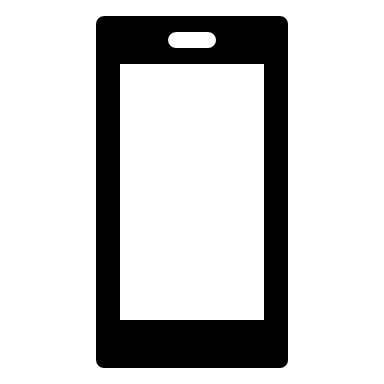
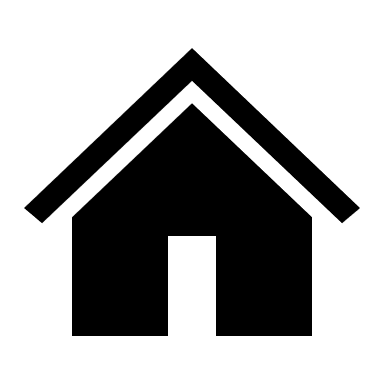
Joey Yang

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Profile Summary

Diligent and results-driven Mechatronics Engineering student possessing a well-rounded software development skillset forged through industry achievements, open-source projects, and academic excellence. Passionate about tackling challenges on the forefront of Robotics, with a specialty in building innovative software solutions that bridge robotic systems with human users. Critical thinker able to adapt and lead in fast-paced work environments.

Education

B.Eng., Mechatronics Engineering (Co-op) Level 5 Expected Completion April 2021

McMaster University, Dean’s Honour List, 3.7 GPA

Undergraduate Teaching Assistant

Relevant Coursework

Robotics, Software Development, Data Structures & Algorithms, General & Real-Time OS, Embedded Systems Design, Predictive & Intelligent Control (Kalman Filters, Particle Filters, SLAM), Networks and Security.

Employment

Software Consultant September 2019 to Present

Freelance

* Building software solutions and automated tools for start-ups and small businesses ranging from mobile apps to purchase order generators.
* Interfacing with clients regularly to understand product needs, provide technical guidance, and convey results.

Software Developer Intern June 2020 to September 2020

Clearpath Robotics, Inc., Research Solutions

* Led backend development of a web-based GPS navigation tool that allows users to interface with outdoor robots (ROS) and issue missions remotely via satellite map.
* Designed frontend UI components that drew the appeal of sales and engineering managers.
* Setup test plans and physically tested GPS navigation package on Clearpath Robotics’s Husky UGV.

Simulation Engineer Intern May 2018 to August 2019

Clearpath Robotics, Inc., OTTO Motors

* Leveraged discrete-event and physics-based simulation software to develop large-scale robotic material transport solutions, including a simulation model that played a major role in winning a $8M USD, 100+ robot fleet size deal.
* Extended proprietary simulation software library with functionalities for tracking robot and mission KPIs/metrics.
* Developed automation and data visualization tools to pipeline inputs into and parse outputs out of simulations.
* Performed multiple regression on real robot battery data and improved simulation model accuracy from 57-95%.
* Collaborated with PMs to identify requirement specifications, plan timelines, and present deliverables.

Autonomous Robot Lawn Mower (Research Project) May 2020 to Present

* Engineering an autonomous robot able to mow lawns safely and efficiently.
* Implementing sensor fusion of IMU and UWB data to accurately localize robot position in outdoor environments.

BNO055 Linux Hardware Driver (ROS Package) July 2020 to September 2020

* Developed an open-source software package that interfaces Adafruit’s BNO055 9-DoF sensor with any Linux system over I2C and publishes data to ROS.

Guardian Surveillance (Intelligent Surveillance System) April 2020 to July 2020

* Architected a lightweight, affordable, and smart surveillance system that leverages OpenCV’s Haar feature-based cascade classifiers on live camera feeds to detect intruders, and ROS to alert users’ IoT devices via text and email.

Personal Projects

Languages and Technologies

Robotics: ROS, OpenCV, Simio, Simulink

Embedded Systems: MCU, FPGA, Raspberry Pi, Arduino

Sensors: IMU, LiDAR, Camera, UWB

General-Purpose: C++, Python, JavaScript

Web Development: React, Express/Node, SQLite

App Development: React Native

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