# Benjamin LaGreca

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**Objective: Get a computer, or software engineering Co-op for the summer of 2024.**

## Education and Academics

### Rochester Institute of Technology — Graduation: May 2025

Computer Engineering, Masters & Bachelor of Science (Dual degree Masters/Bachelors program), GPA: 3.7

## Skills

- C/C++, Python, VHDL, and Dart/Flutter programming
- Linux and Linux tools including git, Vim, gcc, gdb, valgrind, make, bash, etc
- Computer Networking and Linux Socket Programming
- Soldering, Crimping, and making wire harnesses & connectors for various applications

## Projects

### Nintendo 64 Controller Adapter

Used an Arduino Uno to interface with and recieve data from a Nintendo 64 controller, which sent that data to a Arduino Pro-Micro over I2C. The Pro-micro emulated a generic gamepad over USB. Requried understanding of the communication protocol, and deep understanding of the Arduino's I/O system due to timing constraints.

### Python Biamp Network Discovery Tool

Wrote a Python program that discovers devices from the Tesira product line. The program sends a packet to a multicast address that Tesira devices listened to, and devices responded with relevant info. The program then could request more data from each device through a proprietary protocol. Displays data obtained in a PyQt5 generated GUI. Required low level networking, and a strong understanding of socket programming.

## Experience

### L3Harris Systems/Software Engineering Co-op (May - August 2023)

- Implemented and helped design a protocol for a tactical router and aided in the patent filing process.
- Designed and implemented Linux socket code for a new tactical router.

### Biamp Systems Firmware Engineering Co-op (May - December 2022)

- Implemented a C++ interface to work with PTP4L, a terminal based PTP (Precision time protocol) management client for Linux.
- Developed a Python program using PyQt5 GUI framework to discover the company's products on selected subnets.

### TA for Assembly and Embedded programming (2022-2023)

- Help students with various ARM assembly labs ranging from initializing a UART drivers on the KL46 chip to implementing circular FIFO queues.
- Requires strong debugging abilities, and a thorough understanding of course material

### MAHLE Electrical Component Engineer Internship (Summer 2021)

- Performed a warranty analysis process on return parts including logging, testing, and documenting results.
- Streamlined warranty logging process with Excel VBA scripting.
- Constructed various adapters, wire harnesses, and actuator drivers for testing and control.

### FIRST Robotics FRC team 1507 (2017-2020)

- Lead Programmer for FRC team 1507 The Warlocks
- Lead group of 5+ student programmers to program a large robot in C++ to preform various autonomous and human driven tasks.