SHANE KELLY

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shanekelly

Education

Olin College of Engineering
B.S. Robotics Engineering 2018

Cedar Park High School
High School Diploma 2014

Certificates

Udacity · Self-Driving Nanodegree 2019

Skills

LANGUAGES

C++
Python
MATLAB

MISCELLANEOUS

Linux
Git
ROS
LCM

Other Passions

Beekeeping
Biking
Table Tennis

Employment

Optimus Ride — Boston, MA
Software Engineer — Aug. 2018 to Current
Software engineer at self-driving vehicle startup working towards level 4 autonomy in geofenced environments. Work in the Perception Group with a focus on estimating and optimizing intrinsic and extrinsic parameters of sensors as well as determining vehicle kinematic parameters.

MITRE Corporation — Bedford, MA
Software Engineering Intern — May 2017 to Aug. 2017
Worked as a software engineering intern on C++ development at the intersection of cyber security and embedded systems. Work classified Secret by the US Department of Defense.

Amazon Robotics and Olin College of Engineering — Needham, MA
Student Robotics Engineering Contractor — Jan. 2017 to May 2017
Aided in development of novel solution to pick-and-place challenge in collaboration between Olin College and Amazon Robotics. Individual contributions included building ROS node in C++ to publish sensor extrinsic information of multi-sensor system.

Raytheon BBN Technologies — Cambridge, MA
Sensor Systems Intern — May 2016 to Aug. 2016
Worked as sensor systems intern doing software development in C++ for real-time embedded systems. Work classified Secret by the US Department of Defense.

Pharos Labs LLC — Boston, MA
Software Engineering Intern — May 2015 to Aug. 2015
Created applications in Python for internally-facing company research centered around medical data parsing and analysis.

Olin College of Engineering — Needham, MA
3D Printing Student Teacher — Aug. 2014 to May 2018
Employed by the college to train students to use additive manufacturing facilities. Helped to maintain and repair the fleet of on-campus 3D printers.

Research and Projects

Multi-Map Environment Exploration
Developed software for a mobile robotic platform to enable it to map its environment, simultaneously localize itself within the created map, navigate elevators by asking for human assistance, and stitch together maps connected by elevators which are represented as wormholes between map layers. Ability to map highly transparent obstacles, such as glass walls, by leveraging LiDAR-sonar sensor fusion. Written in C++ with ROS.

Autonomous Robot Racecar
Built an autonomous robot from the ground up to compete in an unmanned vehicle race. Took substantial role in all parts of the project: chassis design, electrical assembly, and software development. Was one of two software leads on the team, focused on localization and obstacle detection. Placed first out of four teams. Written in C++ with ROS.

Reinforcement Learning for Multi-Agent Behaviors
Used reinforcement learning to teach a group of robots cooperative and competitive behaviors, such as forming a line or playing tag. Created simulated environment for accelerated training of agent generations. Written in Python with ROS.

Particle Filter Localization
Localized robot vacuum cleaner platform in a previously mapped environment using custom particle filter implementation. Written in Python with ROS.

Video Game AI
Spent two semesters developing an AI to play a browser-based, 2D top-down, capture the flag style video game called TagPro. Predicted enemy behavior, abstracted continuous map space into discrete Delaunay-triangulated regions, planned with a modified version of A*, and controlled our agent using a custom implementation of an LQR controller.

Jimmy the Humanoid Robot
Collaboration between Intel and Olin College to enable a humanoid robotic platform, named Jimmy, to interact with humans. Focused on computer vision challenges, such as having Jimmy detect human faces and turn to face them while speaking, to make his interactions more human-like. Written in Python with ROS.

Human-Robot Collaboration in Industrial Settings
Year-long collaboration between Rockwell Automation and Olin College to research robot-human collaboration in industrial settings. Focused on studying core characteristics of effective human teams and prototyping wearable technologies that leverage those concepts in human-robot partnerships.