Hendrick Rafael

Backend & Full-Stack Developer · Python · FastAPI · PostgreSQL · LLM Integration

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PROFILE

Backend developer (Python, FastAPI, PostgreSQL) with systems in production and more than 4,000 automated tests across his projects. Working rule: the core is deterministic and the LLM stays at the edge — it extracts, picks or drafts; business rules and writes live in code that can be tested.

PROJECTS

General Medical Services — hospital shift scheduling — Production

- Shift assignment by multidimensional fairness with OR-Tools CP-SAT, 12-permission RBAC, append-only audit and 1,849 backend tests.
- Telegram bot with 22 deterministic tools: the LLM picks the tool, it never computes.

Python · FastAPI · PostgreSQL · SQLAlchemy · React · TypeScript · Alembic · Docker — github.com/rafenixcore/general-medical-services

Licitia — public procurement platform — Production · multi-tenant

- Syncs 61,000+ tenders from the Dominican DGCP, ingests the tender file and analyses it with LLM-assisted extraction validated by Pydantic; the user always decides.
- Layered Clean Architecture, tested multi-tenant isolation, CI with strict ruff and mypy. 1,159 backend tests, 535 panel tests and 18 browser flows.

Python · FastAPI · Next.js · PostgreSQL · SQLAlchemy · Alembic · Docker — github.com/rafenixcore/licitia

Residencial Miriam Piña — land plot sales platform — Client work · in use

- Client engagement: public page with an interactive map of 92 plots and a private app for leads, users and reports.
- Custom authentication with revocable sessions, server-side RBAC, immutable audit via database trigger and race-condition control on double booking.

Next.js · TypeScript · PostgreSQL · Drizzle ORM · Neon · Tailwind CSS

Nutrisoft — clinical nutrition platform — Production

- Deterministic nutrition engine (Mifflin-St Jeor, TDEE, macros and rules for renal, diabetes, hypertension and dyslipidemia) with the LLM limited to drafting; the engine overwrites any value the model changes.
- Explicit human approval before a plan becomes final, PDF export and installable PWA.

Python · FastAPI · PostgreSQL · React · TypeScript · OpenAI — github.com/rafenixcore/draAcostaNutribot

SmartBooking — conversational appointment booking — Production

- Web panel plus WhatsApp and Telegram channels; persisted state machine, availability engine and idempotency by event id. 414 backend tests.
- Deterministic flow with an optional LLM layer, off by default in production.

Python · FastAPI · PostgreSQL · React · TypeScript · WhatsApp Cloud API · Telegram Bot API — github.com/rafenixcore/smartbooking-ai

Moodle AI Assistant — 34 tools inside Moodle — Side project

- Tool catalog over Moodle's REST web services, first built and validated as an MCP server and then reused as a native bot, with human confirmation before any write.

Python · MCP · LLM function calling · PHP — github.com/rafenixcore/moodle-ai-assistant

EXPERIENCE

Backend Developer — Elevara Software — 2025 — present · Freelance
Backend services in Python and FastAPI, third-party API integrations and deployment.

Full-Stack Developer — Futuro Cierto — 2024 — present · Freelance
Full web applications: backend, admin panel and database.

IT Instructor — Colegio Adventista Ozama — 2016 — 2022 · 2025 — 2026
Technical teaching; certified as a Professional Training Facilitator by INFOTEP.

Administrative Manager — RR Autofast Auto Import — 2022 — 2023

Early experience (2007 — 2016): International Prospect League · Pursar Technology · ACS / Xerox Company.

TECHNICAL SKILLS

Backend	Python · FastAPI · SQLAlchemy 2 · Pydantic v2 · Alembic · OR-Tools CP-SAT
Data	PostgreSQL · Neon · SQL Server · MySQL · Drizzle ORM
Frontend	React · Next.js · TypeScript · Tailwind CSS
AI	LLM integration · function calling · MCP · Pydantic output validation · OpenAI · DeepSeek
Infrastructure	Docker · GitHub Actions · Railway · Vercel · pytest, Vitest and Playwright
Methodology	Spec-Driven Development · Clean Architecture · reversible migrations

EDUCATION

B.Sc. in Information Systems Engineering — Universidad Adventista Dominicana (UNAD), 2015. MESCYT registry No. 5648.

Certifications: Big Data (UTECO) · SQL Server (ITLA) · Professional Training Facilitator (INFOTEP) · Virtual Learning Environments (INFOTEP) · Django and DRF (Platzi).

LANGUAGES

Spanish — native · English — B1+ · References available on request.