

Ethan Castillo

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EDUCATION

Florida International University, Miami, FL

Expected Grad May 2025

- Bachelor of Science in Mechanical Engineering

PROFESSIONAL EXPERIENCE

FIU Seagrass Ecosystems Research Laboratory (SERL), Miami, FL

April 2022 – Present

Research Assistant (Student Lead), Scientific Diver, Crew Chief

- Organize and execute field work, gathering data safely and efficiently at over 140 sites across South Florida.
- Manage data entry for various coastal surveys.
- Ensure safe preparation and use of all diving and boating equipment.
- Service and operate over 30 different oceanographic instruments and sensors.
- Collaborate with Lead Engineer on projects.

Engineering Projects

Seagrass Sensing Robot – Senior Design Project

August 2024 – Present

- Designing, building, and testing an unmanned autonomous surface vehicle to conduct seagrass density surveys in shallow coastal waters, in order to conduct surveys more efficiently than scuba-based methods, and for less cost per field day.
- Lead facilitator of collaboration between the design team and SERL. Specialty in overall system configuration, imaging/sonar implementation, as well as survey method implementation and data processing QA/QC.
- Collaborating with teammates to design and optimize the power, propulsion, autonomy, and structure.

Aquarius Observatory Program - Institute of Environment

June 2023 – Present

- Utilization of the Aquarius Reef Base as a test bed for marine sensing and data transmission technology.
- Assist the lead engineer with the design and assembly of a subsea sensing hub with remote transmission capabilities.
- Organize and support testing of various oceanographic sensors, and their integration with each other.

Florida Bay Eddie Covariance Towers – Project Lead

April 2022 – June 2024

- Responsible for the operation of two Eddie Covariance Towers (ECT) that record CO2 flux data between seagrass ecosystems and the atmosphere. Processed data and uploaded into the Ameriflux global database.
- Oversaw the materials, design, assembly, testing, deployment, maintenance, and operation of the new tower in one year.
- Managed over \$250,000 worth of scientific equipment, while mitigating the rugged environmental conditions.

Rainbow Reef Dive Center, Key Largo, FL

January 2021 – August 2022

Senior Intern - Diving Instructor - First Mate

- Maintained and operated scuba equipment, air compressor systems, docks, and vessels.
- Instructed various PADI courses and ensured the safety of divers.
- Specialized in gas blending, O2 provision, and conservation diving.
- Managed vessel operations and provided exceptional customer experiences.

Minds of Tomorrow, Miami, FL

September 2020 – April 2022

STEAM Mentor – Part Time

- Mentored and instructed kids aged 5-12 in various STEAM-related educational activities.
- Organized and assembled materials, trained new mentors, and provided tailored learning experiences.
- Adapted teaching style to cater to children with diverse needs.

NASA L'SPACE Academy, Remote

May 2021 - July 2021

NASA Proposal Writing and Evaluation Experience

- Collaborated with a team in a mock proposal writing and review process for a biometric sensor project.
- Served as an evaluator on a review panel for other team's proposals.
- Learned valuable insights about proposal research and organization.
- Utilized these skills to successfully propose my own senior design project.

EXTRA CURRICULARS

Theta Tau Engineering Fraternity – Secretary

May 2024 – Present

- Document and maintain accurate records of official meeting minutes, ensuring clear communication and organization of fraternity activities and decisions.
- Play an active role in facilitating meeting procedures, providing support to leadership and ensuring adherence to fraternity guidelines.
- Participate in a national leadership conference, gaining valuable insights into leadership strategies, organizational development, and networking with professionals and fraternity members across the country.
- Contribute to fundraising initiatives for Habitat for Humanity.

Theta Chi Fraternity – Athletics chair

August 2022 – May 2023

- Assisted in fundraising for the United Services Organization, Children’s Miracle Network, and American Cancer Society.
- Organized team sporting events and practices in coordination with FIU recreational faculty.

SKILLS

Personal: Rigorous, Critical Thinking, Cultural Adaptability, Leadership, Team Collaboration, Mediation

Technical: Solidworks, MATLAB, C++ Programming, HTML, CNC Milling, Microsoft Office, Laboratory Procedures & Equipment, Parts Assembly

Physical: Operation of small and large water vessels, Scientific Diving, Conducting scientific research and surveys, Use of power tools, Lifting heavy objects, Climbing ladders, General maintenance/inspection of systems

Language: English (Native), Spanish (Proficient)

CERTIFICATIONS

- PADI: Open Water Scuba Diver, Advanced Open Water Scuba Diver, Rescue Diver, Coral Restoration, Dive Against Debris, Dive Master, Open Water Scuba Instructor
- DEHS: Laboratory Hazard Awareness, Welding/Hot Work Safety Compressed Gas Cylinder Safety, Environmental Awareness, Fire Safety, Hazard Communication, Personal Protective Equipment, Safe use of Fume Hoods, Small Spills and Leaks
- EPA Hazardous Waste Awareness
- AAUS Scientific Diver
- National Rocketry Association level 1 High Powered Rocket Clearance
- Enriched Air Gas Blender
- Emergency First Responder, First Aid, AED, Oxygen Provider