Adam Hamdan

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Education

University of Florida, Gainesville, Florida Aug 2022 - May 2026

- Bachelor of Science in Mechanical Engineering, Minor in Electrical Engineering, Minor in Anthropology
- 3.85 GPA
- Relevant Coursework: Robot Geometry II, Design and Manufacturing Lab, Mechanical Engineering Design 1, 2, and 3, Digital Logic
- National Merit Commended Scholar

Experience

Hydraulics/Hydrology Intern - South Florida Water Management District, West Palm May 2025 - August 2025

- Aided in the maintenance, control, and implementation of 936 water control structures from Orlando to the Florida Keys with the goals of nature preservation, water supply, and flood control
- Calculated flows through structures to ensure proper movement and control of the states water supply
- Compiled definitive structure books for two water control structures, containing all relevant documentation

Mechanical Team Leader – Machine Intelligence Lab, UF Jan 2023 – Present

- Lead the design and development of autonomous vehicles for RoboNation competitions, incorporating robust navigation hardware and environmental interaction capabilities through three mechanisms
- Manage a team of 30 undergraduate mechanical engineering students by creating onboarding procedures, assigning tasks, tracking progress, and providing regular feedback
- Coordinate purchases and ensure efficient team operations to meet competition deadlines
- Implement underwater design best practices, including material selection, O-ring specification, lubrication, and electrical connection integration between pressure vessels
- Collaborated with interdisciplinary engineering teams, including electrical and software engineers, to integrate mechanical systems into a cohesive and functional robotic platform

Undergraduate Researcher – Bio/Materials Tribology Laboratory, UF Jan 2024 – Present

- Aided in development of micro-tribometer control algorithm in Python that allows for precise movement and collection of time, position, velocity, and voltage data for the calculator of friction coefficients
- Developed python code for the operation of a tribometer, including stage movement and data acquisition in a GUI interface

Teaching Assistant – University of Florida Jun 2023 – Present

- Holding 15 office hours weekly for Mechanics of Materials, Fluid Mechanics, Mech Design 1, and Dynamics

Projects

SubjuGator: Autonomous Underwater Vehicle

- Oversaw the mechanical design of the vehicle, including mounting hardware and mechanisms
- Designed a hot-swappable battery system, allowing in-water battery replacements to enhance operational efficiency
- Researched and developed potting molds for underwater connections, ensuring robust cable splicing and sealing

NaviGator: Autonomous Maritime System

- Led operational planning and execution to achieve milestones and deliver a competitive autonomous boat
- Spearheaded the mechanical redesign of the boat, prioritizing reliability and simplicity
- Developed and implemented a cooling solution for the onboard computer, overseeing part selection, and assembly

Reciprocating Wear Tribometer

- Designed GUI in Python for time sensitive friction data collection
- Created electrical and mechanical layout to allow for simultaneous control of pneumatics and screw-driven stage

Skills

- CAD: SolidWorks, Fusion360, Onshape
- MATLAB, Python
- GitHub Management and Organization
- Ansys Granta
- Quartus, Model SIM
- Mill, Lathe, 3D Printing, Sheet Metal Working