PATRICIA LIU

✉ p99liu@uwaterloo.ca · 🖥 in/patricia-liu-a4589b153/ · 🐙 PatLiu1168 · 🖥 patliu1168.github.io

SKILLS

- **Programming Languages:** C/C++, Bash, Python, Matlab, HTML/CSS/JavaScript
- **Operating Systems, Middleware:** Linux OS, OSX, QNX OS, Robotic Operating System(ROS2), Windows
- **Software Tools:** Eclipse, Git, Svn, Docker, Latex, Apple XCode, Microsoft Visual Studio Code
- **Hardware Tools:** Raspberry PI 4
- Excellent self-motivation demonstrated by developing ROS2 interfaces remotely.
- Strong leadership, teamwork, and communication skills gained from scrum meeting discussions, presentations, and coaching.

WORK EXPERIENCE

Software Development Student for Self Driving Car Sensor Technology   **Ottawa, ON**
Blackberry QNX   January 2021-April 2021

- Utilized C++ to develop a ROS2 interface between the kvaser driver and ROS2 stack, simultaneously gaining exposure to the canbus and kvaser devices.
- Collaborated in a team with two other members to port ROS2 rolling and AutowareAuto to QNX OS.
- Facilitated software compilation and maintenance of vendor packages by converting the build system from Make to CMake.
- Integrated the drive by wire system of a Lincoln Mkz to the AutowareAuto stack; created a ROS2 node that allows the stack to interact with vehicle pilot software through message passing.
- Developed a deeper understanding of the QNX file-system, sensor drivers, RPI4, and iso image creation.

Core OS Test Team: Kernel Regression Automation Student   **Ottawa, ON**
Blackberry QNX   June 2020-August 2020

- Utilized C to design and implement test cases that verify the thread-safe and signal handler safe capabilities of libc API in the QNX Operating System.
- Communicated effectively with team members to devise a template for testing API safety in multi-threaded environments, consequently improving understanding of threads and processes.
- Developed a basic understanding of message passing between server and clients in a micro-kernel.
- Learned async-signal and thread safety concepts, demonstrating excellent diligence and a desire to learn.

Coach/Summer Camp Counselor   **Ottawa, ON**
Soong Badminton Academy   October 2017-August 2019

- Taught correct badminton techniques and organized activities for the children to apply the skills they've learned, attaining great communication and observation skills.
- Managed a team of 10 counselors and volunteers to ensure the safety and satisfaction of campers, therefore demonstrating excellent teamwork skills.

RELEVANT PROJECTS/EXPERIENCE

Personal Projects   **September 2016 - present**

- Used Javascript to create a discord bot that takes user input and searches the web for corresponding images of cats, thus helping cat lovers find their ideal pet.
- Used C to write a linux shell that includes commands such as pwd, history, ls, and find. The goal is to write cli commands and gain a better understanding of file system manipulation.

VEX Robotics | Bell High School Girls Team   **Ottawa, ON**
Team Leader   March 2018- February 2019

- Led a team of 4 girls to design, build, and program a VEX robot; self-taught RobotC to program the robot to move and launch balls; researched gear ratios to build an efficient dual flywheel launcher; investigated the physics of launchers to calibrate its trajectory; and designed the robot's structure.

Personal Website   **November 2019 - present**

- Applied JavaScript and HTML/CSS to design and create a website that contains a portfolio of programming skills, showcased previous C++ projects, and accessed networking and software platforms.

EDUCATION

University of Waterloo *GPA 4.0*   **Waterloo, ON**
Candidate for Bachelor of Applied Science, Computer Engineering   September 2019 - April 2024 (expected)
GPA: 94.09%
Interesting Courses: Systems Programming and Concurrency, Digital Computers, Algorithms and Data Structures