DIEGO RODRIGUEZ

SENIOR FULL-STACK & AI ENGINEER

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Portfolio: diego-rodriguez.work — Full-stack AI projects, algorithmic trading systems, and production case studies

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PROFESSIONAL SUMMARY

Senior Full-Stack Engineer with 9+ years designing, building, and deploying production-grade applications across fintech, real-time gaming platforms, and AI-powered systems. Specialized in bridging AI/ML capabilities with real-world products — from LLM orchestration and RAG pipelines to ML-driven risk detection and algorithmic trading systems powered by reinforcement learning. Currently building AI-integrated SaaS products with dynamic content generation and intelligent recommendation engines.

WORK EXPERIENCE

Senior Software Engineer · AI-Powered Fintech Platform   Nov 2025 – Present
iDelsoft · Remote · Full-time

Designing and building an AI-powered SaaS platform for the US market combining payment processing infrastructure with intelligent proposal generation and dynamic business recommendations.

- Architecting full-stack payment processing platform using React, Node.js, TypeScript, and PostgreSQL — secure transaction flows, merchant onboarding, and real-time payment tracking
- Designed and implemented AI-driven dynamic proposal system integrating LLM APIs for personalized business proposals with automated quote generation for POS/payment services based on business type, industry vertical, and transaction volume
- Built intelligent recommendation engine analyzing business profiles to suggest optimal collateral items and hard asset configurations tailored to merchant industry, size, and processing needs
- Implementing structured output patterns (JSON schemas, Pydantic validation) for reliable AI-generated content ensuring consistent formatting, accurate pricing, and compliant language across thousands of automated generations
- Developing prompt engineering pipelines with template management, few-shot examples, and industry-specific context injection for domain-aware content generation
- Designing RESTful API architecture with JWT authentication, role-based access control, and rate limiting for multi-tenant SaaS platform

  Stack: React, Node.js, TypeScript, PostgreSQL, OpenAI API, REST APIs, JWT, Docker, CI/CD

Senior Software Engineer · AI Agent Payment Systems   Sep 2025 – Nov 2025
Proxify · Remote · Part-time · 3 months

Designed and built an AI-native payment gateway based on the x402 protocol, enabling autonomous AI agents to process and authorize financial transactions programmatically.

- Architected x402 payment protocol gateway allowing AI agents to autonomously discover, negotiate, and execute payments through HTTP-native machine-to-machine flows
- Designed tool/function calling interfaces for LLM-powered agents to interact with payment APIs, handling structured outputs, error recovery, and transaction validation
- Built secure transaction processing pipeline with JWT authentication, request signing, and automated fraud checks for agent-initiated payments
- Implemented event-driven payment lifecycle management with real-time status tracking, webhook notifications, and retry logic for distributed reliability

  Stack: Python, TypeScript, Node.js, FastAPI, REST APIs, JWT, Redis, PostgreSQL, Docker

Senior Full-Stack Engineer · AI & Risk Detection Systems   Jan 2024 – Apr 2025
Gaming Platform (Confidential) · Remote · Full-time

Designed and built a high-traffic real-time gaming platform with integrated ML-powered risk detection, fraud prevention, and player behavior analysis serving thousands of concurrent users.

- Designed and implemented ML-driven risk scoring engine using Python and scikit-learn for real-time fraud detection, analyzing behavioral patterns, transaction anomalies, and session fingerprinting with 94% precision
- Built real-time event-driven architecture with WebSocket and Redis pub/sub for live game state management, processing thousands of concurrent transactions with sub-200ms latency
- Developed automated anomaly detection pipelines using Python, Pandas, and statistical modeling to identify unusual betting patterns, multi-accounting, and bonus abuse
- Architected feature engineering pipelines extracting behavioral signals from session data, transaction velocity, geolocation patterns, and device fingerprints for risk classification
- Implemented complex authentication flows with JWT security, multi-factor verification, API security with tiered rate limiting and abuse detection
- Built full-stack application with React, TypeScript, Node.js — real-time dashboards for risk analysts with data visualization and alert management
- Deployed containerized microservices with Docker, CI/CD, automated testing, monitoring/telemetry for high-concurrency workloads
  Stack: Python, scikit-learn, Pandas, React, TypeScript, Node.js, FastAPI, WebSocket, Redis, PostgreSQL, Docker, JWT

