Joey Yang

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Profile Summary

Diligent Software Engineer possessing a Bachelor of Engineering and 3 years of working experience in software and simulation development, with emphasis in autonomous vehicle and mobile robot technologies. Passionate about building robust end-to-end software solutions that seamlessly interface hardware systems with humans and real-world applications.

Languages and Technologies

Programming:	C++, C, Python, JavaScript, Bash	Embedded:	MCU, Raspberry Pi, Jetson, GPU, CPU
Robotics:	ROS, OpenCV, SLAM, MoveIt, Networking	Sensors:	LiDAR, Camera, IMU, GPS, UWB, Encoders, Arms
Simulation:	Gazebo, Unreal Engine, Simio	Tools:	Git, Jenkins, Confluence, JIRA, Linux

Employment

Software Developer — July 2021 to Present
Clearpath Robotics, Platform OS

- Innovate and maintain open-source and proprietary software for ROS 1 and ROS 2 mobile robotic platforms.
- Develop internal software tools and test suites to support integration, client success, and production teams.
- Execute custom software integrations of sensors, manipulators, and networking devices with robots.
- Collaborate with cross-functional engineering teams and PMs to deliver on complex engineering projects.

Software Engineer — January 2021 to June 2021
ARVI AI, Autonomous Driving

- Implemented and demoed localization, mapping, and autonomous navigation on a Polaris GEM electric vehicle.
- Developed middleware for reliable communication between hardware, software, and simulation systems.
- Wrote software drivers to integrate sensors, steering and throttle controllers with real vehicle, simulation, and ROS.

Software Developer Intern — June 2020 to September 2020
Clearpath Robotics, Platform OS

- Spearheaded Node/Express backend development of a web application that allows remote user interface with ROS robots, including manual control and sending autonomous navigation missions via satellite map.
- Built intuitive frontend components using React to enhance user interface experience with the web application.

Simulation Engineer Intern — May 2018 to August 2019
OTTO Motors, Simulation Services

- Designed and developed high-level Simio simulation models of autonomous mobile robots in customer's facilities, to conceptualize and evaluate material transport solutions.
- Extended internal simulation software library with crucial features, such as key metric trackers for robot missions.

Personal Projects

Affordable Outdoor Localization, Research Capstone — May 2020 to April 2021

- Led engineering design and implementation of an outdoor localization solution, which fuses low-cost IMU and UWB sensors using a Particle Filter in ROS to estimate robot pose.

Guardian, Intelligent Surveillance System — April 2020 to July 2020

- Architected an intelligent surveillance system on a Raspberry Pi that leverages ROS, OpenCV, and live camera data to detect intruders, and alert users via text and email.

Education

Bachelor of Engineering, Mechatronics Engineering (Co-op)
McMaster University, Dean's Honour List (3.8 GPA), Teaching Assistant