**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](http://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