Alisha Fong

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Education

Massachusetts Institute of Technology — May 2022 | Cambridge, MA

BS in Computer Science and Electrical Engineering

Relevant Coursework: Software Construction, Data Structures and Algorithms, Machine Learning, Robotics: Science and Systems, Feedback Controls, Circuits and Electronics, IoT and Embedded System

Technical Skills

Languages and Tools: **Python, Java, C++, Swift, Go, Matlab, Git, Xcode, Linux**

Libraries/Frameworks: **ROS, OpenCV, NumPy, SciPy Matplotlib, SQLite**

Experience

MIT Driverless — Cambridge, MA

Planning Subteam Member — Sep 2020 - Present

- Researching and implementing methods of planning for multi-agent racing for Indy Autonomous and Roborace
- Generating track from given points and calculating curvatures, headings, and lateral lattice nodes from midline
- Working on obstacle avoidance planning and creating tools for visualization

Northrop Grumman Mission Systems — San Diego, CA

Software Development Intern — Jun 2020 - Aug 2020

- Worked on tactical data link simulator to improve usage and add additional functionality and practiced Agile
- Minimized error in passing data between classic platform and new UI by adding TCP/IP support using C++
- Enabled file transferring by storyboarding and building full stack of import/export tool in Go and Javascript

MIT Media Lab — Cambridge, MA

Undergraduate Researcher — Feb 2019 - Jan 2020

- Collaborated on Flow IO, an open source development platform for pneumatics and soft actuator application
- Enabled remote control by building an iOS mobile app to connect to peripheral over BLE and transmit data to control individual valves and pumps. Added BLE support in firmware using Bluefruit Arduino library
- Conducted experiments to record power, air flow and pressure of actuators for open source testing use

Projects

MIT Robotics: Science and Systems — Feb 2020 - May 2020

- Controlled robot to drive a desired distance away from walls using laser scans of environment and PD control
- Allowed robot to estimate distances away with CV using homography mapping and color segmentation
- Approximated real time position and orientation of robot whilst in motion using particle filter localization
- Created trajectories for robot using search-based planning algorithms given a map and a start and goal position

Activities and Leadership

Gordon-MIT Engineering Leadership Program — Sep 2020 - Present

- Developing leadership skills in engineering by studying theories and undertaking collaboration-related simulations

Google CSSI — Summer 2019 and 2020

- Leading a group of CSSI students in coursework as a TA and created a safe and casual educational environment
- Assisting students with career and academic preparation in computer science with personalized weekly discussions