Everardo Gonzalez | Robotics PhD Student

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PUBLICATIONS

[6] Everardo Gonzalez, Siddarth Viswanathan, and Kagan Tumer. 2024. Influence Based Fitness Shaping for Coevolutionary Agents. In *Proceedings of The Genetic and Evolutionary Computation Conference 2024 (GECCO '24).* AMC, New Year, NY, USA, 9 pages.

[5] Everardo Gonzalez, Siddarth Viswanathan, and Kagan Tumer. 2024. Indirect Credit Assignment in a Multiagent System: Extended Abstract. In *Proc. of the 23rd International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2024),* Auckland, New Zealand, May 6 - 10, IFAAMAS, 3 pages.

[4] Gaurav Dixit, Everardo Gonzalez, and Kagan Tumer. 2022. Diversifying behaviors for learning in asymmetric multiagent systems. In *Proceedings of the Genetic and Evolutionary Computation Conference (GECCO '22)*. Association for Computing Machinery, New York, NY, USA, 350–358. https://doi.org/10.1145/3512290.3528860

[3] Everardo Gonzalez, Lucie Houel, Radhika Nagpal, and Melinda Malley. 2022. Influencing Emergent Self-Assembled Structures in Robotic Collectives Through Traffic Control. In *Proceedings of the 21st International Conference on Autonomous Agents and Multiagent Systems (AAMAS '22)*. International Foundation for Autonomous Agents and Multiagent Systems, Richland, SC, 1601–1603.

[2] E. J. Martin, Benjamin Erwin, Kakani Katija, Amy Phung, Everardo Gonzalez, Susan Von Thun, Heidi Cullen, and Steven H.D.Haddock, "A Virtual Reality Video System for Deep Ocean Remotely Operated Vehicles," *OCEANS 2021: San Diego – Porto*, San Diego, CA, USA, 2021, pp. 1-6, doi: 0.23919/OCEANS44145.2021.9705810.

[1] Aviv Elor, Tiffany Thang, Benjamin Paul Hughes, Alison Crosby, Amy Phung, Everardo Gonzalez, Kakani Katija, Steven H. D. Haddock, Eric J. Martin, Benjamin Eric Erwin, and Leila Takayama. 2021. Catching Jellies in Immersive Virtual Reality: A Comparative Teleoperation Study of ROVs in Underwater Capture Tasks. In *Proceedings of the 27th ACM Symposium on Virtual Reality Software and Technology (VRST '21)*. Association for Computing Machinery, New York, NY, USA, Article 17, 1–10. https://doi.org/10.1145/3489849.3489861

HONORS AND AWARDS

Oregon State University | Corvallis, OR

AAMAS (Autonomous Agents and Multiagent Systems) Conference Scholarship — 2022, 24
GECCO (Genetic and Evolutionary Computation) Conference Scholarship — 2024
Excellence in Undergraduate Research Mentoring by a Graduate Student Award — 2024
Provost's Distinguished Graduate Fellowship — 2021-22

Olin College of Engineering | Needham, MA

4-Year Half-Tuition Academic Merit Scholarship — 2017-2021
3rd Place in Allegheny Conference Case Competition — Summer 2020
• Teamed with four students to create Virtual-Reality solution to enrich college social life despite COVID Restrictions by bringing social events to VR; won 3rd place and $1k total

EDUCATION

Oregon State University | Corvallis, OR

Doctor of Philosophy in Robotics | GPA: 3.75 — Ongoing
Master of Science in Robotics | GPA: 3.66 — July 2023

Olin College of Engineering | Needham, MA

Bachelor of Science in Engineering: Concentration in Robotics | GPA: 3.96 May 2021

Study abroad: Universidad de Sevilla | Seville, Spain

Focus: flamenco, photography, painting, and cooking Spring 2020

MENTORSHIP & TEACHING

Oregon State University | Corvallis, OR

Research Experience for Undergraduates (REU) Mentor Summer 2022, 23, 24

Mentor for 7 students in the REU program for robotics and artificial intelligence research

• Coauthored full paper in GECCO '24 and extended abstract in AAMAS '24 with undergraduate mentee

• Reviewed total of approximately 30 applications for 2023, 2024 cycles

• Recommended applicants for admission to my advisor for 2023, 2024 cycles

• Participated in a Q and A panel with 5 other mentors answering graduate school questions for approximately 25 undergraduate students

• Organized labmates to create opportunities for networking with undergraduates during remote work (Opportunities for REU students to interact with graduate students were sparse because the robotics building was closed and most research was done remotely)

Ask Me Anything (AMA) Host Fall 2022

Host for a virtual AMA for the MIX (Multicultural Innovators eXperience) at Olin College

• Shared my experience pursuing a graduate degree as a Mexican American first generation college student

• Answered questions on life and grad school from approximately 25 undergraduate students with underrepresented backgrounds in robotics and artificial intelligence

Teacher of English to Speakers of Other Languages (ESOL) Fall 2018

Teacher as part of the Olin Literacy Project Co-Curricular

• Joined 2 students and 2 staff to make ESOL lessons accessible to Olin staff

• Attended 5 workshops from external ESOL teacher to learn to teach English

• Taught English to Olin Dining hall staff in 1 hour sessions 1-2 times a week

WORK EXPERIENCE

Oregon State University | Corvallis, OR

Graduate Research Assistant (2022-Present) & Graduate Research Fellow (2021-22)

