Adam Driscoll

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EDUCATION

Carnegie Mellon University, School of Computer Science — Pittsburgh, PA
Master of Science in Robotic Systems Development, GPA 3.93 — December 2018
Fall 2017 Selected Coursework: Machine Learning | Manipulation, Estimation, & Control
Spring 2018 Selected Coursework: Computer Vision | Robot Autonomy | SLAM

Worcester Polytechnic Institute — Worcester, MA
Bachelor of Science in Robotics Engineering — May 2012

ACADEMIC PROJECTS

GroundsBot – Master's Capstone Project, www.groundsbot.com — Carnegie Mellon University
Software Developer — September 2017 – May 2018

- Designing an autonomous field robot capable of mowing the rough grass at a golf course with no additional infrastructure
- Created robust perception & localization subsystems by fusing data from stereo camera, RTK GPS, IMU, & encoders using C++
- Created GPS waypoint following & acceleration smoothing algorithms used in the navigation subsystem of GroundsBot
- Achieved obstacle detection & avoidance by integrating the ROS Navigation stack into software architecture
- Increased testing & iteration speed by integrating detection & planning algorithms into simulation with Gazebo

Computer Vision Course (Assignments in MATLAB) — Carnegie Mellon University

- Achieved accurate image classification into 1 of 8 categories by implementing a Bag of Words classifier using Harris corner detection & KNN
- Precise optical character recognition accomplished by building a shallow neural network, including implementing forward pass & backpropagation using the sigmoid & softmax activation functions with cross-entropy loss
- Successful image stitching achieved by building a BRIEF descriptor to detect point correspondences & implementing RANSAC to find the best correspondences with which to compute the homography used to project one image onto another

Autonomous Wheelchair — Northeastern University
Research Assistant — February – May 2017

- Programmed an autonomous wheelchair to transport elderly people from a nursing home to the Northeastern campus
- Determined best SLAM implementation for the autonomous wheelchair & implemented the Cartographer system using ROS

Autonomous Mapping Robot — Worcester Polytechnic Institute
Software Developer — March – April 2011

- Developed mobile robot using Java to autonomously map & navigate a small hallway with static obstacle avoidance
- Built an accurate map of the environment using an occupancy grid which was then used for path planning & localization

PROFESSIONAL EXPERIENCE

Amazon Robotics — North Reading, MA
Operational Stability Engineer — July 2015 – February 2017
Field Service Engineer — February 2013 – July 2015

- Developed over 20 automation tools to replace manual task execution & reduce system failures
- Led more than 100 high severity calls with general & regional directors to resolve critical software issues
- Provided technical guidance to 120 zones across 36 Amazon Fulfilment centers to identify & resolve operational challenges
- Analyzed over 200 complex software issues & identified their root causes
- Collaborated with development teams to identify bugs & implement new features
- Troubleshot errors on all hardware components of the Amazon Robotics solution using a combination of MySQL queries & internally developed hardware testing tools
- Created a set of MySQL queries to collect data from 29 commercial client facilities & presented this data in a user friendly, graphical format using internally developed tools to allow maintenance teams to efficiently analyze warehouse status

SKILLS

Programming Languages: Python, C++, MATLAB, Bash, MySQL, Java, C
Frameworks & Operating Systems: Linux (Ubuntu, Red Hat), ROS, Git