

Emilio Garcia Rabell

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Education

Bachelor of Science, Computer Engineering
Rochester Institute of Technology

Expected: May 2027
GPA: 3.3

Skills

Programming Languages: Python, C++, C, Java, SQL, TypeScript.

Technical Skills: Flask, Git, Linux, CI/CD, LLM integration.

Experience

OpenCTF Rochester, N.Y — *Co-founder & Software Engineer* *May 2026 - Present*

- Co-founded an open-source STEM education platform that helps professors quickly set up engaging challenges related to their coursework for students to compete and solve.
- Engineered a lightweight backend REST API utilizing Bun and Hono to maximize request processing speeds.

RIT - DIRS LAB Rochester, N.Y — *Research Assistant & Software Engineer* *May 2026 - Present*

- Optimized low-level C++ networking logic and infrastructure for a spectral goniometer system on Linux, deploying Docker to upgrade TCP/IP streams, eliminate software vulnerabilities, and reliably automate precise measurements.

WHOOOP Boston, M.A — *Manufacturing Test Engineer Co-op* *July 2025 - December 2025*

- Engineered a full-stack web application (Flask + React) creating a RAG system with LLMs to parse manufacturing data and recommend error root causes, accelerating failure analysis throughput by 60%.
- Automated manufacturing failure identification by building Python diagnostic scripts integrated into the CI pipeline, bridging firmware and quality data to accelerate cross-functional debugging.

SharkNinja Needham, M.A — *Product Test Engineer Co-op* *June 2024 - December 2024*

- Engineered embedded control software for custom hardware validation rigs, interfacing Arduino and Raspberry Pi microcontrollers with sensor networks to automate real-world environment simulations.
- Programmed data acquisition pipelines in C++ and Python to ingest and analyze multi-sensor telemetry data (force, temperature, acceleration), streamlining hardware performance validation.

Novatec Group Leon, G.T.O — *Software Engineer Intern* *May 2023 - August 2023*

- Engineered a real-time data ingestion system in Java to monitor 30 industrial machines simultaneously, processing 5,000+ parameters per machine to fully automate manual status checks.

Projects

32-Bit MIPS Processor *Tools Used: VHDL, Verilog, Vivado, MIPS, ModelSim*

- Designed and implemented a 5-stage pipelined 32-bit MIPS processor in VHDL, deployed on a Basys3 FPGA. Used Vivado and ModelSim for simulation, verification, and synthesis.

NXP Cup Car *Tools Used: MSPM0, C*

- Engineered autonomous control software in C for an MSPM0 microcontroller, processing 1D line-scan telemetry to output precise steering commands; drove a 2nd-place finish with a 26.175s lap time.

Peru 2026 Candidate Tracker App - informate.pe *Tools Used: Python, Flask, React, Google Cloud*

- Built a Flask/React web app that automates candidate profiling using LLMs to scrape and structure biographical data from a single name input, while running background scripts to track live social media sentiment.

Leadership

Bernard Kozel Startup Program at RIT — *Team Leader* *2026 - 2026*

- Co-lead a team of 5 students to develop a complete business model for OpenCTF, translating 100+ customer discovery interviews into technical requirements, as well as supporting redefinition of the business model.

SHPE at RIT Eboard Member — *Freshman Rep/Treasurer/Academic Director* *2022 - 2025*

- Supported event planning focused on professionalism and culture, serving 20 to 50 students.
- Raised +\$15,000 dollars a year to support attendance of +10 members to the SHPE national conference.