Bryan Heddle

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LINKS

Github, LinkedIn, My Website

SKILLS

Software: Java, Python, C++, JavaScript, React, NodeJS, Git, Arduino, Raspberry Pi, Jetson Nano, ROS2.

Mechanical: Solidworks, Structural Design and Analysis, Finite Elements Analysis

Electrical: Circuit Design and Analysis, PCB Design, Computer Design and Assembly

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EDUCATION

Sep 2022 — Dec 2027

Mechatronics and AI Systems Engineer Bachelors Dual Degree, University of Western Ontario

- Achieved Dean's Honor List (2022-2024)
- Volunteered for Western Foot Patrol
- Won Design 1050 Project Showcase
- CSWA Certified
- First Place in Western's Engineering Competition 2024 (Re-Engineering)

Coursework: Algorithms and Data Structures, Software System Design, Statistics, SolidWorks

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EXPERIENCE

Sep 2023 — Present

Lead Software Engineer, WeMars: Western's Mars Rover Team

- Developed a Python-based real-time video streaming application that sends the feed through a network to a front-end.
- Set up CANbus protocol throughout our rover to allow data to be sent through pipelines without noise interference mutating data.
- Implemented ROS2 on our rover to manage data from multiple sensors, significantly enhancing its real-time processing capabilities.
- Integrating LiDAR and camera systems with the Jetson Nano to provide comprehensive visual coverage for my rover.
- Developing a computer vision model using depth cameras and LiDAR for future integration into autonomous navigation systems.

Sep 2023 — Present

Controls Engineer, Western Aero Design

- Developed a database for storing sensor data and integrated a Python back end for sending data, and a React.js front end for displaying the data, utilizing Docker I ensured smooth operation for users.
- Collaborated on the design of a new PCB using Fusion360, focusing on enhancing aircraft control and data collection efficiency

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PERSONAL PROJECTS

Jun 2023 — Aug 2023

Robotic Arm Project

- Engineered robotic arm components using SolidWorks, optimizing designs for 3D printing and subsequent assembly
- Developed C++ servo scripts within the Arduino IDE to parse incoming data and control the motors of the robotic arm
- Designed a C# Windows application to facilitate data transmission to an Arduino UNO via Bluetooth, prioritizing efficiency and practicality
- Configured an electrical circuit connecting an Arduino UNO with servo and stepper motor drivers, and a Bluetooth chip, ensuring stable current and regulated voltage

Jun 2024 — Sep 2024

YOLOV3 Research Implementation

- Implemented Computer vision model training methods based off of YOLOv3 research paper
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