Reese Critchlow

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EDUCATION

University of British Columbia   September 2020 – December 2025 (expected)
Bachelor of Applied Science in Engineering Physics, GPA: 4.0   Vancouver, BC, Canada

EXPERIENCE

Research Engineer Co-op   September 2023 – Present
UBC Molecular Mechatronics Lab   Vancouver, BC
- Developing a control and feedback system for a robotic hand, using a Raspberry Pi, electrical components, and embedded systems, advancing research in soft humanoid robotics.
- Creating firmware in C, PCBs in Altium, and hardware in OnShape to develop 3 new soft force sensors to the Honda Robotics Institute, for use on the Asimo robot.
- Investigating the use of various systems for improved robotic hand grasping, using principles in control theory and machine learning.

Software Developer Co-op   May 2023 – August 2023
D-Wave Systems   Burnaby, BC
- Designed improvements to testing infrastructures in Common Lisp, Parachute, and Jenkins to increase the number of readable, comprehensive, and informative test results by over 500% to over 40 developers and physicists.
- Handled the refactoring of a component of D-Wave's solver stack in Common Lisp and Redis, reducing compute usage and increasing efficiency of systems.
- Analyzed the viability of new approaches to quantum processor development using software analysis, giving staff scientists the potential to increase chip yield.

Software Developer Co-op   January 2022 – April 2022
Brave Technology Coop   Vancouver, BC
- Built an internal web app in React to streamline product provisioning and manage IoT devices, reducing the amount of labour between time of sale and order delivery.
- Constructed REST APIs in Node.js/Express.js to integrate services such as AWS, Twilio, Particle IoT, and ClickUp, allowing better integration with existing software systems.
- Integrated APIs with a PostgreSQL database to translate data between the company's backend and the frontend, improving data access.

PROJECTS

License Plate Identifying Robot   June 2020 – Present
- Constructed control software in Python and ROS for a simulated robot in a Gazebo environment.
- Implemented a neural network in TensorFlow to classify the driving state of on-robot camera images in order to navigate a road network, as well as a second network to recognize characters from images of car license plates.
- Identified environmental features and reduced dimensionality of images using OpenCV and computer vision techniques to improve accuracy and decrease data input to neural networks.

VOLUNTEERING AND COMMUNITY INVOLVEMENT

Club Lead   September 2023 – Present
UBC Nordic Ski Team   Vancouver, BC
- Managing the logistics, training plan, coaching, finances, fundraising and team dynamics of a competitive Nordic ski team with 34 rostered athletes.
- Working to foster a team environment which values equity, diversity, and inclusion, as well as competitive performance, which has led to roster growth of over 60%.
- Coordinating the logistics for training camps and race trips for all club athletes, allowing both novice skiers to develop racing skills at local races and seasoned skiers to compete at a national collegiate level.

TECHNICAL SKILLS

Languages: Python, Common Lisp, Java, Javascript, C++, C, HTML, CSS
Frameworks & Libraries: React, Node.js, Parachute, Express.js, REST APIs
Developer Tools: Git, Emacs, Linux, Jenkins, Atlassian Suite
Miscellaneous: Embedded Systems, Redis, Altium, OnShape, ROS, Raspberry Pi, Twilio