OZAYR RAAZI

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EXPERIENCE

Ciena   Sept. 2023 – Dec. 2023
Embedded Software Engineer (Co-op)   *Ottawa, ON*
- Increased thread safety of code and protected internal data structures by converting APIs to signal-based
- Improved error-detection of a TCP-transport library by creating GoogleTest unit tests, allowing for send and receive functionalities to be tested concurrently using multi-threading
- Enabled rapid iteration/testing for a Segment-Routing module by pulling it out of the main build, mocking dependencies and configuring CMAKE to allow for independent compilation
- Debugged crashes by configuring and testing various networking protocols on simulators and hardware

Waterloo Rocketry   Sept. 2022 – Present
Software/Electrical Member → Software Lead   *Waterloo, ON*
- Contributed to a team of 60+ people for the annual development and launch of a rocket to 30,000 ft
- Increased organization in the Software subsystem by creating a GitHub Project board for issue tracking and by adding branch naming conventions, PR templates and repository Codeowners
- 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

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
- Eliminated the need for physical boards for initial firmware testing by configuring an ARM emulator
- 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

PROJECTS

Omnibus - Waterloo Rocketry | *Python, PyQtGraph, Subprocess*   Jan. 2023 – May 2023
- Redesigned the dashboard that displays sensor data, enhancing navigation and configuration ease-of-use, by rewriting the code using the QGraphicsView framework and PyQtGraph
- 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

Sand Crab | *Arduino, C++, 3D Printing*   Sept. 2021 – June 2022
- Designed and built a remote-controlled car with a 3D-printed claw for transporting small objects
- Programmed an Arduino board to control a DC motor (for forward/back movement) and 4 servo motors (for turning and claw control)
- Programmed a second Arduino board to communicate with the first using nRF24L01 wireless communication modules (over 2.4Ghz radio) and act as a remote control

TECHNICAL SKILLS

Languages: Python, C, C++, VHDL, Bash, Groovy
Developer Tools: Git, Arduino, KiCAD, Coverity, Jenkins, Docker, Gerrit, qTest, Robot Framework, GDB
Networking Protocols: Segment-Routing, MPLS, IS-IS, IP, BGP, L2VPN

EDUCATION

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