Adam Hazenberg

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EDUCATION

Queen's University — B.Eng. *Mechatronics and Robotics Engineering*

September 2021 – April 2025

EMPLOYMENT/EXPERIENCE

HEBI Robotics — *Hardware Intern*

May 2024 – August 2024

- Main project was the design and programming of a magnetic crawler called Magnus. This is a novel mobile robot engineered to climb large ferromagnetic structures with versatility, operating autonomously or via remote control depending on structural complexity. The robot features a 5-DOF arm, symmetric around the elbow/middle joint, and uses actuated magnetic pads at both its base and end effector to adhere to surfaces.
- Performed chassis design iteration on 8 DOF mobile platform Tready to accommodate updated battery hardware, add new electronics, and make the robot IP68
- Created mechanical drawings for high-cost aluminum chassis parts to be sent to the manufacturer. Incorporated GD&T standards
- Wrote motor and actuator environment testing/benchmarking scripts in MATLAB
- Updated HRDF (HEBI Robot Configuration Format) database for new T25 Actuators

Skygauge Robotics — *Product Team Intern*

May 2023 – August 2023

- Aided the production of safe, reliable drone systems by designing and performing manufacturing and testing methods to ensure their successful maiden flights. This involved assembling, configuring, and certifying the entirety of the drone's hardware and software in accordance with company standards to ensure the quality of the final product.
- Performed diagnostics on faulty hardware such as mechanical components as well as custom PCBs to allow operation and/or

SKILLS

- Python, C, C++, MATLAB
- ROS2
- Linux/Ubuntu command line
- CMake
- Electronics/PCB knowledge
- 3D printing and CNC routing
- Fusion 360, SOLIDWORKS
- General Robotics (wide range of sensors and actuators)
- Customer service

CERTIFICATIONS AND AWARDS

- Queen's University Excellence Scholarship (2021)
- Alexander Rutherford Scholarship (2021)
- Honours with Distinction, Jasper Place High School (2019 & 2020)
- Bronze Cross (2017) (Renewed 2019)
- CPR C and AED (2017) (Renewed 2019)
- Amenity Attendant Training, City of Edmonton (2017)

suggest design improvements to boost future reliability.
- Investigated deviations in drone performance by isolating possible contributing factors to discover correlations that could be used to improve drone design.

Autodrive — *Perception Team Member*

October 2022 – Present

- Collaborated with a team of students to program, test, and integrate advanced object detection and classification computer vision systems. These systems made use of OpenCV, TensorFlow, and YOLO-trained models.

Confined Space Robotics — *Assistant Developer*

April 2022 – August 2022

- Contributed to the development of various robotic systems in all software and hardware aspects, involving physical/mechanical robot design via modelling software, constructing robots using 3D printing technology, editing control programs, fixing damaged electrical components, and performing thorough testing of various systems to provide in-depth reports
- Primarily used Python and C++; enhanced previous skills while efficiently and accurately acquiring new ones

Queen's University: Sparq Studios Makerspace — *Supervisor*

October 2021 – April 2022

- Supervised the operation of 3D printers and CNC machines in a public workshop, assisting inexperienced users
- Conducted routine maintenance and troubleshooting for various machines, compiling maintenance and malfunction reports

Home-based CNC machine shop – *Self-Employment*

June 2020 – June 2021

- Operated a successful, independent business providing custom CNC services such as routing, 3D printing, and laser engraving, attracting over 200 local customers
- Skills obtained and utilized include:
  - Advertising via Kijiji and creating a company name and logo
  - Communicating with customers in a professional manner
  - Designing simple or complex 3D models to suit customers' needs
  - Constructing and maintaining various owned machinery (3D printers, custom CNC router, laser engraver)
  - Maintaining positive customer relations by upholding proper business ethics (reliability, integrity, fairness)

EXTRACURRICULAR

- Completed SHAD Canada 2019 at Lakehead University, a 25-day pre-university program focused on STEAM (Science, Technology, Engineering, Art, Mathematics) and business/entrepreneurship
- Member of Jasper Place football team (2019)
- Volunteer for Step-Up Day Camp, City of Edmonton (2017), helping to run camps for young children.
- Completed the City of Edmonton Leader-in-Training course (2016), organizing and leading activities for the Green Shack Program and Community Centre Day camps