Liv Dawes

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Portfolio: livdawes.com

Education

Oregon State University
- PhD, Robotics
- Graduation: May 2030

Olin College of Engineering
- B.S., Robotics Engineering
- Graduation: May 2024
- Studied marine biology at DIS Copenhagen (Spring 2023)
- Teaching Assistant: Machine Shop, Fundamentals of Robotics, Bio-Inspired Design, Mechanical Prototyping

Research Experience

OSU Do Robotics Lab — Graduate Research Assistant Sep 2025 – Present
Advisor: Dr Brian Do
- Researching soft robotic applications for underwater robotics.

University of Washington Friday Harbor Labs- Student July 2025 – Aug 2025
Advisor: Dr Paolo Domenici, Dr Jacob Johansen, Dr John
- Collected live fish specimens and managed their care.
- Designed and built an experimental tank.
- Tested a looming stimulus on 2 different species of fish.

Olin College RoboLab — Undergraduate Researcher Oct 2020 – May 2024
Advisor: Dr Dave Barrett
- Led a team of students to conduct a literature review on hydrodynamics of fish locomotion and prototype methods of bio-inspired tail movement with shape memory alloy wires.
- Designed and prototyped silicone air springs to control the natural frequency of a biomimetic fish tail.
- Independently designed a ballast and floats system including building a model in SolidWorks, sourcing parts, and fabricating parts in a machine shop and on a professional-grade 3D printer.

Olin College RoboLab — UROP Researcher Aug 2021 – May 2022
Advisor: Dr Dave Barrett
- Oceanographic Undergraduate Research Opportunities Program (UROP) with General Dynamics Electric Boat.
- Researched the affect of fin design on stall characteristics of control fins.
- Designed, implemented, and experimentally tested a flow visualization system for our test pool.

Laboratory for Robotics and Applied Mechanics (LRAM) — Undergraduate Researcher June 2021 – Aug 2021
Advisor: Dr Ross L. Hatton
- Oregon State University, Robots in the Real World REU.
- Refined a biomimetic robotic snake to more closely mimic a sidewinding motion with pneumatic muscles.
- Tested the effect of varying control schemes and surface textures on robot locomotion across granular terrain.

Olin College Personal Narrative Lab — Undergraduate Researcher Jan 2021 – May 2021
Advisor: Dr Jon Adler
- Invitation only psychology lab researching the effects of personal narrative on identity.
- Conducted a literature review and created case studies on dissonance between public and personal narratives and identities.

Work Experience

Project Kuiper — Test Technician and Technical Writer Aug 2024 – May 2025

- Operate automated and non-automated satellite testing equipment in an ESD-safe clean room environment.
- Created and implemented a system to assemble, test, and track cable harnesses.
- Created technical documentation for equipment used in satellite manufacturing.

Fleet Robotics — Mechanical Alignment Intern May 2023 – Aug 2023

- Designed, prototyped, fabricated, and tested an electromechanical alignment system that optimized the number of robots that could simultaneously access a wireless underwater charging system.
- Built and tested electropermanent magnets under different parameters to find optimum adhesion force.
- Researched and specified wireless charging receivers/transmitters to charge over distance and misalignment.

Robots in Service of the Environment (RSE) — Robotics Manipulators Intern June 2022 – Aug 2022

- Redesigned, fabricated, and tested manipulators for compliance and shock absorption on an underwater ROV.
- Piloted, performed tether management for, and troubleshooted ROV during ocean field tests.

Strategic Robotic Systems (SRS) — Technician Sep 2018 – Oct 2019

- Assembled, soldered, and tested sub-assemblies for autonomous and remotely operated underwater vehicles.
- Managed shipping and quality assurance on incoming goods.

Awards

- Fulbright Semi-Finalist (2025)
- Olin College Half-Tuition Merit Scholarship (2020-2024)
- Barry Goldwater Scholarship (2022-2024)
- The EDGE Consortium Scholars Program (2024)
- Olin Public Interest Technology (PInT) Fellowship to fund non-profit work (2022)
- Clare Booth Luce Scholarship (2021, 2022)

Conference Papers

Rozaidi, Farhan, Emma Waters, **Olivia Dawes**, Jennifer Yang, Joseph R. Davidson, and Ross L. Hatton. "HISSbot: Sidewinding with a soft snake robot." In 2023 IEEE International Conference on Soft Robotics (RoboSoft), pp. 1-7. IEEE, 2023.

Skills

Hardware- 3D Printing, Laser Cutting, CNC Mill/ Router, Manual Mill/Lathe, Welding, Soldering, Urethane Casting, Prototyping

CAD/CAM- SolidWorks, Onshape, Fusion360, HSMWorks, VCarve, Finite Element Analysis (FEA)

Software- MATLAB, Python, R, ROS, Git, Unit Testing

Projects

Capstone Team: New Balance — Technical Lead Sep 2023 – May 2024

- Led a senior capstone team sponsored by New Balance to mechanize a step in the shoe manufacturing process.
- Designed, fabricated rapid prototypes and converged on final design integrating mechanisms from entire team.

Autonomous Robotic Rover May 2021

- Retrofitted an RC car to autonomously navigate, collect, and deposit a payload without GPS.
- Specialized in electronic design among a team of 6 interdisciplinary engineers.

Robot Soccer Nov 2022

- Programed a Neato robot to recognize a ball/goal and kick the ball towards the goal.
- Used ROS2, Python, and OpenCV.

Activities

FRC Robotics Team Mentor Oct 2024 – Present

- Mentor two high school robotics teams (teams 1899 and 997) that compete both locally and internationally.
- Provide technical training and support.

Olin Combat Robotics Group Sep 2023 – May 2024

- Founded an on-campus team to build and compete with combat robots in 1lb and 3lb classes.
- Mentored incoming students in designing and building their own combat robots.

AmeriCorps NCCC Oct 2019 – July 2020

- Team built 1.5 miles of trail in Texas and built two homes for underprivileged families in Kansas.
- Awarded President's Volunteer Service Award – Bronze and Congressional Award – Bronze Medal