Dr. Wyatt McAllister

wyattsmcall1@me.com | 512.638.3717

EDUCATION

UNIVERSITY OF ILLINOIS
Ph.D. in Electrical and Computer Engineering
May 2020 | Urbana-Champaign, IL
Conc. in Distributed Autonomous System
Cur. Cum. GPA: 4.0 / 4.0

MS in Electrical and Computer Engineering
May 2018 | Urbana-Champaign, IL
Conc. in Control and Data Science
Cum. GPA: 4.0 / 4.0

BS in Electrical and Computer Engineering
May 2016 | Urbana-Champaign, IL
Conc. in Control Systems
Cum. GPA: 3.92 / 4.0

LINKS

https://wyattsmcall1.github.io

AWARDS

UNIVERSITY OF ILLINOIS
Urbana-Champaign, IL
2018 | Shun Lien Chuang Award (1/503)
2016 | Highest Honors (GPA >3.8/4.0)
2016 | John Bardeen Award (1/2500)
2014-2016 | Dean's List (Top 20%)

SOCIETIES

UNIVERSITY OF ILLINOIS
Urbana-Champaign, IL
2016 | Tau Beta Pi (Top 12%)
2015 | Eta Kappa Nu (Top 25%)

SKILLS

SOFTWARE
C++, C, Java, MatLab, Python, LATEX, Mathematica, Photoshop, HTML, CSS, Git, Docker, PyTorch, TensorFlow

HARDWARE
ROS, Open CV, PHP, Eagle CAD PCB

LANGUAGE
Spanish - Professional

PROFESSIONAL EXPERIENCE

HRL LABORATORIES, LLC | SCIENTIST IV | MALIBU, CA
March 2021 - May 2024
- Developed collaborative robotic manufacturing solutions for General Motors, leveraging robotic control, signal processing for audio and video, and autonomous decision-making
- Designed a simulation platform for autonomous mobile robotic maintenance of undersea structures for Boeing, integrating control, path planning, and autonomous decision-making
- Created an autonomous robotic wire insertion system for aircraft manufacturing for Boeing, leveraging computer vision, robotic control, and autonomous decision-making
- Developed autonomous driving systems for General Motors, integrating autonomous decision-making with behavior trees and assured autonomy for collision avoidance

RESEARCH

DAS LAB | GRADUATE RESEARCHER | URBANA-CHAMPAIGN, IL
May 2017 – May 2020
- Created a multi-agent planning algorithm for robotic weed killing, with an associated simulation framework integrating a realistic weed growth model
- Incorporated a real-time weed growth information processing and prediction strategy leveraging Evolving Gaussian Processes (E-GP) model and a Kalman filter, enabling proactive planning

PUBLICATIONS

[1] D. M. Chan, W. S. McAllister, and H. Hoffmann. Robotic wire contact manipulation and pose estimation system, Aug. 8 2024. US Patent App. 18/164,229.

[2] W. McAllister, D. Osipychev, 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.

[3] W. McAllister, D. Osipychev, G. Chowdhary, and A. Davis. Agbots: Weeding a field with a team of autonomous robots. *Computers and Electronics in Agriculture*, 163:104827, 2019.

[4] 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.

[5] W. McAllister, J. Whitman, J. Varghese, A. Davis, and G. Chowdhary. Agbots 3.0: Adaptive weed growth prediction for mechanical weeding agbots. *IEEE Transactions on Robotics*, pages 1–13, 2021.

[6] W. S. Mcallister, J. D. Lampkins, and D. M. Chan. Robotic wire insertion using connector segmentation, Dec. 5 2024. US Patent App. 18/325,741.