

Franco Pietrantuono

francopietrantuono999@gmail.com

[+54 9 2241 47-0878](tel:+5492241470878)

[GitHub](#)

[Portfolio](#)

[LinkedIn](#)

PROFILE

Full-Stack Software Developer, advanced **Information Systems Engineering** student and Co-founder of Pulpad with **+2 years of experience** in software development. Specialized in **Generative AI** and **Agentic RAG** leveraging LLMs, vector databases (**Milvus**), and **LangGraph**. Strong proficiency in **React**, **Next.js**, **Express**, and **FastAPI**. Focused on designing scalable architectures and innovative solutions under Agile methodologies.

EXPERIENCE

Co-founder & Tech Lead

Pulpad | **October 2025 – Present**

- Orchestrated the **product roadmap** and led the **R&D** of a touchless hardware-software integration for real-time padel score tracking.
- Led the design and launch of **MVPs** to accelerate market validation and iterative feedback cycles under an **Agile framework**.
- Developed **core device logic** using **CircuitPython**, ensuring seamless hardware performance and sensor integration.
- Spearheaded the development and deployment of the company's official website using **Next.js**, focusing on scalability and user experience.
- Company's website link: <https://www.pulpad.com/>

Generative AI Software Developer

LINES – UTN FRLP | **May 2025 – Present**

- Contributed to the development of an advanced **RAG** system, integrating **LLMs (Ollama)** with specialized frameworks such as **LangChain**, **LangGraph**, and **Chainlit** in **Python** to build complex reasoning workflows and conversational capabilities.
- Designed and implemented robust **CI/CD** pipelines using **Docker** and **Jenkins**, focusing on controlled deployments to ensure high system reliability and stability.
- Engineered a multi-layer testing strategy, including **unit**, **integration**, and **end-to-end (E2E)** testing using **Pytest** and **Playwright** to validate the RAG pipeline—from individual component logic to complete user workflows.
- Lines UTN FRLP link: <https://www.linkedin.com/company/lines-frlp>

Full Stack Developer (Freelance)

MM Grúas | **March 2025**

- Developed a high-performance landing page using **React** and **Tailwind CSS**, optimizing for **SEO** and ensuring a fully responsive design across all devices.
- Integrated **Cloudinary** for automated image optimization and delivery, significantly improving page load speeds and performance.
- Managed the full deployment lifecycle on **Vercel**, implementing seamless **CI/CD** workflows and production-ready environments.

PROJECTS

Estud.ia

Intelligent educational assistant powered by an **Agentic RAG** architecture.

- Agentic AI:** Implemented a **Self-Corrective RAG** system using **LangGraph**, featuring answer validation (LLM-as-a-Judge) and automated query refinement to eliminate hallucinations.
- Retrieval Pipeline:** Optimized accuracy through a two-stage flow: semantic search in **Milvus Vector DB** followed by a **Reranking** process to ensure flawless academic contexts.
- Architecture & Deployment:** Designed a distributed architecture with a **FastAPI** backend and **LangChain** services, containerized with **Docker** and deployed across **Render**, **Railway**, **Vercel**, **Supabase**, and **Zilliz**.
- Frontend Evolution:** Migrated the **MVP** from **Chainlit** to **Next.js**, delivering a custom interface that enhances flexibility and user retention.

Locality

Platform for the registration, management, and retrieval of geographical data, optimizing data structures for localization.

- **Data Architecture & Backend:** Developed a robust API using **TypeScript**, **Express**, and **TypeORM**, designed under referential integrity principles for the efficient management of hierarchical structures (Countries, Provinces, Cities).
- **High-Performance Frontend:** Implemented a modular interface using **Astro** and **React**, optimizing static content delivery and client-side interactivity for a seamless user experience.
- **DevOps & Cloud Strategy:** Designed an automated **CI/CD** pipeline for building and publishing images to **Docker Hub**, with final deployment on **Microsoft Azure (VM)** instances.
- **Standardization & Scalability:** Orchestrated the entire environment using **Docker**, ensuring dev-to-prod parity and high availability for cloud-based services.

EDUCATION

Information Systems Engineering

UTN FRLP | 2022 - Present

Strong academic background in software development fundamentals, system design and analysis, Software Engineering, and modern application development technologies.

CERTIFICATIONS & COURSES

Azure Fundamentals (AZ-900)

Microsoft | In Progress

Versioning and Automated Git-to-Docker Deployment

UTN FRLP | June 2025

TECHNICAL SKILLS

Backend: Python (FastAPI, Flask), TypeScript(Express).

Frontend: React, Next.js, TailwindCSS.

Generative AI: RAG Systems, LLMs (Gemini, Ollama), LangChain, LangGraph, Chainlit, Milvus.

Databases: PostgreSQL.

Cloud/DevOps: Docker, Github actions, Azure.

SOFT SKILLS

- **Teamwork & Agile Collaboration:** Experienced in Agile environments, working effectively within multidisciplinary teams to achieve shared goals and deliver high-quality results.
- **Effective Communication:** Skilled in conveying complex technical concepts clearly, tailoring the level of detail to suit both technical and non-technical audiences.
- **Adaptability & Continuous Learning:** Proven ability to rapidly adopt new technologies and pivot according to project requirements while maintaining efficiency and high standards.
- **Leadership & Initiative:** Active participant in technical decision-making and ownership of key responsibilities, driving solutions aligned with industry best practices and professional standards.

LANGUAGES

Spanish | Native

English | Intermediate