# Rigoberto Acosta González

Telecommunications and Electronics Engineer | PhD Candidate in Engineering Sciences

## Contact

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**Portfolio:** `https://rigo93acosta.github.io` | **Location:** San Carlos de Bariloche, Argentina

## Professional Summary

Research-oriented engineer and PhD candidate at the Balseiro Institute specializing in digital signal processing (DSP), photonics, and integrated systems. Experience in Python and MATLAB for scientific modeling and simulation of problems. Applied knowledge in machine learning and FPGA development, linking theoretical research and hardware implementation.

## Technical Skills

- **Software & Modeling:** Python (Advanced: Scikit-learn, Pandas, SciPy, NumPy, TensorFlow), MATLAB (Expert), C/C++ (Basic), Rust (Basic), Verilog, SystemVerilog.
- **Engineering Tools:** Vivado (FPGA), Cocotb, Lumerical, OptiSystem, Docker, Linux (Advanced Administration), Git/GitHub.
- **Specializations:** Digital Signal Processing (DSP), Machine Learning (Reinforcement Learning), Photonics, Optical Communications, Embedded Systems.

## Professional Experience

- **Graduate Researcher** | Instituto Balseiro, Argentina 2022 – Present
  - Developing advanced DSP algorithms for high-speed Photonic Analog-to-Digital Conversion (P-ADC).
  - Implementing scientific simulations and data processing pipelines using Python and MATLAB.
  - Designing parallel DSP schemes for optical communications, resulting in international conference publications (ECOC 2024).
- **Teaching Assistant** | Instituto Balseiro, Argentina 2024
  - Lead practical sessions on Statistical Signal Processing and Stochastic Processes for engineering students.
- **Instructor Professor** | Universidad Central "Marta Abreu", Cuba 2017 – 2022
  - Taught Microprocessors and Embedded Systems; supervised 3 undergraduate theses in hardware-software co-design.
  - Developed firmware in C and Assembly; implemented wireless communication protocols for educational hardware.

## Education

- **PhD in Engineering Sciences**, Instituto Balseiro, Argentina 2022 – Present
  *Research:* Analog-to-Digital Photonic Conversion.
  **Relevant Coursework:** Integrated Photonics, Neural Networks, Digital Communications.
- **BSc in Telecommunications and Electronics Engineering**, UCLV, Cuba 2012 – 2017
  *Thesis:* Matrix electronic whiteboard with wireless communication.

## Certifications

- **Digital Signal Processing Specialization** — EPFL (Coursera, 2026)
- **Machine Learning Specialization** — DeepLearning.AI / Stanford (Coursera, 2024)
- **Linux Server Administration** — Platzi (2025)
- **FPGA Development and Verilog** — LinkedIn Learning (2025)
- **Python for Data Analysis** — Platzi (2024)

## Languages

- **Spanish:** Native.
- **English:** Limited Working Proficiency.
  - *Reading & Writing:* Intermediate / Low-Intermediate (Capable of handling technical documentation and emails).
  - *Listening & Speaking:* Elementary / Basic (Focusing on professional communication development).

## Selected Publications

- Acosta González, R., et al. "Analysis of Equalization Strategies for Broadband Frequency-Interleaved ADCs." RPIC'25, Argentina.
- G. Zoireff, ..., Acosta-González, R., et al. "Experimental Demonstration of a FI-ADC with a Parallel DSP Scheme..." ECOC 2024, Germany.
- Acosta-González, R., et al. "A Cooperative Multiagent Approach for Optimal Drone Deployment Using Reinforcement Learning." Wiley, 2021.