

Education

B.Eng, Computer Engineering @ Ryerson University

Expected April 2024

- Deans list 2020 - 2021, 3.8/4.0 GPA
- Recipient of **2021 and 2022** Deans Research Fund Undergraduate Research Opportunity (\$20,000 funding)

Skills

Languages: C, C++, Python, JavaScript, Java, SQL, HTML, CSS, MATLAB

Applications and Frameworks: TensorFlow, Keras, OpenCV, SciKit Learn, Numpy, ROS, Linux, React

Experience

Research Intern - NSERC Responsible Artificial Intelligence Lab

Sept 2022 - Present

- Working on reducing gender bias in information retrieval tasks

Software Developer - Ryerson Robotics, Mechatronics, and Automation Lab

Jan 2021 - Aug 2022

- Designed current, velocity and position control programs for robotic motors using C++ / ROS in Linux
- Wrote multiple algorithms for image processing of a dataset to obtain a mathematical representation of image data with ~97% accuracy
- Developed a CNN + LSTM neural network architecture for real time pose estimation of a robotic catheter using video feed
- Implemented data collection process and neural network architecture for detecting forces on a robotic catheter during surgery, with a ~0.1N mean average error
- Lead author on force estimation research paper [\[LINK\]](#), presented at CSME Congress 2022

Co-Founder - PERCare.ca

June 2020 - Sept 2020

- Collaborated with team members and physicians to develop 40+ post care guidelines for patients that have been discharged from the E.R.
- Implemented navigation API using JavaScript, HTML/CSS and SQL to provide transportation options for over 35 hospitals.
- Chosen for The Forge Startup Incubator @ McMaster University from a group of 100+ applicants

Projects

flightmap.live

- Designed a real-time 3D flight tracking website with support for over 4000 airports. Uses WebGL, JavaScript, HTML/CSS and Python

Vehicle Restoration

- Restored a \$500 1984 BMW E30 with 500k km. Installed new timing belt, overhauled cooling system, installed lowering springs, installed shifter bushings and restored paint job.
- Currently restoring an 2003 BMW E46 with 300k km. Installed new front control arms, tie-rods and sway bar. Overhauled cooling system, installed new window motors, new brakes/rotors, new bumper and fixed wiring issues with the ECU.

AI Projects

- Developed a Convolutional Neural Network using TensorFlow and Python to recognize a set of 42 different traffic signs in various settings with ~95% accuracy
- Designed AI that analyzes a users query and returns the appropriate answer from a corpus of Wikipedia pages via tf-idf
- Utilized a K-Nearest-Neighbours classifier to determine a users purchase intent when online shopping

Automated cable tester - EcoCar Club

- Designed and soldered a PCB utilizing an AT-MEGA328p micro-controller to test integrity of 8 pin cable connections
- Wrote software in C++ to automate testing and display results on a LCD screen via I2C communication protocol