# DAWSON HORVATH

# **WORK EXPERIENCE**

AbCellera Biologics Inc

Mechatronics Engineer

**EDUCATION** 

**=** 2018 - 2022

GPA: 3.7/4.0

GPA: 4.0/4.0

Python

MATLAB

pyTorch

openCV

Hardware

SolidWorks

Digital logic

PID control

Hands-on

Machining

3D printing

Design Web Design

HTML

Water Jet-cutting

CSS

Clean room experience

Hands on shop experience

Engine and small engine repair

Laser-cutting

PhotoShop

SKILLS

Development

B.ASc., Engineering Physics University of British Columbia

**Engineering Transfer Program** 

Thompson Rivers University

(JAVA)

Git

Linux

Circuit design/prototyping

Arduino

(c)

Gym Framework

SQLite

Prototyping

Assembly

Soldering

JavaScript )

Welding

LaTeX

(C++)

May 2020 - Current

Developing robots to push the boundaries of high-throughput single-cell screening for antibody discovery.

TRIUMF Particle Accelerator

SRF Development Intern

September 2018 - Current

- · Led the design and implementation of a UHV induction furnace, enabling doping of niobium superconductors with gas compounds and removal of hydrides. Achieved a 10x improvement in the SRF cavity quench limit.
- · Developed an advanced magnetic field controller that integrates a 3-axis fluxgate magnetometer to dynamically adjust electromagnet currents, effectively neutralizing the Earth's ambient magnetic field.
- · Contributed to the maintenance and reassembly of cryostats in ultra-clean environments (Class 1000, 100, and 10 cleanrooms), ensuring optimal performance for precision applications.

Streamline Transportation Technology

**Fullstack Developer** 

**April** 2018 - September 2018

- Designed and implemented a full-stack web application using Node.js and AngularJS, automating previously manual workflows and significantly improving operational efficiency.
- Enhanced the QA automation framework by completing Protractor scripts and extending helper classes, leading to more robust and efficient automated testing processes.
- · Collaborated closely with team members to identify and resolve technical challenges in the company's flagship product, ensuring smoother performance and higher reliability.

### **PROJECTS**

1950 Austin A-40 Restoration

Personal

2019-Present

- · Overhauling the vehicle with ongoing welding, fabrication, and engine repairs to restore full functionality.
- Utilizing mechanical, electrical, and bodywork expertise to ensure a successful restoration.
- · Replacing outdated parts with modern components, including upgrades to suspension, braking systems, and electrical systems for enhanced performance and safety, while maintaining the car's classic aesthetic.

Open Sim2Real Project

Open Source

2022 - Details

- · Developed an open-source platform for Sim2Real research featuring a low-cost single-leg physical robot and corresponding
- Enabled training in both real and simulated environments using the gym framework.
- · Provided low-level drivers for the physical robot, gym-os2r simulation, and a real-time backend linking simulation and real
- · Made Sim2Real research more accessible for research groups transitioning from simulation to real-world applications.

**Robot Design Competition** 

School

**2019 - Details** 

- · Worked with a small team to engineer a fully autonomous robot.
- Implemented mechanical and electrical design to develop reliable instruments and robot kinematics.
- Followed a rigorous review process with extensive engineering communication expectations.

Simulated Gazebo Robot

School

**=** 2019 - **⊕** Details

- · Simulated an autonomous robot in a Gazebo environment.
- · Controlled the robot using machine learning and computer vision techniques to complete a set of tasks.

DIY Electric Skateboard

Personal

**■** 2017 - **●** Details

- · Designed and prototyped an electric skateboard capable of commuting 20+ km daily at speeds exceeding 30 km/h.
- Engineered a robust powertrain system with optimized battery efficiency for extended reliability.

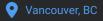
DIY 3D Printer

Personal

**2017 -**  Details

- · Designed and built a Prusa i3 3D printer clone from scratch, reducing production costs to under 300 CAD.
- Conducted extensive research on modern 3D printing technologies to optimize cost-efficiency and reliability.

## CONTACT ME





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