

Dr. Wyatt McAllister

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RESEARCH INTEREST

I'm passionate about autonomous systems and data science and I'm excited to chat with teams working on intelligent consumer infrastructure.

EDUCATION

UNIVERSITY OF ILLINOIS | URBANA-CHAMPAIGN, IL | AUGUST 2018 - MAY 2020

Ph.D. in Electrical and Computer Engineering, Distributed Autonomous Systems Lab (DAS Lab)

Advised by Dr. Girish Chowdhary

Department of Electrical and Computer Engineering (ECE)

Cur. Cum. GPA: 4.0 / 4.0

UNIVERSITY OF ILLINOIS | URBANA-CHAMPAIGN, IL | AUGUST 2016 - MAY 2018

MS in Electrical and Computer Engineering

Advised by Dr. Girish Chowdhary

Department of Electrical and Computer Engineering (ECE)

Cum. GPA: 4.0 / 4.0

UNIVERSITY OF ILLINOIS | URBANA-CHAMPAIGN, IL | AUGUST 2014 - MAY 2016

BS in Electrical and Computer Engineering, Highest Honors

Department of Electrical and Computer Engineering (ECE)

Cum. GPA: 3.92 / 4.0

SKILLS

SOFTWARE

C++ • C • Java • MatLab • Python • \LaTeX Mathematica • Photoshop • HTML • CSS

HARDWARE

ROS • Open CV • PHP • Eagle CAD PCB

LANGUAGE

Spanish - Full Professional Proficiency

PROFESSIONAL EXPERIENCE

MICROSOFT SURFACE HUB | INTERN | PORTLAND, OR | MAY – AUGUST 2015

- Used capabilities studies to improve accuracy of vision system used in the manufacturing process
- Designed a custom testing fixture for the incoming quality control of power supplies

VIEW RAY INCORPORATED | INTERN | OAKWOOD VILLAGE, OH | MAY - AUGUST 2014

- Worked on a system for MRI targeted radiation therapy to prevent the irradiation of healthy tissues
- Created a fiber optic cable testing box to efficiently measure data flow in the system

RESEARCH

DAS LAB | POSTDOCTORAL RESEARCHER | URBANA-CHAMPAIGN, IL | JUNE 2020 – PRESENT

- Helped create a data validation pipeline using DeepSORT and OpenCV to perform detection and tracking of weeds in real agricultural fields to create spatially encoded density models
- Coordinated experiments performing robotic weed counts by processing information from camera and GPS

DAS LAB | GRADUATE RESEARCHER | URBANA-CHAMPAIGN, IL | MAY 2017 – MAY 2020

- Designed a multi-agent planning algorithm for robotic weed killing, with an associated simulation framework including a realistic weed growth model
- Incorporated a real-time weed growth information processing and prediction strategy using Evolving Gaussian Processes (E-GP) model and a Kalman filter, enabling proactive planning

AWARDS

2018	Shun Lien Chuang Memorial Award in ECE	Top 1/503
2016	Highest Honors	GPA >3.8/4.0
2016	John Bardeen Award in ECE	Top 1/2500
2014-2016	Dean's List	Top 20th Percentile

HONOR SOCIETIES

2016	Tau Beta Pi Engineering Honor Society	Top 12th Percentile
2015	Eta Kappa Nu IEEE Honor Society	Top 25th Percentile

TEACHING

UNIVERSITY OF ILLINOIS | URBANA-CHAMPAIGN, IL | AUGUST 2016 - MAY 2018

- Spring 2018: Fields and Waves I (ECE329) with Dr. Lynford Goddard
- Fall 2017: Principles of Experimental Research (ECE446) with Dr. Lynford Goddard
- Fall 2016: Digital Signal Processing (ECE310) with Drs. Yoram Bresler and Stephen Levinson

PUBLICATIONS

- [1] W. McAllister, D. Osipychiev, G. Chowdhary, and A. Davis. Multi-agent planning for coordinated robotic weed killing. In *Intelligent Robots and Systems (IROS), 2018 IEEE/RSJ International Conference on*. IEEE, 2018.
- [2] W. McAllister, D. Osipychiev, G. Chowdhary, and A. Davis. Agbots: Weeding a field with a team of autonomous robots. *Computers and Electronics in Agriculture*, 163:104827, 2019.
- [3] W. McAllister, J. Whitman, A. Axelrod, J. Varghese, A. Davis, and G. Chowdhary. Agbots 2.0: Weeding denser fields with fewer robots. *Robotics: Science and Systems Foundation*, 2020.