

Anuj Tanwar

LEAD PROTOCOL ENGINEER · DERIVATIVES, ORACLES & ON-CHAIN INFRASTRUCTURE

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Remote (global) · open to relocation · IST, flexible to US / EU / Asia hours

Protocol engineer for on-chain derivatives. Led protocol engineering on Adrena, a live Solana perpetual-futures DEX (\$9.7B lifetime volume): the core Anchor program, a multi-provider oracle publishing **~94k signed price batches per day**, liquidation / stop-loss / limit-order keeper engines, security-audit remediation, DAO-governed releases and 24/7 node ops. 3+ years shipping production financial infrastructure in **Rust, Anchor, Solidity and TypeScript** across **Solana, EVM, Casper, Mina and CreditCoin**, working daily with pool-to-peer perpetuals mechanics (margin, leverage, funding, liquidation) and TradFi market data: US Treasury rates, the VIX, Nikkei 225 with FX conversion, S&P 500 and single-stock synthetics gated by US / JPX venue calendars.

CORE SKILLS

Languages: Rust · Solidity · TypeScript / Node.js · Python · o1js · C (bare-metal embedded)

Protocols & Contracts: Anchor / Solana programs · EVM (Foundry, Hardhat, OpenZeppelin) · Casper (Odra) · Mina zkApps · proxy patterns (UUPS / Transparent)

Trading Infrastructure: pool-to-peer perpetual-futures mechanics · margin & leverage · funding-rate design · liquidation engines · SL/TP & limit-order execution · keeper automation · market-hours gating for RWA/equity feeds · backtesting & parameter sweeps

Oracles & Market Data: multi-provider consensus (min-agree) · signed price batching · Switchboard · Chainlink VRF · API3 · TradFi data onboarding (FRED, index feeds, FX conversion) · Pallas/Schnorr signature verification · quantum-entropy RNG

Backend & Data: PostgreSQL · Redis · Prisma / Supabase · Stripe billing · REST / WebSocket APIs (Axum, Fastify) · The Graph · IPFS · Next.js

Infra, Ops & Security: Solana RPC + Yellowstone gRPC (Geyser) node operations · verifiable builds + DAO release pipelines · systemd · AWS (S3, RDS) / Render / Railway / Vercel · audit remediation · static analysis · invariant & differential testing (LiteSVM)

Edge AI / Embedded: YOLOv8 training & dataset pipelines · Raspberry Pi + Coral Edge TPU · thermal imaging · STM32 bare-metal C

EXPERIENCE

Adrena · Lead Protocol Engineer

Remote · Dec 2025 – Present

Live Solana perpetual-futures DEX (adrena.trade) · \$9.7B lifetime volume, \$195M peak day · winding down 2026

- Became the **#1 contributor to the live mainnet Anchor program** (131 instructions) within 7 months of joining the ~5-person team: 47% of program commits and ~35% of the surviving 118k-line Rust codebase. During this tenure the protocol processed ~\$890M volume across 941 traders and 6,274 positions (~\$3.9M avg/day).
- Designed and shipped the **Virtual Funding Rate engine** (open-interest-imbalance-driven cumulative funding indices with per-market caps) and the synthetic RWA/commodity pool system: gold, silver, WTI crude, S&P 500 and NVDA perp markets with signed market-hours attestations and advance-only anti-replay, the platform's first US-equity perps, live on mainnet Apr–May 2026.
- Authored the **multi-provider oracle system** (~89% of the oracle state module; min-agree consensus across providers incl. Switchboard) and MrOracle, the Rust price-publishing keeper that landed 10.2M signed price batches (~82M price points) in its first 100 days, sustaining ~94k/day over the trailing 8 weeks, using versioned transactions + address-lookup-tables under Solana's tx-size cap with multi-tier RPC fallback.
- Owned a **third-party security-audit remediation** end-to-end: triaged 33 findings, patched all applicable critical/high/medium (incl. two-step admin transfer with 48h timelock), executed zero-realloc on-chain account migrations across three schema versions, and ran SHA-256-pinned verifiable-build releases through Realms DAO governance.
- Sole author of the **liquidation, stop-loss/take-profit and limit-order execution keepers**, the market-hours gate and the buyback service (Rust + TS); #2 contributor to the Yellowstone-gRPC event-driven execution keeper (Jito bundle submission).
- Operated the fleet 24/7 at ~95%+ availability with weekly maintenance windows; co-maintained the staking keepers behind 312k protocol-lifetime reward claims (~153M ADX + \$4.0M USDC).
- Operated Adrena's dedicated **non-voting RPC + Yellowstone gRPC (Geyser) node** (Agave; 96-core / 755 GB / 7 TB NVMe): ~80 req/s at 99.9% HTTP success, 7 external gRPC subscribers, TLS + auth-gated behind nginx.
- Ran the 42-day **"Forge" trading-competition infrastructure** (428 registrants, 434k hourly scoring snapshots at 99.2% coverage), the public competition data API and the Discord observability bot; shipped 110+ merged PRs on the Next.js trading frontend.

Diamond Pools · Co-founder, Contracts & Backend

Remote · May 2026 – Present

Quantified yield protocol on Solana built around ORE mining (diamondpools.app) · 3-person team: product / quant / engineering

- Sole author of the **Anchor vault protocol** across two generations (57-instruction v2): share-token NAV accounting, three risk-tier buckets, multi-engine strategy routing and a bounded referral treasury, hardened with 290+ Rust unit tests and 380+ integration cases incl. an executed ERC-4626-style inflation-attack test.
- Built the entire **off-chain layer** solo: strategy keepers, crank/settlement services, analytics ETL (Postgres + REST/WS), referral indexer with attestation-based settlement, typed SDK/ABI pipeline and most of the frontend.
- Ran a 3,120-trial strategy-parameter sweep (zero failures) over ~1 GB of on-chain mining datasets with Calmar/stability ranking and a documented promotion procedure, iterating with the team's quant.

