PHOEBE LUO

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SKILLS

Languages: C++, C, Java, Python, JS, Jquery

Technologies: AutoCAD, AutoDesk Inventor, Solidworks, Arduino, Git, GitHub, Linux OS, ROS

PROJECTS

Braille-iant | *C++, CAD, 3-D Printing* May 2021

- Used C++ and the Arduino IDE to program stepper and servo motors to take input from the serial port and convert it into desired movements
- Designed the paper piercing mechanism using AutoCAD Inventor and sliced CAD models in Cura for 3-D printing
- Won best hardware hack at TOHacks 2021 out of 700+ participants

Robot Arm | *Computer Vision, Control Systems, CAD* May 2021 - Present

- Designed a 5 DOF robot arm from scratch using Inventor and independently printed, assembled, and integrated it with electrical and hardware components
- Currently working on the arm software, using a Raspberry Pi to control the arm using the GPIO pins and a camera module to implement computer vision functionality

EXTRACURRICULARS

CAV Team Member | UW Alternate Fuels Team Nov 2021 - Present

- Learning ROS, MATLAB, and Simulink to help the Connected Autonomous Vehicle (CAV) team develop a hybrid semi-autonomous car for the EcoCar 4 Challenge
- Worked with the Linux OS to complete ROS training workshops to gain familiarity with ROS packages, topics, publishers, and subscribers

Lead Programmer | *FIRST Robotics Competition Team 1241* Nov 2018 - April 2021

- Programmed autonomous routines and PID control systems in Java, contributing to the team's placement as the highest ranked Canadian team in our division at the 2019 World Championship.
- Implemented state machine architecture, tuned a computer vision pipeline, and interfaced it with robot movements to score points with an accuracy of 90% in 2020
- Worked with CAD software to design the robot drivetrain and gearboxes

Co-president | *Erindale S.S DECA* Sept 2018 - June 2021

- Planned and taught the first-ever training program at the school, leading to a 150% increase in participants qualifying for the provincial competition
- Led a group of 8 other individuals to plan a professional development conference that had over 60 attendees.

AWARDS

Hack the North 2021 Finalist Sept 2021

- Used CAD software and C++ to create a robot that automated the dumpling making process
- Was selected as 1 of 17 finalists out of 477 teams at Hack the North, Canada's biggest hackathon

Schulich Leader Scholarship May 2021

- Offered Canada's most coveted undergraduate STEM scholarship awarded for exceptional leadership and entrepreneurship, worth $100K, for McGill Software Engineering (co-op)

DECA ICDC Champion - Third Place April 2021

- Awarded for exceptional performance at the international level of DECA, a case study competition
- Won 3rd place out of 200+ top competitors around the world

EDUCATION

University of Waterloo

Candidate of Mechatronics Engineering, BASc
Sept 2021 - April 2026 (expected)

INTERESTS

3-D Printing
Control Systems
Mobile Robots
Computer Vision
Graphic Design (Photoshop)
Drone Flying