

# Adam Driscoll

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## EDUCATION

### Carnegie Mellon University, School of Computer Science

Master of Science in Robotic Systems Development, GPA 3.93

Fall 2017 Selected Coursework: Machine Learning | Manipulation, Estimation, & Control

Spring 2018 Selected Coursework: Computer Vision | Robot Autonomy | SLAM

Pittsburgh, PA

December 2018

### Worcester Polytechnic Institute

Bachelor of Science in Robotics Engineering

Worcester, MA

May 2012

## ACADEMIC PROJECTS

### GroundsBot, [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

Carnegie Mellon University

- Detected & outlined object boundaries in a variety of images by implementing the Hough transform algorithm in MATLAB
- Achieved approximately 50% accuracy (expected level of accuracy for assignment) to classify an image into 1 of 8 categories by implementing a Bag of Words classifier using Harris corner detection & KNN
- Built a neural network used for optical character recognition, including implementing forward pass & backpropagation using the sigmoid & softmax activation functions with cross-entropy loss

### 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
- Utilized a combination of ultrasonic sensors & encoders to localize, perceive, & map environment

## 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 Fulfillment 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
- Troubleshooted 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
- Aggregated & 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