

Manuel Parra

Lead Software Engineer (IC), Python Financial Data Pipelines, AI/RAG & Multi-Tenant Platform Architecture

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PROFESSIONAL SUMMARY

Lead-level software engineer and backend/AI data platform engineer with 6+ years of professional experience, plus earlier product-building and hackathon work. Specializes in **Python/FastAPI**, **financial data ingestion pipelines**, **SQL data modeling**, **OAuth/webhook integrations**, **AI/LLM and RAG workflows**, and **Azure/GCP/AWS cloud delivery**. Experienced translating client/product requirements into **multi-tenant / tenant-aware platform architecture**, normalized data models, external financial integrations, and production-ready systems while remaining hands-on as an IC.

TECHNICAL SKILLS

Backend & Architecture: Python, FastAPI, Node.js, TypeScript, NestJS, Django, Rust, API design, software architecture, service boundaries, tenant-aware access

Financial Data & Integrations: financial data ingestion, P&L/income statements, balance sheets, cash flow, EBITDA, Plaid OAuth, Bridge.xyz, KYC/KYB, virtual accounts, webhooks

Data & Databases: PostgreSQL, SQL, Azure SQL, MongoDB, Redis, Pydantic, normalized schemas, financial-statement mapping, source evidence, benchmarking

AI/Data Systems: OCR, Document AI, RAG pipelines, multimodal/vision LLMs, PydanticAI, Langfuse, OpenAI API, Azure OpenAI, Hugging Face

Cloud, DevOps & Compliance: Azure, GCP, AWS, Docker, Podman, CI/CD, GitHub Actions, Railway, Linux, audit logging, access control, HIPAA-aware patient-record handling familiarity

Fintech, Web3 & Automation: Plaid, Bridge.xyz, Aave V3, Privy, Solidity, Foundry, virtual accounts, compliance-state sync, Hedera/Hiero

PROFESSIONAL EXPERIENCE

Technical Lead & Full-Stack Platform Architect (IC) | ConTrust Suite Construction Daily Reporting Platform

March 2026 - Present

- Architected a **tenant-aware, project-scoped construction daily reporting platform** for jobsite document ingestion, SharePoint-synced files, dashboard analytics, and AI-assisted reporting.
- Implemented **source-traceable ingestion and canonical mapping** flows that convert construction daily-report PDFs and SharePoint files into normalized reporting data with raw values, validation flags, source references, and document evidence.
- Orchestrated **FastAPI backend services**, React/Vite workflows, PDF extraction workers, shared Pydantic schemas, extraction benchmarking, and AI reporting modules across a multi-repo platform.
- Strengthened **construction report extraction reliability** across **5 pipeline controls**: source-evidence contracts, idempotent worker completion, real-document regression tests, accuracy benchmarking, and retry/concurrency handling.
- Delivered **7 product-facing construction reporting workflows** across project-scoped source-file review, report navigation, dashboard metric mapping, missing-data semantics, canonical review, manpower/equipment analytics, and grounded daily briefs/Q&A.

Technical Lead & Full-Stack Product Architect (IC) | ConTrust (Remote)

January 2026 - March 2026

- Spearheaded a **3-engineer build** of ConTrust, a contractor prequalification, KYB verification, and financial-risk platform for the Saudi construction market.
- Authored **5 architecture documents** and **44+ product requirements** from client/product conversations, converting requirements into architecture decisions, domain rules, and delivery priorities.
- Improved financial Document AI extraction from **34% to 94% accuracy** on real audited statements, processing a **22-page filing in 97 seconds** at roughly **\$0.30-\$0.42 per company**.
- Modeled PostgreSQL/FastAPI domain layers spanning **8 areas**: company onboarding, KYB/UBO verification, canonical fact/ratio mapping, score reports, credit wallet/payment flows, supply-chain scoring, audit logs, and event-driven notifications.
- Composed an **agentic Document AI pipeline** for Arabic and English KYB/financial PDFs, combining OCR, vision LLMs, layout-aware extraction, deterministic validation, source grounding, and human review.
- Mapped **financial-statement extraction** across P&L/income statements, balance sheets, cash flow, EBITDA, liquidity, leverage, and KYB risk indicators for downstream financial-risk reporting.

Systems Architect, Rust Cryptography & Consent Infrastructure (IC) | LayerD (Remote)

October 2025 - December 2025

- Engineered the **Rust cryptographic core** for identity-based encryption, BLS signatures, Merkle proofs, threshold decryption, PVSS/DKG flows, and WASM/FFI exports.
- Verified **3.63M real device IDs in 63 seconds** through hashed consent records, Merkle batching, Hedera anchoring, and multi-node proof verification.
- Secured gateway verification flows for consent ingestion, Merkle batching, HCS anchoring, proof indexing, provider isolation, **OIDC/JWKS access tokens**, API-key rotation, and restart-safe proof recovery.
- Deployed **threshold-node infrastructure** with NATS JetStream transport, DKG convergence handling, encrypted key-share storage, deterministic leader/decryption coordination, health checks, metrics, and Railway/Podman hardening.

Backend Engineer & Systems Architect (IC) | Stackit.ai (Remote)

March 2024 - October 2025

- Owned **backend and platform architecture** for StackIT's onchain wealth automation product, connecting deterministic smart-wallet infrastructure, Aave V3 health-factor protection, Bridge.xyz/Plaid onboarding rails, Privy authentication, scheduled workers, admin operations, and frontend execution workflows.
- Connected **Plaid OAuth and Bridge.xyz** rails for KYC/KYB onboarding, bank linking, virtual accounts, transfers, static memos, webhooks, idempotency, and compliance-state synchronization.
- Processed **\$500K+** through Bridge/Plaid-linked virtual accounts over **6 months** with **no integration incidents**.
- Automated Aave V3 health-factor protection across **84 smart-wallet positions**, supporting **\$2M+ collateral flow** and **zero liquidations over 18 months**.
- Defined **StackIT AI v2 architecture** for Privy-managed wallet automation, external-agent gateway APIs, simulation-gated execution, policy enforcement, webhook lifecycle delivery, safe mode, and Base deployment readiness.

Backend Engineer, Real-Time Sports Gaming Platforms (IC) | Zingiber (Remote)

September 2020 - March 2024

- Built foundational backend systems for **real-time fantasy sports and gaming products** before AI-assisted coding tools were part of the workflow, manually owning API design, MongoDB schemas, WebSocket state flows, sports-data integrations, debugging, and documentation.
- Created **REST APIs** with Express, MongoDB, Swagger/OpenAPI documentation, validation, error handling, CORS, environment configuration, and deployment setup.
- Synchronized 5-player lobby mechanics with **Socket.IO**, supporting public/private squads, membership updates, lobby joining, player selections, and shared game state.
- Linked external **basketball/sports APIs** to fantasy mechanics around teams, scores, fixtures, and user predictions.
- Contributed to **Regalis**, a hackathon blockchain prototype using Solidity, Hardhat, Chainlink price feeds, IPFS metadata, and Mumbai deployment scripts for donation-based NFTs.

EDUCATION

Bachelor's Degree in Computer Science

Universidad de Carabobo | 2013 - 2018

AWARDS & RECOGNITION

- **Moralis 1st Place Winner, Chainlink Fall Hackathon 2021:** Awarded USD 10,000 for Regalis.
- **Moralis Pooled Prize Winner, Chainlink Spring 2022 Hackathon:** Winner for Monkey Page Lab in the USD 13,500 pooled prize category.

LANGUAGES

Spanish: Native | **English:** C1