
SUMMARY

Software developer who ships full stack: Flutter clients, Postgres/Supabase backends, Next.js web and Python/MQL5 research code. Focused on offline-first commerce systems and on quantitative trading research that is validated out-of-sample.

SELECTED WORK**Tadjena: offline-first POS and marketplace**

Aug 2026 – present

Independent · tadjena.shop · tadjena.store

- Built an offline-first point of sale in Flutter/Dart for Windows, Android and web on SQLite; a sale never depends on connectivity.
- Designed an idempotent sync engine: append-only ledgers merge by UUID, editable data is last-write-wins, pulls use per-table watermarks.
- Wrote the Supabase/Postgres backend: 28+ migrations, row-level security, SECURITY DEFINER RPCs, per-device authentication, dev-to-prod pipeline with a manual production gate.
- Shipped a server-rendered Next.js 16 marketplace with reserve-for-pickup, a real-time household cart, and a license storefront with admin.
- Operate it: encrypted nightly backups with a verified restore (29/29 tables), hourly health checks, checksummed Windows and Android releases (v1.0.0, Sep 2026).
- Wrote importers to migrate shops from OpenSourcePOS/MySQL and a Delphi/Firebird system.

Forex reinforcement-learning research

2026

Independent · github.com/samdotbin/martin

- forex_rl_v4: graph encoder over 28 pairs and 8 currencies with a PPO policy, walk-forward folds, deflated Sharpe, bootstrap intervals and stress tests.
- A safety layer (exposure caps, max-hold, volatility circuit breaker, VaR cap, forced flatten) that runs identically in training and inference.
- QTrader and TQLearning: tabular Q-learning experts in native MQL5 for MetaTrader 5. QTrader masks illegal actions instead of learning to avoid them. Both document their status plainly. Research only.

The Market Ark

Oct–Nov 2025

Independent

- Expo and Next.js monorepo with a hybrid local/server ledger: idempotency, an offline queue and reconciliation.
- C core compiled to WebAssembly with Emscripten, wired into a Telegram Mini App demo on Vercel.

SKILLS

APPS	Flutter · Dart · drift · SQLite · Next.js 16 · React 19 · TypeScript · Expo / React Native · Astro
DATA & BACKEND	PostgreSQL · Supabase · Row-level security · SQL migrations · Realtime · pg_cron · GitHub Actions · Vercel · Cloudflare
SYSTEMS	C · WebAssembly (Emscripten) · Node.js · PowerShell · Telegram Mini Apps
QUANT & ML	Python · PyTorch · PPO · Graph neural nets · Q-learning · MQL5 · MetaTrader 5 · PCA / SVD
RETAIL HARDWARE	ESC/POS printing · Barcode input (USB, camera) · Cash-drawer control · OpenSourcePOS · MySQL · Firebird

EARLIER

Feb 2023: systems notes in C on threads, processes, sockets and sed.