

PEDRO ELÍ RUIZ ZÁRATE

AI & MACHINE LEARNING ENGINEER | DATA & SOFTWARE DEVELOPER

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PROFILE

Electronic Engineer and AI/software developer with 5+ years of experience building academic-risk analytics, document intelligence platforms, data tools, and local-first AI applications. Co-founder of Bitsol SAS and AI Developer at the Javeriana Analytics Center, with hands-on experience in Python, machine learning, computer vision, LLM deployment, Docker/Linux, and hardware prototyping.

TECHNICAL SKILLS

Programming: Python, Java, C, SAS, MATLAB

AI / Data: Machine learning, computer vision, image processing, LLM fine-tuning/inference, local AI, speech-to-text, document AI

Tools: Docker, Git, Linux, llama.cpp, Ollama, Hugging Face, Modal, Optuna, MATLAB/Simulink

EXPERIENCE

AI Developer

Aug 2021 - Present

Javeriana Analytics Center, Pontificia Universidad Javeriana | Bogotá

- Develop AI and data solutions for an institutional early-warning program that identifies undergraduate students at academic risk and supports timely intervention.
- Build model-ready datasets, risk indicators, and decision-support workflows in collaboration with academic and administrative stakeholders.

Co-founder & Developer

Jul 2024 - Present

Bitsol SAS | Colombia

- Co-founded an open-source technology company and contributed to the development of ArchiHUB, a configurable document-management platform with flexible metadata and extensible AI-powered plugins.
- Contribute to backend, deployment, and document-processing workflows for archival, historical-memory, and peacebuilding contexts.

Data Analyst & Developer

May 2025 - May 2026

Fundación Paz y Reconciliación (PARES) | Bogotá

- Collected, cleaned, and analyzed data on social dynamics in Colombia, identifying trends and creating visualizations for peace and reconciliation research.
- Developed analytical tools and repeatable workflows that supported multidisciplinary teams and data-informed decision-making.

Technology Consultant

Dec 2022 - Oct 2024

Management Solutions | Bogotá

- Developed tools for calculating and generating regulatory reports for insurance-sector organizations.
- Supported technology infrastructure and deployments for financial-management solutions, bridging technical implementation and client requirements.

SELECTED PROJECTS

YourGymBuddy - Local-first AI Fitness Coach

2026

Python | llama.cpp | GGUF | Ollama | Hugging Face | Modal | Optuna

- Built a privacy-focused AI assistant for the Hugging Face Build Small Hackathon that analyzes workout history and generates practical fitness insights using small language models.
- Created a synthetic Spanish and English fitness dataset and an automated cloud fine-tuning pipeline with hyperparameter optimization, then exported trained models to GGUF for local inference.
- Deployed a live Hugging Face Spaces demo with CSV workout ingestion, sample data, AI-driven analysis, and voice input.

Gipsy - Modular Fixed-wing UAV

2025 - Present

Robotics | Electronics | 3D design and printing | Photogrammetry

- Designing a fixed-wing UAV platform for aerial image capture and photogrammetry, combining electronics, software, structural design, and data-oriented use cases.
- Iterated on wing geometry, weight distribution, fuselage structure, modular assembly, and 3D-printed internal components, with future sensor integration such as LiDAR in mind.

EDUCATION & LANGUAGES

B.S. Electronic Engineering - Pontificia Universidad Javeriana, 2017-2022 | Thesis: Sidewalk-detection system for autonomous home-delivery robots.

Erasmus+ Exchange - Faculty of Electrical Engineering and Computing, University of Zagreb, Feb-Jul 2022.

Languages: Spanish (native) | English (B2, upper-intermediate)