Enrique Rios Flores

AI Engineer & Physicist

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Professional Summary

Physics–driven technology enthusiast with a passion for **applied artificial intelligence**, large–language–model (LLM) services and scalable microservice architectures. Expert at abstracting complex problems into mathematical models and orchestrating containerised pipelines that transform raw data into automated business value. Recent focus on *generative AI for content creation*, evidence–analysis platforms, networked cloud deployments and MCP server-client development.

Core Competencies

- **AI Tooling**: LLM *integration via APIs & tooling* (OpenAI, OpenRouter), MCP server (Claude Standard).
- **Programming**: Python (Pandas, NumPy, FastAPI, PyTorch, LangChain), SQL, Bash, JavaScript/TypeScript.
- **Data Ops**: ETL pipelines, data cleansing, Postgres/SQLite, versioned datasets.
- **MLOps & DevOps**: Docker, Docker Compose, GitHub Actions, Azure, CI/CD for micro-services, API gateways, Dokploy.
- **Soft Skills**: Problem abstraction, Agile collaboration, technical writing (LaTeX/Markdown), communication, proactivity .
- **Languages**: Spanish (Native), English (B2).

Selected Experience

PEMEX – MAAe Project   Jan 2025 – Present
Lead AI Engineer

- Architected **MAAe**, a containerised AI platform that automates compliance evidence review.
- Implemented FastAPI ia-service, java-Springboot back-end and Next.js front-end connected via Azure pipelines.

Ecoems – AI Exam Guide   Dic 2024 – April 2025
AI & Data Automation Consultant

- Designed **end-to-end pipeline** that scrapes, deduplicates and standardises >5k exam questions, storing metadata in Postgres for downstream analytics.
- Built LLM-based engine generating new question variants and automatic distractors; integrated prompt-chaining with quality filters.

IRE / TCMC   Mar 2024 – Nov 2024
Data Automation Specialist

- Integrated Odoo ERP with custom Python adapters, automating 5 core processes and saving 15+ hours weekly.
- Reduced inference cost by 25% by introducing OpenRouter layer to dynamically select the most cost-efficient LLM.

Education

Instituto Politécnico Nacional – ESFM   2018 – 2023
B.Sc. in Physics and Mathematics.
Focused on numerical methods, optimization, probability and statistics.