

# Everett Richards

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## Objective

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**Right Now:** PhD in Computer Science.

**After PhD:** A full-time research position in applied intelligent transportation and/or robotics.

## Education

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### San Diego State University

BS Computer Science & BS Applied Mathematics, 4.0 GPA

San Diego, CA

Aug 2023–May 2026 (expected)

## Research Experience

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### Research Assistant – San Diego State University

Advisor: Xiaobai Liu (Machine Vision and Perception Lab)

Aug 2025–Present

San Diego, CA

- Reproduced the  $\pi_0$  Vision Language Action (VLA) model to transform language commands into executable trajectories, especially for out-of-distribution tasks
- Developing a simulation environment in RoboSuite—a robot learning platform built upon the MuJoCo physics engine—to train and evaluate RoboChef, an AI-powered cooking robot.

### NSF Research Fellow – Worcester Polytechnic Institute

Advisor: Ziming Zhang (Vision, Intelligence, and System Lab)

May–Aug 2025

Worcester, MA

- Conducted robustness evaluations through targeted injection of Gaussian noise into 3D LiDAR point clouds, simulating sensor degradation due to low-resolution sensors and adverse weather conditions.
- Proposed and empirically validated a novel noise-aware training curriculum, achieving up to a 40% improvement in model robustness under challenging real-world scenarios.
- Resulting paper accepted at MIT URTC 2025.

### NSF Research Fellow – UC San Diego

Advisor: Hao Su (SU Computer Vision Lab)

Sept 2024–June 2025

San Diego, CA

- Conducted experiments on the impact of Gaussian noise injection in robotic imitation learning models.
- Achieved statistically significant  $R^2$  values between 0.91 and 0.99, supporting my argument that Gaussian noise induces a sigmoidal performance decay curve.
- Resulting paper accepted at MIT URTC 2025.

### NSF Research Fellow – University of Delaware

Advisor: Lena Mashayekhy (Intelligent Edge Systems Lab)

June–Aug 2024

Newark, DE

- Developed and validated two algorithms to improve object detection accuracy in autonomous vehicles.
- Achieved up to 70% accuracy improvement over legacy methods, validated on a four-robot testbed.
- Presented paper at the IEEE World Congress on Services 2025 in Helsinki, Finland.

## Publications

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- **E. Richards**, L. Dai, “Modeling Imitation Learning Robustness to Noisy Demonstrations via Sigmoid Degradation,” 2025 IEEE MIT Undergraduate Research Technology Conference (URTC), Cambridge, MA, 2025.
- **E. Richards**, A. Lopez, J. Morales, Z. Zhang, “From Chaos to Clarify: Strengthening 3D Collaborative Autonomous Vehicle Perception with Noise-Aware Training,” 2025 IEEE MIT Undergraduate Research Technology Conference (URTC), Cambridge, MA, 2025.
- **E. Richards**, B. Thapa and L. Mashayekhy, ”Edge-Enabled Collaborative Object Detection for Real-Time Multi-Vehicle Perception,” 2025 IEEE International Conference on Edge Computing and Communications (EDGE), Helsinki, Finland, 2025, pp. 13-22, doi: 10.1109/EDGE67623.2025.00011.

## Instructional Experience

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<b>Tutor</b> , Mathematics & Computer Science SDSU Math and Science Learning Center (MSLC)	Aug 2024–May 2025 San Diego, CA
<ul style="list-style-type: none"><li>Tutored students in computer science (Java, Python, data structures, algorithms), mathematics (calculus, discrete math, real analysis), and physics.</li><li>Participated in professional development workshops to enhance tutoring skills.</li><li>Certified Level 1 Tutor by the College Reading and Learning Association (CRLA).</li></ul>	
<b>Instructional Assistant</b> , Discrete Mathematics SDSU Dept. of Mathematics and Statistics – Instructor: Vadim Ponomarenko	Jan 2024–May 2025 San Diego, CA
<ul style="list-style-type: none"><li>Led weekly office hours for ten groups of 6 to 8 students, covering proof techniques, recursion, and boolean algebra.</li><li>Developed and discussed weekly focus exercises to reinforce key topics.</li></ul>	

## Leadership Experience

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<b>Vice Chair</b> , CTRL @ SDSU Coalition of Tech Representatives and Leadership (CTRL) at SDSU	May 2025–Present
<ul style="list-style-type: none"><li>Served on a board of leaders from various Computer Science student organizations at SDSU.</li><li>Represented CTRL at CS faculty and Industrial Advisory Board (IAB) meetings.</li><li>Director of the 2026 CTRL Student Project Showcase, Co-Director of the biannual ACM+CTRL Hackathon, and Committee Member for the 2026 CTRL E-Waste Drive.</li></ul>	
<b>AS Representative</b> Associated Students of San Diego State University (AS SDSU)	May 2025–Present
<ul style="list-style-type: none"><li>Represent the College of Sciences on the University Council.</li><li>Oversee financial appropriations for a non-profit with over \$45,000,000 in annual revenue.</li></ul>	
<b>President</b> , ACM @ SDSU Association for Computing Machinery (ACM) Student Chapter at SDSU	Apr 2024–Present
<ul style="list-style-type: none"><li>Secured \$2,500 sponsorship from Google to fund events and initiatives.</li><li>Presented 10+ workshops on topics like machine learning, web development, and version control.</li><li>Hosted the “Innovate 4 SDSU” Hackathon in April 2025, in which 80+ students competed to develop apps that improve student life at SDSU.</li></ul>	
<b>CSSC Representative</b> SDSU College of Sciences Student Council (CSSC)	Aug–Dec 2024
<ul style="list-style-type: none"><li>Oversaw financial appropriations, community service, and academic events within the College of Sciences.</li><li>Planned, implemented, and secured more than \$1,500 to fund the STEM Karaoke Night series.</li></ul>	

## Awards and Honors

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### Academic Awards:

- Cert. of Excellence in Advanced Programming Languages, World Computing Organization (2025)
- AP Scholar with Distinction, College Board (2023)
- National Merit Commended Scholar (2022)

### Scholarships:

- George A. Hansen Scholarship (2025)
- Deloitte Foundation Scholarship (2024)
- Mensa Foundation Scholarship (2024)
- Intuit STEM Scholarship (2023)

## Skills and Strengths

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### Technical Skills:

- Deep learning with TensorFlow, Keras, PyTorch, OpenCV
- Data analysis with NumPy, Pandas, Matplotlib, and Scikit-learn
- Computer vision, including CNNs & deep learning
- Computer networking and edge computing
- Theoretical and applied mathematics

### Professional Skills:

- Research, literature review, and technical writing
- Public speaking and presentations
- Leadership and organizational management
- Tutoring and mentoring
- Drafting LaTeX documents
- Publishing papers in reputable journals