

Gustavo Zotin Gomes de Oliveira

203-804-5156 • gustavo.oliveira@yale.edu • gustavozotin.com

EDUCATION

Yale University

Bachelor of Science, Mechanical Engineering

New Haven, CT

Expected Graduation: May 2028

RELEVANT COURSEWORK

CAD and Engineering Graphics | Engineering Computing and Problem Solving | Design Innovation | Practical Electronics for Mechanical Engineers | Mechanics of Solids | Thermodynamics | Fluid Mechanics | Machine Design | Materials Science Laboratory | Nanotechnology | Manufacturing Processes | Design of Machine Elements

TECHNICAL SKILLS

Software & Tools: SolidWorks, Autodesk Inventor, Fusion360, Solid Edge, MATLAB, Arduino

Productivity Tools: Microsoft Office (Excel, Word, PowerPoint), Google Workspace, Zoom

Engineering Skills: Machine design, design thinking, prototyping, soldering, troubleshooting, finite element analysis (FEA), design for manufacturing (DFM), design for assembly (DFA)

RELEVANT WORK EXPERIENCE

Strain Measurement Devices Inc.

Wallingford, CT

Mechanical Engineering Intern

May 2026 – August 2026

- Developed a non-invasive configurable ultrasonic bubble sensor for microbubble detection and volume estimation (2% Tube ID detection, 0.5uL max. estimation error).
- Conducted crystal and tubing characterization with excitation parameters to optimize sensor specifications.
- Created sensor parts, drawings, assembly procedures and applied DFM for injection molding and machining.
- Applied structural FEA to evaluate the integrity and support design improvements of all housing components.
- Conducted DFA to improve assembly workflow, product complexity, and speed manufacturing process by 50%.
- Developed method for binary bubble detection in stainless steel tubing and studied multiple layer combinations for signal retention.

The Faboratory – Soft Robotics Lab

New Haven, CT

Researcher

May 2025 – May 2026

- Designed and developed a waterproof amphibious robotic turtle with pneumatically actuated limbs capable of transitioning between terrestrial and aquatic locomotion modes.
- Evaluated energetic efficiency and hydrodynamic behavior of shape-changing, stiffness-modulating systems through tensile testing to inform design decisions and improve performance.
- Developed modular, interconnected waterproof machined housings for Dynamixel motors to withstand 30 psi through exposed shaft sealing interfaces.
- Created CAD models and assembled board prototypes, including soldering, wiring, and subsystem assembly.

PiroGon Inc.

New Haven, CT

Intern

September 2025 – May 2026

- Contributed to the development of an FDA Class II neuromodulation medical device designed to treat dysphagia and acute reflux through targeted electrical stimulation of pharyngeal and gastric valve muscles.
- Designed and constructed air- and water-based testing environments to evaluate pressure sensor performance.
- Collaborated with engineers to support device development, testing, and iterative design improvements.

PROJECTS

EcoQuad

2022 – 2024

- Designed and built a low-cost solar-battery hybrid vehicle from repurposed bicycles, solar panels, steel bars, and aluminum plates, achieving average speed of 24 mph.
- Conceptualized components for welding and used charge controllers to run energy management.