Ozayr Raazi

ozayr.cc | oraazi@uwaterloo.ca | 306-220-0713 | LinkedIn | GitHub

Seeking a 4-month co-op starting in May 2024

Education

University of Waterloo Sept. 2022 – April 2027
Honours Computer Engineering *Waterloo, ON*

Skills

Languages: Python, C, C++, VHDL, Bash
Technologies: Git, Arduino, Logisim, KiCAD, Docker, Jenkins, Coverity, Quartus Prime, Linux, macOS, Windows
Networking Protocols: Segment-Routing, MPLS, IS-IS, IP, BGP, L2VPN

Experience

Ciena Sept. 2023 – Dec. 2023
Embedded Software Engineer (Co-op) *Ottawa, ON*

- Accelerated iteration and testing of a Segment-Routing module by developing an **event-based** client for simple user interfacing and by configuring CMAKE to enable independent compilation
- Improved error-detection of a TCP-transport library by creating **C++ GoogleTest** unit tests, allowing for send and receive functionalities to be tested concurrently using **multi-threading**
- Increased thread safety of **C code** and protected internal data structures by converting APIs to signal-based

Dell Technologies Jan. 2023 – April 2023
Software Engineer (Co-op) *Ottawa, ON*

- Enhanced security of a PCIe card by implementing Trusted Boot features such as allowing binary signing without access to private RSA keys
- Improved testing capabilities by increasing the number of automated tests running in **Docker** containers, creating new **Robot Framework** software robots
- Boosted software security by enabling fast discovery of potential vulnerabilities by creating **Jenkins** CI pipelines to run code analysis using **Coverity**

Waterloo Rocketry Sept. 2022 – Present
Software/Electrical Member → Software Lead *Waterloo, ON*

- Contributed to a team of 60+ students for the annual development and launch of a rocket to 30,000 ft
- Facilitated development by onboarding new members, breaking down projects into individual issues, creating and maintaining timelines, supporting developers, and reporting progress to team leads
- Augmented data collection capabilities for engine tests and added support for thermocouples by creating electrical schematics and designing PCBs using **KiCAD**
- Optimized Kalman filter for estimating rocket position during flight by developing **C code** to convert coordinates between reference frames using rotation matrices

Projects

8-Bit CPU | *Logisim, Assembly, Python* Nov. 2023 – Dec. 2023

- Designed and simulated a simple CPU with an 8-bit data bus, 4 registers, a 7-function **ALU**, and a 256-byte **RAM** block, built from the ground up with **logic gates** following a Udemy course
- Created a custom **instruction set** with 34 instructions, implemented a 6-cycle fetch and execute process in the CPU's control section, and created an assembly language based on the instruction set
- Wrote a Python script to convert **assembly code** into hexadecimal to load and run on the CPU, successfully calculating and storing the result of 5×5 in 16 instructions

Omnibus - Waterloo Rocketry | *Python, PyQtGraph, Subprocess* Jan. 2023 – May 2023

- Reduced startup time by **67%** by creating a launcher to automatically start all required processes in the background based on user input and ensure clean exiting
- Redesigned a dashboard that displays sensor data, enhancing navigation and configuration ease-of-use, by rewriting the code using **PyQtGraph** and the **QGraphicsView** framework