Autonom · Backend Engineer, Oracle & Market-Data (Rust)

Part-time · Remote · Mar 2026 – Present

Upstream signed price-data provider for Adrena (terminal.autonom.cc) · first collaboration Aug 2025

- Built **Rust (Axum) market-data integrations** onboarding TradFi instruments into the production feed: US Treasury-bill rates (FRED), the VIX, Nikkei 225 (JPY to USD) and US- and HK-listed equities (HKD to USD); wrote provider-integration test suites across five data vendors.
- Extended the operator's **market-hours system** with a JPX venue calendar and per-feed open/close windows embedded in the signed Adrena-compatible price payloads.
- 2025: built a **dual-chain quantum-entropy RNG oracle** (single Rust binary with EVM + Casper lanes; ANU quantum entropy; Merkle commit-fulfill flow) with systemd deployment runbooks.

Doot Foundation · Founder & Sole Engineer

Remote · Oct 2023 – Dec 2025

Trust-minimized zero-knowledge price oracle for Mina Protocol + Zeko L2 · zkIgnite Cohort 2 grantee

- Founded and solely built and operated for ~2 years a **ZK price oracle** aggregating 10 assets from 20+ data providers on a 10-minute cadence (Mina devnet + Zeko L2): o1js smart contracts with recursive ZkPrograms and off-chain-state rollups, every provider response Schnorr-signed before aggregation and historical aggregates pinned to IPFS.
- Reimplemented **Mina's Pallas-curve Schnorr signature verification from scratch in Solidity** (~2.9k LOC) and deployed it to Arbitrum One mainnet (mirrored to Ethereum via LayerZero) so EVM contracts can verify Mina-signed oracle data on-chain.
- Published the full integration surface: **@dootfoundation/client** npm SDK (12 releases, automatic API to L2 to L1 fallback), REST API, developer dashboard and docs; also primary author of **Fizk Protocol's (formerly zkUSD) oracle-price-provider**: the stablecoin's multi-provider signed price service, with certificate-pinned DNS-over-HTTPS provider fetching, resolver fallback and TTL caching (Dockerized, 2025).

Elemental Blockchain · Smart-Contract & Full-Stack Engineer (Contract)

Remote · Mar 2023 – Feb 2024

- Authored the **core Trading + Positions (ERC-721) contracts for POP! Protocol**, an EVM perpetual-positions DEX with an off-chain sequencer-signed order flow, and built its trading interface.
- Lead contributor to **EBSS**, an on-chain B2B invoicing/escrow platform on Polygon: built the frontend, The Graph subgraph and the mainnet deployment, and extended the escrow contracts (ERC-721 claims, Kleros arbitration interfaces).
- Solo-built **"Struction," a tokenized real-estate / RWA shares platform** (ERC-20 shares + The Graph subgraph + Next.js), deployed to Sepolia.

SELECTED PROJECTS

- **Shadowhare**: Starknet static security analyzer, 22.5k LOC Rust, 71 detectors, 156 tests, published on crates.io; sole author.
- **pErp-man**: RWA commodity perps DEX (gold/silver/oil/platinum) on CreditCoin testnet; top contributor; deployment pipeline provisioning 15 contracts (10 UUPS-upgradeable) with on-chain DAO ownership handoff + Postgres settlement keeper.
- **Casper Draw**: provably-fair instant-draw product live on Casper Network (casperdraw.xyz); sole author of the Odra/Rust contracts, backend and UI; designed the payout-probability/sustainability models and the quantum-entropy commit-reveal RNG pipeline; also delivered a whitelabel EVM gaming platform (Chainlink VRF v2.5).
- **Privacy R&D**: privacy-preserving prediction market on Casper using a commitment/nullifier note scheme (Blake2b, on-chain Merkle tree, path-verified claims; Odra/Rust), plus a bearer-token o1js prediction-market prototype.
- **Mina DeFi**: msUSD, an overcollateralized algorithmic stablecoin runtime (solo); prediction-market zkApp settled by my own Doot oracle (Zeko devnet).
- **CEX product-surface replica**: self-directed rebuild of a centralized exchange's client, mobile (React Native/Expo) and web (Next.js via react-native-web), to internalize exchange product mechanics end to end.
- **SearchLeads**: Stripe billing engine for a live B2B SaaS; credit + pay-as-you-go plans, proration, idempotent webhooks (Node/TS, Prisma, Supabase).
- **Celeron IT Solutions** (co-founder), **Elekind / Gaj Dastak**: edge-AI elephant-detection and deterrence device. Built the device software (RPI 4B, thermal + IR cameras, Coral Edge TPU), personally collected/annotated the training data and trained the YOLOv8 models; wrote the SMS/HTTP alerting, acoustic deterrence, STM32 pan firmware and cloud ingestion backend; unit deployed with the Chhattisgarh Forest Department, 2026 (code proprietary).

OPEN SOURCE & EDUCATION

- Open PR in **o1-labs/zkapp-cli** (Zeko L2 scaffold, +264/-30 across 12 files, 85.7% patch coverage); issues in wagmi, viem, graph-tooling, proto-kit · **Encode Club ZK Bootcamp** (Q4 2023) · **Mina Navigators / zkIgnite Cohort 2** grant program.
- **B.Sc. Physical Sciences with Computer Science**, Hansraj College, University of Delhi · 2019–2022 · CGPA 8.9 / 10