BEN ROBERTS

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Education

University of Victoria — **Sep. 2021 – May 2026**
Bachelor of Mechanical Engineering, GPA: 3.67 / 4.0 — *Victoria, BC*

Relevant Coursework

- Mechanics of Solids
- Properties of Materials
- Engineering Drawing
- Thermodynamics
- Data Structures
- Linear Algebra
- Control Theory
- Precision Machining

Experience

BC Cancer Research, Aparicio Lab — **September 2023 – May 2024**
Mechatronics Engineer Co-op Student — *Vancouver, BC, Canada*

- Engineered a fluidics system for sequencing experiments, ensuring precise and reliable sample handling.
- Developed a MATLAB-based acquisition system to control lasers, stepper motors, cameras, and microscopes for scanning a chip containing cancer cells. Implemented precise imaging and analysis techniques for cell classification and data export, supporting cancer research at the Aparicio Lab.
- Utilized SolidWorks for 3D modeling, C++ for programming, and Python for automation and User Interface. Applied control theory for serial communication.
- Utilized 3D printing for both prototyping and manufacturing components for experimental setups.

SMcN Consulting Inc. — **January 2023 – April 2023**
Design Engineer Co-op Student — *Langford, BC, Canada*

- Enhanced Revit skills through involvement in various Boiler Plant and HVAC upgrades projects.
- Calculated airflow requirements while designing HVAC systems on multiple projects.
- Conducted multiple energy studies using the Hourly Analysis Program (HAP).

Herold Engineering LTD. — **May 2022 – Aug 2022**
Civil Engineering Co-op Student — *Nanaimo, BC, Canada*

- Used AutoCAD to create a library of drop-down pipe details.
- Created and modified spreadsheets with integrated macros for precise flow rate calculations.
- Assisted and completed multiple surveys, exporting data to create surfaces in CAD.

Projects

Autonomous Robot | *VEX Robotics, Robot C*

- Used VEX Robotics kit to build an Autonomous Robot.
- Programmed the robot using Robot C to perform various tasks autonomously.

Centrifugal Clutch | *Solidworks*

- Created a Centrifugal Clutch in Solidworks based on calculations and engineering principles.

Hooke's Law Python Analysis | *Jupyter Notebook, Python, Pandas, Matplotlib*

- Utilized Jupyter Notebook, Python, and Pandas to analyze data from a Physics Lab.
- Plotted findings using Matplotlib, providing visual representation of Hooke's Law analysis.

Custom Cover Slip Shaker and Mount | *Solidworks, C++, Python*

- Designed a custom cover slip shaker and mount using Solidworks.
- Implemented the design using 3D printing technology.
- Programmed the functionality using C++ and Python.

Technical Skills

Languages: C, C++, Java, JavaScript, Python, HTML & CSS, Matlab, Robot C, R
Frameworks and Programs: SolidWorks, AutoCAD, Revit, Simulink, Matplotlib, Jupyter Notebook, RStudio, Visual Studio Code IDE, OpenCV, Tkinter, Pandas

Awards

Maurice Summerhayes Memorial Scholarship: University of Victoria, 2021 - Present
Major W. Horan Memorial Scholarship: University of Victoria, 2021