JUSTIN WASSERMAN

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EDUCATION

University of Illinois at Urbana-Champaign August 2019 - Present
PhD in Electrical and Computer Engineering *Urbana-Champaign, IL*

· Advisor: Dr. Girish Chowdhary

University of Illinois at Urbana-Champaign August 2014 - May 2019
B.S in Computer Engineering *Urbana-Champaign, IL*

· Advisor: Dr. Steven LaValle
· Cumulative GPA: 3.61/ 4.00

RESEARCH EXPERIENCE

Offline Topological Mapping

· Researched method to improve creation of topological maps by removing detrimental connections in the map.
· On the image goal navigation task while using a topological map, success rate improved from 15.3% to 28.1%.
· Demonstrated research in utilizing topological maps in both the real world and in simulation.

Assisting Navigation for Agriculture Robots

· Trained CNN on robot's camera data resulting in a model that was able to detect whether the robot was in the crop row with 94% accuracy.

Analysis of Non-Deterministic, Minimalist Robot

· Created simulator in Gazebo to collect data on the interaction of simple, non deterministic, self-assembling, "bouncing" robots.
· Maintainer and creator of "kronprod" library, an open source library available on Anaconda.

PUBLICATIONS

J. Wasserman, G. Chowdhary. U. Jain. An Image Goal Navigation Paper in European Conference on Computer Vision (ECCV), 2022. Under double blind review.

A. Nilles, J. Wasserman, A. Born, C. Horn, J. Born, S. LaValle "A Hardware and Software Testbed for Underactuated Self-Assembling Robots" in IEEE International Symposium on Multi-Robot and Multi-Agent Systems (MRS), 2019

AWARDS AND HONORS

Leung Student Venture Fund Award 2019
UIUC ECE Department

· Awarded $1000 to support research in robotics for undergraduate thesis.

INDUSTRY EXPERIENCE

EarthSense May 2019 - August 2019
Deep Learning Intern *Champaign, IL*

- Applied deep learning techniques to agriculture data to assist robot in localization and analysis of data.
- Created pipeline to allow for streamlined training and testing of deep learning models for agriculture setting.

Arity January 2018 - May 2018
Software Engineering Intern *Chicago, IL*

- Translated high level motion data from a car to movement on a testbed robot to create a platform to demonstrate the captured motion data.
- Created device that simulates car trips through the OBD port. Also created web interface to allow developers to interact with the device. Resulted in developers being able to test firmware on thousands of different real and simulated car trips.

Yaskawa America Inc. May 2016 - January 2017
Applications Engineering Co-Op *Waukegan, IL*

- Built software library for motion applications for gantries, Cartesian robots, robotic arms, and other robotics applications.
- Programmed and presented interface and gantry that was used as a demonstration at the International Manufacturing Trade Show.
- Created test cases and documentation for motion and math code, and different applications that Yaskawa supports.

TECHNICAL STRENGTHS

Computer Languages	Python, Shell Scripting, C++, C
Computing	Pytorch, ROS, Linux, Git, Vim, LaTeX

TEACHING ASSISTANCE EXPERIENCE

ECE 110 Spring 2022
Teaching Assistant *Urbana-Champaign, IL*

- Led and supervised four 20-student lab sections.

ENG 298 LRM Fall 2015, Fall 2017
Teaching Assistant *Urbana-Champaign, IL*

- Taught collegiate students how to mentor middle school aged students in Lego robotics and First Tech Competition.
- Communicated with local teams, coaches, and students to organize mentorships.