Pedro D'Andrea Rosalba

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Experience

2026 **Software Engineer at eNor**

- Developed central bank integrations (BCR's Transfer365 instant-payment rail, ISO 20022, clearing US$25B+ a year; LBTR gross settlement) for a Rust money-movement platform backed by in-house double-entry and TigerBeetle ledgers over Kafka/Redpanda, with transactional outbox relays and circuit breakers across 9 services; load-tested the full transfer flow at p50 444ms / p99 1.45s with 500 concurrent transfers.
- Hardened crypto swap and custody: Binance Spot orders signed with Ed25519 via Cloud KMS with idempotent IDs and partial-fill reverts; Fireblocks vault/webhook integration with exactly-once handling, MFA-gated withdrawals and address allowlists for enterprise custody (BTC, ETH, USDT, USDC).
- Led an IP-jurisdiction compliance system end to end (Axum geolocation service on ipapi with HMAC-only IP storage and circuit breakers) gating 12 money actions across 30 sanctioned jurisdictions; security work on GKE behind Cloud Armor WAF: WIF-scoped Terraform plans, mTLS CI gates, login/TOTP lockout and replay protection.

2024–2026 **Software Engineer at Herodotus**

- Expanded the use case of a Zero Knowledge co-processor from EVM Layer 2 storage proofs to plain merkle state proofs, enabling off-chain use cases such as matching engines, liquidation pipelines, and oracle updates for DeFi protocols.
- Engineered low-latency infrastructure for DeFi lending and prime brokerage, building high-throughput data pipelines via WS scraping to serve real-time orderbook data and RFQ systems, achieving 600–800ms latency in quote response.
- Built financial risk analysis tools leveraging quantitative modeling to price on-chain credit, achieving highly stable CVaR 99 convergence for risk spread pricing alongside sub-30ms execution.
- Created an AI risk analysis tool mapping more than 12 kinds of risks (governance protocol, smart contract, token holder concentration, etc.) across more than 30 leading DeFi protocols. Created a dependency graph with infrastructure layers (e.g., Layerzero to Aave) to showcase and analyze user portfolio risk, generating AI reports.
- Active speaker in technical workshops and panels at cryptography and blockchain events worldwide, such as Invisible Garden at Devconnect 2025 and Ethereum Brasil 2025.

2022–2024 **Developer Relations at Mediolano**

- Led architecture of an Intellectual Property (IP) licensing platform, bridging WordPress integration with decentralized infrastructure on Starknet, L2 for Ethereum. Smart contract developments in Cairo (rust based programming language for starknet).
- Created a marketplace where creators create programmatic revenue share and crowdsourcing systems, reducing friction from bureaucratic legacy systems.
- Integrated third-party APIs (Pinata for IPFS decentralized file storage data management) and engineered smart contracts (ERC1155) to automate bulk license generation and streamline platform monetization, licensing over 300,000 publications and increasing author revenue share by reducing third-party middlewares.
- Implemented Zero Knowledge circuits for proof of license and proof of ownership mechanisms, bringing transparency and using mathematics to prevent identity fraud while creating unique ownership systems for IPs.

2024–2026 **Founder at Rio de Janeiro University Blockchain League**

- Founded and scaled a blockchain engineering community through workshops, hackathons, and technical meetups.

2023–2025 **Math Olympiad Instructor at Colégio e Curso Pensi**

Projects

2022–2025 **Open Source Contributions** (OnlyDust)

- Maintainer at a project in OnlyDust: creating issues, managing applicants, and performing code review.
- Contributor to Starknet developer tooling, compilers, and ZKVM infrastructure projects including Starknet Foundry and Kakarot.

2025 **"Cran" — ETHDenver 2025**

- Developed an FHE-based RAG AI agent enabling privacy-preserving LLM inference on EVM-compatible networks.
- Awarded zkSync, Flow, and Somnia network bounties at ETHDenver 2025.

Education

2024–2026 **IMPA Tech** — B.Sc. in Math, Computer Science

Skills

Rust, Typescript, Python, Kafka/Redpanda, RabbitMQ, gRPC, Kubernetes, Terraform, GCP, OpenTelemetry, Grafana, Loki, Postgres, Redis

English (fluent), Spanish (fluent), Portuguese (native), Italian (beginner)

Awards

2025 **ETHGlobal Prague 2025 Awards**

2024 **ETHGlobal Brussels 2024 Awards**

2023 Honorable Mention — International Mathematics Competition; 12th Place — Brazil IMO Team Selection Test

2018–2023 Brazilian Math Olympiad — 1 Silver Medal, 1 Bronze Medal