug as skfolio's. PR open.
barter-rs	The tear sheet showed the loss rate as the win rate, and got profit factor and Sortino wrong. PR open.
Alpaca MCP	Generated trading tools carried no read-only or destructive hints, so a client could not tell a quote from an order. PR open.

Numbers as of 2026-11-03. No live P&L is claimed.