


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

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.
- Automated an experimental setup with 3D geometry to move a microscope along a chip, maintaining consistent cell distance. Implemented image processing for individual cell isolation and analysis.
- Utilized SolidWorks for 3D modeling, C++ for programming, Python for automation, and applied control theory for serial communication.
- Utilized 3D printing for 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 duct sizes 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.

Room Summary Macro Spreadsheet | Excel, VBA

- Engineered a versatile Energy Modeling Spreadsheet with macros for precise calculation of airflow requirements and heat transfer data in buildings.
- Designed to adapt to specific constants, ensuring applicability across diverse municipalities in British Columbia.

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, AutoDesk ReCap, Revit, AutoDesk, Hourly Analysis Program, Matplotlib, Jupyter Notebook, RStudio, Visual Studio Code IDE, Microsoft Office

Awards

Maurice Summerhayes Memorial Scholarship: University of Victoria, 2021 - Present

Major W. Horan Memorial Scholarship: University of Victoria, 2021