• Researcher investigating novel reward shaping techniques for intelligent swarm coordination

• Created a simulator for running a Cooperative Coevolutionary Algorithm (CCEA) on a swarm of robots with a leader-follower structure

• Performed extensive literature review on swarm shepherding and reward shaping to identify research gap in learning in a leader-follow swarm

• Coauthored work with an undergraduate mentee validating novel method [5,6]

• Collaborated with labmate to write paper on learning in asymmetric teams [4]

• Researched how to get reliable emergent behavior for structure formation in self-assembling swarms and presented poster remotely at AAMAS 2022 [3]

Machina Labs | Chatsworth, CA

Robotics Intern at Manufacturing Startup Summer 2021

• Robotics Intern working independently under supervisor on novel sheet metal manufacturing

• Designed method to generate robot arm tip paths for sheet metal manipulation

• Operated two industrial Kuka robot arms for experiments to validate methodology

• Documented research findings and applied my novel methodology on a customer part

• Created a test piece demonstrating the utility of my new manufacturing technique that now sits in the showroom to generate excitement in potential customers and investors

Monterey Bay Aquarium Research Institute (MBARI) | Remote

Research Assistant 2020-21

Researcher as part of Senior Capstone Project in Engineering, Olin College

• Researcher on team of 5 students developing year-long project sponsored by Dassault Systemés

• Built a Virtual Reality-based ROV control room for enhanced ROV operation [2]

• Co-designed and created virtual reality overlay for ROV tether twist data with ROV pilots and scientists

• Collaborated with researchers at MBARI and UCSC (University of California Santa Cruz to demonstrate efficacy of VR control with user studies [1]

Argo AI | Remote

Software Intern at Full Stack Autonomous Vehicle Startup Summer 2020

• Onboard Infrastructure Software Intern working under supervisor on team of 15 engineers

• Developed features in C++ to improve autonomous vehicle configuration software

• Led an interdisciplinary team to improve access to key in-house data

Dexai Robotics | Somerville, MA

Robotics Intern at Commercial Kitchen Automation Startup Summer 2019

• Robotics Software Intern working on core team of 20 interns and full-timers

• Built up machine learning infrastructure to improve robot arms' scooping capabilities

• Created Python data API for easily interacting with robot data

Olin College of Engineering | Needham, MA

Course Assistant for First-Year Modeling and Simulations Course Fall 2018

• Course Assistant (CA) working with 10 CAs and 3 faculty to teach 90 students

• Performed regular check-ins with students during class; held office hours to assist with homework; advised on open-ended projects

Harvey Mudd College (HMC) | Claremont, CA

Undergraduate Researcher in REU for Computer Science Summer 2018

• CS Education researcher working with a partner and co-advised by Olin and HMC faculty

• Researched potential improvements for Olin's computing curriculum

• Interviewed 35 stakeholders including current students, faculty, and alumni

• Presented stakeholder research at Poster Session at University of Southern California

SKILLS

Software:	C++ • Python • Pytorch • Numpy • ROS • Arduino • Github
Design:	Solidworks • Onshape
Manufacturing:	3D Printer • Laser Cutter • Drill Press • Bandsaw
Collaboration:	Rapid Skill Acquisition • Self Management • Co-design • Leadership
Research:	Neural Networks • Coevolutionary Algorithms • Multiagent Systems Reward Shaping • Underwater Autonomy • Artificial Intelligence

JUSTICE, EQUITY, DIVERSITY, INCLUSION & OUTREACH _____

Oregon State University | Corvallis, OR

Inspiration Dissemination Interview Winter 2023

Shared research through an interview in a live radio show by Inspiration Dissemination

• Explained multiagent learning research to a public facing audience

Olin College of Engineering | Needham, MA

Multicultural Innovators eXperience (MIX) at Olin Fall 2020 - Spring 2021

Member of group focused on promoting diversity, equity, and inclusion at Olin

• Helped host a diverse group of prospective students at Olin virtually

• Attended the SHPE (Society of Hispanic Professional Engineers) 2020 Conference to learn more about diversity equity and inclusion within engineering

***Revisiting American History* Publications** Fall 2020

Personal project for Olin's unofficial student-run newspaper, *Frankly Speaking*

• Researched history of race in America through Howard Zinn's *People's History of America*, NPR, and various online sources

• Published article series condensing hours of research into accessible stories for Olin community

• Encouraged discussion and reflection on the role of race in American history amongst peers

Racial and Ethnic Minorities at Argo AI (REMA) Summer 2020

Member of a group focused on supporting diverse and underrepresented employees at Argo AI

• Researched history of race in America through 21 day sprint exploring 1 resource per day with coworkers

• Discussed findings of research to explore various perspectives and experiences

• Compiled and organized notes from guest speakers to share internally at Argo

SIGCSE 2019 *Computer Science For All* Workshop Spring 2019

Participant in SIGCSE, a "Special Interest Group on Computer Science Education" that hosts research conferences focused on innovation in Computer Science Education

• Co-presented a workshop on teaching computer science through the contexts of non-Computer Science fields

• Helped demonstrate this approach makes Computer Science more accessible to a diverse group of students