

EDUCATION

Carnegie Mellon University, Pittsburgh PA

- ❖ MSc Robotics Aug 2016- Present
- ❖ Expected Graduation May 2018
- ❖ BS Electrical and Computer Engineering, Additional Major in Robotics Aug 2012- May 2016
- ❖ Programming Languages: C, C++, ROS, Simulink, Python, MATLAB, Arduino C, Pascal, System Verilog

WORK EXPERIENCE

Research Assistant

Oct 2012- Dec 2013

Quality of Life Technology Center Personal Robotics Lab

Carnegie Mellon University

- ❖ Designed custom mounted shields for the 2D scanning Hokuyo lasers using Creo Parametric
- ❖ Developed a program using Python and the ROS Python package, for the robot, HERB, to autonomously dock and charge itself
- ❖ Calibrated 2D scanning lasers

Research Assistant and Systems Engineering Intern

May 2015- Present

Field Robotics Center

Carnegie Mellon University

- ❖ Working in collaboration with Yamaha to build and design a self-driving all terrain vehicle
- ❖ Integrated sensors such as GPS, IMU, Velodyne 64, Multisense with vehicle
- ❖ Built a ROS-CAN driver, using C++, that listened to ROS messages and published them to the CAN network and vice versa
- ❖ Conducted system characterization tests to develop the open loop model of the vehicle, then modified and tuned the control architecture of the vehicle, via Simulink to have a better response
- ❖ Debugged and tested the system extensively to identify and fix bugs especially with the drive by wire system
- ❖ Currently designing a system for terrain classification

PROJECTS

TrashBot

Jan-May 2016

- ❖ Designed and built a trash sorting robot which classified trash and sorted it into recyclable and non-recyclable bins
- ❖ Principal Power Systems Engineer and Embedded Programmer

EZ-Kart

Aug 2015 – May 2016

- ❖ Developed and constructed an autonomous cart with the aim of aiding workers in warehouses
- ❖ Located the user wearing an April tag using a vision system and maintained a set distance in front of the user as the user moved

Learning Terrain Traversability Using SVMs and CNNs

Aug 2016- Dec 2016

- ❖ Created a system to segment an image into traversable, partially traversable and non-traversable regions.
- ❖ SVM- libsvm, CNN- custom CNN with inspiration from AlexNet

Autolabelling of Outdoor Terrain Images with Roughness Metric

Aug 2016- Dec 2016

- ❖ Programmed a system which fused IMU readings with images.

RELEVANT COURSES`

- ❖ Past Courses- Embedded Control Systems, Intro to Robotics, Artificial Intelligence, Humanoid Robotics, Mobile Robot Programming, Robot Kinematic and Dynamics, Systems Engineering, Mechatronics, Computer Vision
- ❖ Current Courses- Intro to Machine Learning, Kinematics Dynamics and Controls

ACTIVITIES

- ❖ Formula Society of Automotive Engineers, Director of Safety Systems Jan 2013- Jul 2014
- ❖ Eta Kappa Nu- Electrical and Computer Engineering Honor Society, VP May 2015- May 2016
- ❖ Tau Beta Pi- Engineering Honor Society May 2015