

# Eric Huynh

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## RESEARCH INTERESTS

How autonomous systems perceive, act, and learn in dynamic environments — spanning learning-based control, reinforcement and imitation learning, multi-sensor fusion, probabilistic state estimation, and field robotics.

## EDUCATION

### University of Massachusetts Lowell

M.S. in Computer Engineering

*Thesis:* Sonar-Centric Perception for Underwater Robots: Mapping the Deep, One Angle at a Time (*under preparation*)

Expected: May. 2026

Thesis advisor: Prof. Paul Robinette

### University of Massachusetts Lowell

B.S. Double Major: Electrical Engineering and Computer Science, Minor in Robotics

Sept. 2020 — Dec. 2023

GPA: 3.94/4.00

## PUBLICATIONS

### Conference publications (peer-reviewed)

2. **E. Huynh**, M. E. Cabrera, P. Robinette, “Spectral Whitening and Confidence Fusion for Robust Sonar Scan Matching”, 2026 IEEE International Conference on Robotics and Automation (ICRA). *Under Review*
1. **E. Huynh**, P. Robinette, “Modality Matters: A Sim-to-Real Study of Sonar-Based Object Detection and Tracking”, IEEE OES/MTS Oceans Conference, Chicago, IL, USA, September 2025.

### Workshop Papers and Posters (lightly peer-reviewed)

4. **E. Huynh**, P. Robinette, “Sim-to-Real Evaluation of Scanning and Multibeam Sonar for Object Detection in Underwater Environments”, 2025 ICRA Workshop AQ<sup>2</sup>UASIM: Advancing Quantitative and QUAlitative SIMulators for marine applications, Atlanta, GA, USA, May 2025.
3. **E. Huynh**, P. Robinette, “Evaluating Sonar-Based Object Detection in HoloOcean And Real-World Environments”, 2025 UMass Lowell Student Symposium, April 2025.
2. **E. Huynh**, S. Sicari, P. Robinette, “Optimizing Underwater Image Enhancement Algorithms Through HoloOcean Simulator”, 2024 Northeast Robotics Colloquium (NERC), Amherst, MA, USA, September 2024.
1. **E. Huynh**, N. Uhunsere, Z. R. Khavas, P. Robinette, “A 3D Simulation Approach to Evaluate Human-Robot Interaction in Emergency Scenarios”, 2024 UMass Lowell Student Symposium, April 2024.

## PROFESSIONAL EXPERIENCE

**Graduate Research Assistant**, UMass Lowell NERVE Center  
*University of Massachusetts Lowell*

June 2024 — Present  
 Lowell, MA

- Develop and evaluate sonar-centric SLAM and multi-sensor fusion algorithms (sonar, IMU, camera, USBL) for underwater perception, mapping, and localization on simulated and real BlueROV2 platforms, with results presented at OCEANS 2025 and workshop at ICRA 2025.

**Research Assistant**, US DEVCOM ARL STRONG  
*University of Massachusetts Lowell*

July 2022 — May 2024  
 Lowell, MA

- Co-designed a 3D Unreal Engine simulation to study and improve human-robot interaction and task engagement in collaborative emergency situations for robotics research.

**Reliability Operations Engineering Intern**, Reliability Operations Team  
*Analog Devices*

Jan. 2022 — June 2022  
 Wilmington, MA

- Redesigned LabVIEW-based control software and developed automated monitoring tools to enhance hardware integration, reliability testing, and data collection efficiency in the Reliability Operations Lab.

**Oculus Launch Pad Fellow**  
*Oculus VR*

Sep. 2020 — April. 2021  
Menlo Park, CA

- Developed a VR prototype using Unity and Oculus SDK as part of the Oculus Launch Pad Fellowship, focusing on immersive interaction design and performance optimization.

**Research Assistant**, SiliconSynapse Lab  
*Northeastern University*

April 2020 — Sep. 2020  
Boston, MA

- Assisted in the design and development of HARPY, a thruster-assisted legged robot prototype.

## GRANTS AND FELLOWSHIPS

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UMass Lowell International Student Scholarship	2020 — 2023
Debi Prasad Sodhani Scholarship	Jan. 2020
MassBay STEM Mentor Program Scholarship	Jan. 2020

## HONORS AND AWARDS

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UMass Lowell Dean's Medal for Highest Achievement in Electrical Engineering	May 2021
MassBay IMPACT Award	May 2020
MassBay Electrical and Computer Engineering Program Award Winner	May 2020

## PROFESSIONAL SERVICE

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### Reviewer

- IEEE International Symposium on Safety, Security, and Rescue Robotics (SSRR) Reviewer Aug. 2024

### Leadership

- MassBay Engineering Club Co-President 2019 — 2020

### Volunteer Service & Outreach

- Mentoring and Academic Support (MAS) Program at Walsh Middle School 2018 — 2019