MARTÍN JOSÉ HERRERA VILLARREAL

Full Stack Developer & Applied AI | Technical Lead

LLM | Google Gemini | Claude | AI agents | Python | NestJS | Next.js | PostgreSQL

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Availability: Barranquilla (on-site) · remote across Colombia/LATAM · open to domestic travel

PROFESSIONAL SUMMARY

Systems Engineer and Full Stack Developer with 3+ years of experience, specialized in integrating generative AI and large language models (LLMs) into business processes. I technically lead a solution that extracts data from PDF invoices using AI vision (Google Gemini) and processes around 2,000 invoices per month from 15+ energy retailers, cutting reprocessing to under 0.4% versus the previous regex-based method. AI agent-assisted development with Claude Code and Gentle AI. Self-taught in AI Engineering.

PROFESSIONAL EXPERIENCE

ISES – Ingeniería y Soluciones Especializadas S.A.S. — Barranquilla, Colombia
Full Stack Developer | Aug 2026 – Present

- Technically lead an intelligent energy-invoice extraction solution: I define the architecture, validate deliverables, and supervise an intern who maintains the automations.
- The solution processes around 2,000 invoices per month from 15+ retailers with Gemini and structured JSON output; invoices come from portal scraping (Selenium, Playwright), email or API, with business-rule checks, retries, and human review.
- Migrated the extraction automations to a hexagonal architecture (ports and adapters) with updated libraries and built a Python CLI (Rich/Textual) to operate them, improving maintainability and extensibility.
- Develop with AI coding agents (Claude Code and Pi) configured with Gentle AI, an open-source framework adding persistent memory, risk-based code review, and sub-agents. I define specs, drive the architecture, and validate results.
- Proposed and currently building the new energy-data platform, from single-client to multi-client and multi-service, with NestJS, Next.js/React, and PostgreSQL.

ISES – Ingeniería y Soluciones Especializadas S.A.S. — Barranquilla, Colombia
Junior Full Stack Developer & Automation Engineer | Oct 2024 – Jul 2026

- Proposed and implemented replacing regular expressions with AI vision (Gemini 2.5) and prompt engineering to extract data from PDF invoices, cutting reprocessing from almost all invoices to at most 7 of 2,000+ a month and preparing the data that feeds the Power BI dashboards.
- Built end-to-end business modules and REST APIs with NestJS, PostgreSQL, and Angular 18.
- Redesigned the client-facing query app in React and modernized the legacy internal management system (PHP, MySQL) with new modules.

Wekala Technologies S.A.S. — Barranquilla, Colombia
Web Developer Trainee | Mar 2023 – Sep 2024

- Built web modules with Next.js and NestJS and wrote SQL and MongoDB queries, working with Git and Scrum.

TECHNICAL SKILLS

Applied AI: generative AI, LLMs, Google Gemini (vision), Claude API (Anthropic), structured output (JSON schema), prompt engineering, document data extraction, OCR (Amazon Textract), LangChain / LangGraph.

AI-assisted development: Claude Code, Pi (gentle-shell), Gentle AI, MCP servers (Engram, CodeGraph, Context7), AI code review (GGA).

Backend: TypeScript, Node.js, NestJS, Python, REST APIs, Swagger / OpenAPI, JWT / OAuth, Prisma, TypeORM, Sequelize, hexagonal architecture, SOLID.

Data & automation: PostgreSQL, MySQL, MongoDB, SQL (modeling, migrations, stored procedures, views), ETL pipelines, pandas / numpy, web scraping and RPA (Selenium, Playwright), PyMuPDF / pypdf, CLIs with Rich / Textual.

Frontend: Next.js, React, TypeScript, Tailwind CSS, shadcn/ui, Zustand / Redux, React Hook Form + Zod, PWA.

Testing & DevOps: Vitest, Playwright, Pytest, GitHub Actions, GitLab CI, Docker, AWS (Textract, S3, EC2 / Lambda, RDS), Vercel, Neon, Linux / WSL2, tmux, Git, Scrum.

EDUCATION

Universidad Simón Bolívar — Barranquilla, Colombia
B.Sc. in Systems Engineering | Feb 2020 – Dec 2025

- Minor in Digital Transformation Project Management. National top Saber Pro score (ICFES) and academic excellence scholarship.

AI Engineering — Self-taught | 2026 – Ongoing

LANGUAGES

Spanish (native) | English A2 (reads technical documentation).