

# Pietrantuono Franco

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## PROFILE

Full-Stack Software Developer and advanced Information Systems Engineering student with solid experience in frontend (**React**, **Next.js**) and backend (**Express**, **FastAPI**, and **Flask**). Specialized in implementing **Generative AI (RAG)** systems using LLMs and vector databases. I work under agile methodologies, actively participating in the development, design, and maintenance of applications. I am looking to strengthen my technical skills while contributing to building scalable and innovative solutions within engineering teams.

## 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

IA 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

### Locality

- Developed a comprehensive platform for the registration, administration, and querying of geographical data (countries, provinces, and cities), optimizing data structures for efficient localization.
- Implemented the backend using **TypeScript**, **TypeORM**, and **Express**, building robust and secure **APIs** with a strong focus on data integrity.
- Developed the frontend with **Astro** and **React**, ensuring a modular, fluid, and highly adaptive user experience.
- Architected full containerization of the environment using **Docker**, localizing and standardizing the development-to-production workflow.
- Configured **CI/CD** pipelines for automated building and publishing of images to **Docker Hub**, followed by deployment on **Microsoft Azure** Virtual Machines to ensure scalability and high availability.

## Estudi.ia

- Developed an advanced Educational Chatbot using a **2-Step Retrieval-Augmented Generation (RAG) architecture**, specifically designed to enhance academic information comprehension.
- Architected retrieval workflows with **LangChain** and **LangGraph**, evolving the project from a **Chainlit UI** to a custom-built **Next.js** platform to maximize flexibility and user experience.
- Implemented **Milvus** as the vector database for high-performance semantic indexing and document retrieval, optimizing both accuracy and query latency.
- Integrated **Gemini API** as the primary **LLM** provider, leveraging its capabilities for both sophisticated response generation and high-dimensional **embedding** creation.
- Built a robust backend with **FastAPI** and **SQLAlchemy** to manage user profiles and "notebook" administration, including logic for chat history, interactive flashcards, and dynamic quizzes.
- Orchestrated the entire system using **Docker**, standardizing the environment across Frontend, API, Database, and Vector Engine to ensure a consistent and scalable deployment.

## EDUCATION

Information Systems Engineering	Universidad Tecnológica Nacional - UTN FRLP   2022 - Present
Strong academic background in software development fundamentals, system design and analysis, Software Engineering, and modern application development technologies.	
Technical High School Diploma in Electromechanics	Escuela de Educación Secundaria Técnica N° 1 (Chascomús)   2015 - 2021

## CERTIFICATIONS & COURSES

Azure Fundamentals (AZ-900)	Microsoft   In Progress
Versioning and Automated Git-to-Docker Deployment	Universidad Tecnológica Nacional - 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