Senior Frontend Developer
Mar 2021 – Dec 2023

Encora (Fintech SaaS) · Remote · Full-time

Led frontend architecture and development for a fintech SaaS platform, designing scalable systems and mentoring engineering teams.
- Designed and built production-grade React/Next.js applications with TypeScript for enterprise financial clients
- Developed and integrated RESTful APIs and backend services using Python (Flask) and Node.js for financial data processing pipelines
- Implemented automated testing (Jest, Cypress) with CI/CD integration, achieving 90%+ coverage and reducing deployment failures by 40%
- Built real-time data visualization dashboards for financial analytics using React, WebSocket, and server-side rendering
- Orchestrated migration from legacy frontend to Next.js architecture, reducing page load times by 60%
- Mentored 4 junior engineers on TypeScript best practices, testing methodologies, and code review processes
  Stack: React, Next.js, TypeScript, Python, Flask, Node.js, Jest, Cypress, Docker, MySQL, PostgreSQL, AWS, CI/CD

Full-Stack Developer
Jul 2020 – Mar 2021

Código del Sur (Insurance SaaS) · Remote · Full-time

- Developed serverless API endpoints using Node.js and AWS Lambda for insurance policy processing with retry logic for distributed reliability
- Built dynamic form engines with React, Next.js, TypeScript for complex insurance workflow automation
- Integrated third-party APIs with structured output validation (JSON schemas) for underwriting data pipelines
- Implemented NoSQL data models with DynamoDB for high-throughput operations
  Stack: React, Next.js, TypeScript, Node.js, AWS Lambda, DynamoDB, MUI, REST APIs

Full-Stack Developer
Dec 2016 – Jul 2020

Vida Servicio de Compañía · Montevideo · Full-time

- Built and deployed 10+ production web applications using React, Node.js, PHP (Laravel), MongoDB/PostgreSQL with GraphQL APIs
- Developed mobile-first applications using React Native and CapacitorJS with real-time features via Firebase and WebSocket
- Designed database schemas and data processing pipelines for CMS platforms handling high-volume operations
- Integrated payment processing, third-party APIs, and authentication services for e-commerce platforms
  Stack: React, Node.js, PHP, Laravel, MongoDB, PostgreSQL, GraphQL, Firebase, React Native

NOTABLE PROJECTS

AI & Algorithmic Trading Systems
Personal Projects

- Built multi-symbol trading system with reinforcement learning (SAC, PPO) — 51.8% win rate, 1.09 profit factor across 4,685+ automated trades on 5 currency pairs
- Developed custom RL training environments using PyTorch for market prediction and adaptive strategy optimization
- Created real-time data pipelines with Python, Pandas, technical indicators (RSI, EMA, ATR) for feature engineering and risk management
- Built Flask/FastAPI backends for trading dashboards, portfolio management, and ML model evaluation with automated benchmarking

Stack: Python, PyTorch, scikit-learn, Pandas, NumPy, Flask, FastAPI, Jesse Framework, RL (PPO, SAC)

→ Full project details, live demos, and case studies: **diego-rodriguez.work**

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, SQL

AI/ML: LangChain, LangGraph, RAG Architecture, Prompt Engineering, Function Calling, PyTorch, scikit-learn, Hugging Face Transformers, Pydantic, Structured Outputs, Anomaly Detection, Reinforcement Learning (PPO, SAC)

Backend: FastAPI, Flask, Node.js, NestJS, REST APIs, GraphQL, gRPC, WebSocket, Event-Driven Architecture, Microservices

Frontend: React, Next.js, Tailwind CSS, Framer Motion, TypeScript, Server-Side Rendering

Cloud & DevOps: AWS (Lambda, Fargate, SQS, SageMaker, Bedrock), Docker, Kubernetes, CI/CD, GitHub Actions

Databases: PostgreSQL (pgvector), MongoDB, DynamoDB, Redis, Firebase

Data & ML Tools: Pandas, NumPy, scikit-learn, PyTorch, Feature Engineering, Model Evaluation, A/B Testing

Security: JWT Authentication, OAuth 2.0, API Security, Rate Limiting, Fraud Detection

Monitoring: LangSmith, Langfuse, Application Insights, Automated Evaluation Pipelines

EDUCATION & CERTIFICATIONS

Software Engineering — UDELAR (Universidad de la República)

Professional Certifications:
- Blockchain, Smart Contracts & Solidity — NY Buffalo University (Coursera)
- Docker Fundamentals — Coursera
- Object Oriented Programming JavaScript — Udemy
- React Native Development — Udemy
- NativeScript Development — Udemy
- Linux Server Management and Security — Udemy
- ExpressJS & MongoDB — HK University (Coursera)