

DANIEL BARREIRO TORRES

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TECHNICAL SKILLS:

Languages: C/C++, Python, R

Hardware: ESP32, Arduino UNO, PCB design, Function Generator

Tools: Oscilloscope, Logic Analyzer, Git, AutoCAD, FPGA fundamentals (Verilog concepts, currently learning)

SUMMARY

Computer Engineering undergraduate with hands-on experience in embedded systems, PCB design, and circuit validation. Interested in hardware development, FPGA, and real-world engineering environments

EXPERIENCE & PROJECTS

RLC Oscillator & Signal Analysis Project

Feb 2026 - Present

- Tuned system parameters to approach optimal damping β factor for sustained oscillations, targeting integration with op-amp-based oscillator design
- Modeled and simulated initial under-damped RLC circuit with Python (NumPy, Matplotlib)
- Captured waveforms with an oscilloscope to compare it with the ideal model created in Python

Embedded Irrigation System

Jan 2026 - Present

- Engineered an embedded automatic irrigation system using Arduino UNO
- Developed custom circuit board and performed manual assembly, wiring, and system integration
- Implemented interrupt-driven control logic for real-time system response
- Developed PCB and Gerber File for project proposal available on my [Github](#)

Programming Team Leader - NASA Space Grant Puerto Rico

Aug 2025 - Feb 2026

- Spearheaded a NASA rover initiative using systems engineering principles
- Designed project lifecycle plan covering architecture, development stages, and validation strategy
- Built and tested a prototype rover ([Eugene 1.0](#)) for validation

Autonomous Vehicle Competition - Collins Aerospace RTX

Oct 2024 - May 2025

- Participated in the development and design of a drone for a RTX sponsored competition
 - Hands on milling machine experience, developing threads for drone spacers
 - Wired the power distribution and programmed a MCU to deliver payload
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EDUCATION

BS in Computer Engineering - Inter American University of Puerto Rico

Jan 2024 - May 2028

- Minor: Aerospace Engineering
 - Relevant courses: Programming (C++), Aerospace with PCB design, Circuit Analysis, Logic Circuits, Microcontrollers
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VOLUNTEERING

Machine Learning Teaching Assistant - University of Puerto Rico Mayagüez

Nov 2024

- Assisted in training sessions led by MIT graduate students
 - Delivered Python-based machine learning workshops aimed at HS students
 - Promoted early interest in computer science and engineering careers for K-12 students
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CERTIFICATIONS

Jan 2026

FAA Part 107 Remote Pilot Certification

- Certified by the FAA to fly drones commercially