

# 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 | CHAMPAIGN-URBANA, 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 | CHAMPAIGN-URBANA, 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 | CHAMPAIGN-URBANA, 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 •  $\text{\LaTeX}$  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 | CHAMPAIGN-URBANA, 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 | CHAMPAIGN-URBANA, 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 | CHAMPAIGN-URBANA, 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. Osipych, 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. Osipych, 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.