Evan Palmer

Oregon State University, Collaborative Robotics and Intelligent Systems Institute
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Education

Oregon State University 2022 – 2027 (expected)
Ph.D., Robotics, 4.0 GPA
Advised by Geoffrey Hollinger

University of Nebraska-Lincoln 2018 – 2022
B.S., Software Engineering, Highest Distinction, 3.98 GPA
Advised by Brittany Duncan

Research Experience

Robotic Decision Making Lab 2022 – Present
Graduate Research Fellow

- Designing new motion planning and control algorithms for grasping free-floating objects in zero-gravity with the goal of enabling autonomous low Earth orbit service and maintenance tasks. This project is being performed in collaboration with MIT as part of the MIT Space Exploration Initiative.
- Created a novel autonomy framework for high degree-of-freedom underwater vehicle manipulator systems using nonlinear control, whole-body control, and behavior trees.

Nebraska Intelligent Mobile Unmanned Systems (NIMBUS) Lab 2020 – 2022
Undergraduate Research Assistant

- Developed *pymavswarm*, a Python library for developing swarm algorithms and deploying drone swarms to field environments.
- Showcased *pymavswarm* in the Netflix documentary "Unknown: Killer Robots".
- Designed a novel multi-agent collision avoidance algorithm using reachability analysis and demonstrated the capabilities of this algorithm using multiple sUAS with communication delays.
- Created an sUAS pilot proficiency determination system using distancing algorithms and spectral analysis.

Industry Experience

Marble Technologies 2022
Robotics Engineer Intern

- Developed a ROS 2 robotic manipulation system for the food processing industry.
- Delivered an MVP in three months, supporting demonstrations leading to pre-orders and a $10M Series A.
- Supported hiring and networking efforts by facilitating meetings leading to one core Senior Engineering hire and collaborations with academic partners.

Raytheon BBN Technologies 2021

Software Engineer Intern

- Developed swarm technologies used by United States Air Force Academy and West Point cadets for integrating innovative offensive and defensive robot swarm tactics.
- Supported integration of small fixed-wing aircraft into the DARPA OFFSET program which successfully demonstrated deployment of a swarm with over 100 robots to a field environment.

Awards

National Defense Science and Engineering Graduate (NDSEG) Fellowship 2022

Outstanding University of Nebraska-Lincoln Software Engineering Senior Award 2022

University of Nebraska-Lincoln Lockard Scholarship 2020

University of Nebraska-Lincoln Regents Scholarship 2018

Professional Service

IEEE Robotics and Automation Letters (RA-L) Reviewer 2023

Mentorship

John Delfosse (Undergraduate at University of Nebraska-Lincoln, NSF REU) 2022

Mikil Foss (Undergraduate at University of Minnesota Twin Cities) 2022

Publications

Peer-Reviewed Journal Publications

1. S. Kunde, **E. Palmer**, and B. Duncan, “Recognizing User Proficiency in Piloting Small Unmanned Aerial Vehicles (sUAV)”, *IEEE Robotics and Automation Letters (RA-L),* 2022

Peer-Reviewed Conference Publications

1. **E. Palmer**, C. Holm and G.Hollinger, "*Angler*: An Autonomy Framework for Intervention Tasks with Lightweight Underwater Vehicle Manipulator Systems", *IEEE International Conference on Robotics and Automation (ICRA)*, 2024 (Under Review)

2. H. Kolano, **E. Palmer**, and J. Davidson, "The Coupling Effect: Experimental Validation of the Fusion of Fossen and Featherstone to Simulate UVMS Dynamics in Julia", *IEEE International Conference on Robotics and Automation (ICRA)*, 2024 (Under Review)

Skills

Programming Languages

- C++, Python, Java, C, Javascript (React)

Software

- MATLAB, Autodesk Eagle, Autodesk Inventor, Adobe Premier, Blender, Jira, Asana

Development Processes

- Agile, Kanban