

Justin Tawil

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My interests lie in the intersection of robotics and medical technology, hoping to make a difference by providing a higher standard of care for everyone.

Education

University of Michigan, Ann Arbor, MI

Bachelor of Science in Engineering, Mechanical Engineering with a Concentration in Robotics

Graduating December 2024 | Dean's list: Fall '20, '22 Winter '23, '24 | GPA 3.50 (Engineering), 3.32 (Overall)

Skills

Solidworks | MATLAB | Simulink | Mill | Lathe | LabVIEW | Excel | PowerPoint | GD&T | Arduino

Experience

Intuitive Surgical Sunnyvale, CA | *Component Manufacturing Engineering Intern* May 2024 - Aug. 2024

- Addressed reports for non-conforming parts due to dimensional inaccuracies, test failures resulting from functional deficiencies, or missing documentation, collaborating with internal engineers and suppliers, successfully aiding in the closure of over 30 non-conformance reports
- Performed detailed analyses of engineering documentation, including complex engineering drawings, inspection records, and part qualification reports to support report resolution, completing reports in a timely manner
- Developed comprehensive Test Gap Analysis for an absolute position sensor, working with a cross functional team of design and manufacturing engineers to find gaps in both internal and supplier testing, identifying several gaps
- Created foundation for business process document for Test Gap Analyses, outlining a procedural approach to complete in depth analyses, lowering patient risk and decreasing non-conformances by identifying critical upstream gaps

Nalco Water, an Ecolab Company Manhattan, NY | *Technical Sales Intern* May 2023 - Aug. 2023

- Traveled to several sites each day, performing chemical testing and service on HVAC systems and 3DTrasar controllers, identifying inefficiencies to recorrect systems according to local New York City laws, preventing \$30,000 in violation costs
- Helped downtown Manhattan district grow current annuity business, sent 26 3DTrasar controller upgrade proposals to customers, totaling ~\$150,000 in continuous sales opportunities
- Worked with customers to understand their technical support needs, maintaining relationships with over 100 building engineers

Mapleseed Autonomous Drone Team Ann Arbor, MI | *Mechanical Lead* Oct. 2023 - Present

- Modeled and analyzed an inverted pendulum system to create a matlab script that simulates the response of the system using PID control, ultimately achieving an ideal response
- Designed and manufactured test apparatus for experimentation, collected data to be used to train a machine learning algorithm for a lightweight microcontroller

Projects

Design and Manufacturing: RMP Ann Arbor, MI | *Team Member* Jan. 2022 - Apr. 2022

- Designed and manufactured a Robotic Mobility Platform (RMP) based on several functional requirements, passing all functional testing

Design and Manufacturing: Mechatronic systems Ann Arbor, MI | *Team Member* Jan. 2023 - Apr. 2023

- Created a mechatronic linkage system utilizing several sensors, PID control, and a microcontroller to meet specifications

Design and Manufacturing: Self-Playing Instrument Ann Arbor, MI | *Team Member* Jan. 2024 - Apr. 2024

- Developed prototype for a self-playing instrument that could perform several songs using a self designed mechatronic system