

SHELBY MIOR

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Education

Western University

May 2024

Bachelor of Engineering Science, Mechanical Engineering

London, ON

- Andrea Bailey Memorial Award (2020, 2021, 2023)
- Natural Sciences and Engineering Research Council of Canada Award (2021)

Experience

Lux Aerobot

May 2023 – August 2023

Mechatronics Intern

Montreal, QC

- Designed mechanical components and assemblies for High Altitude Platform (HAP) mechatronics subsystems using Fusion 360. Manufactured and assembled gondola and enclosure components.
- Developed comprehensive test plans and performed data collection, analysis, and result interpretation. Refined prototypes and contributed to improved reliability of the HAP system.
- Documented test procedures, test outcomes, assembly instructions, and design specifications to streamline processes. Maintained records for future analyses and system improvements.

SpaceRyde

May 2022 – February 2023

Mechatronics Intern

Vaughan, ON

- Pioneered and led a high-altitude balloon (HAB) project to test hardware and conduct research in the stratosphere. Prepared and presented technical documentation that analyzed HAB flight data.
- Assembled, tested, and debugged circuit boards using various tools, such as oscilloscopes, electronic loads, and multimeters. Designed a circuit board in CircuitStudio that allowed electronics to seamlessly interface with the flight computer.
- Integrated electronics in the full-scale rocket structure by assembling and installing cable harnesses. Tested and validated electrical connections and performance of the rocket's sensors.

The Dynamic and Sensing Systems Lab at Western University

May 2021 – March 2022

Research Assistant

London, ON

- Developed mathematical models to predict the vibration characteristics of an electromechanical gyroscope used in high-performance inertial reference units, such as in NASA's Cassini spacecraft.
- Created MATLAB scripts to verify the mathematical models and correlate experimental results to theoretical results.

Projects

Western Engineering Rocketry Airbrakes System | SolidWorks, CFD, FEA

August 2023 – Present

- Collaborated with a team of 4 senior engineering students to develop an airbrake system that will help the rocket achieve a target altitude of 10,000 feet at the 2024 Spaceport America Cup.
- Used CAD tools and simulation techniques, such as FEA and CFD, to ensure optimal performance and reliability.

Semi-Autonomous Scavenger Robot | C++, SolidWorks, 3D Printing

December 2023

- Collaborated with a team to design and develop a remote-controlled robot capable of autonomously sorting and collecting high-value objects. The robot had an ESP32 microcontroller, a differential drive system, a waterwheel collection mechanism, and a colour sensor.
- Designed the virtual prototype in SolidWorks and 3D printed various components. Programmed components on the robot using the Arduino environment.

Leadership / Extracurricular

Western Engineering Build Team

March 2023 – Present

Chief Financial Officer

- Managed budgets and oversaw the allocation of funds for Orientation Week engineering build projects, including a 40ft Viking ship. Collaborated with other executives to align budgetary considerations with technical requirements to maximize project outcomes while controlling expenses.
- Spearheaded initiatives that resulted in a 54 percent increase in funds for the subsequent academic year.

Technical Skills

Technologies: SolidWorks, Fusion 360, Ansys, Altium, CircuitStudio, LabVIEW, Microsoft Office

Languages: MATLAB, Java, Python, C++, G-Code, HTML, CSS

Certifications: CSWA – Simulation (issued by SolidWorks Authorized Training Centre)