

JUSTIN TONG

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Objective

Mechanical engineering student experienced in composite fabrication, FEA, and DFMA. Seeking a role where I can apply practical build experience and analytical skills to real-world, aerospace, or defense applications.

Education

B.S. Mechanical Engineering at San Diego State University | Expected May 2026 | GPA: 3.2

Technical Skills

Solidworks; OnShape; Fusion360; ANSYS FEA; Matlab; Python (Beginner); Hand/Power Tools; Composite Layup and Fabrication; 3D Printing for Rapid Prototyping; Java (Beginner)

Relevant Experience

QC and Analysis Lead, **Senior Design Project - General Atomics MQ-9 Pylon** ----- Sept. 25 to Present

- Engineered a modular payload pylon for the MQ-9 Reaper UAV that increased hardpoint connections from 1 to 4, designed to meet impact and MIL-STD structural requirements.
- Performed static structural FEA in ANSYS across multiple load cases and geometries, iterating on designs to meet performance and weight targets while maintaining 1.5 factor of safety.
- Applied laminate theory to design composite layup configurations and fabricated structural components using vacuum-assisted resin transfer molding (VARTM).
- Collaborated with General Atomics engineers through regular design reviews, maintaining technical documentation and delivering a full-scale design package and half-scale model.

Project Lead, ASME Student Design Team - **3D Printed Combat Robot**----- Sept. 2025 to Apr. 2026

- Designed and 3D printed a 3-lb combat robot, optimizing geometry for additive manufacturing constraints and impact loading for CSUN and National Havoc Robot League competitions.
- Led a multidisciplinary team through full design-build-test cycles, rapidly prototyping and iterating on mechanical components to meet weight, durability, and performance targets.
- Selected materials and manufacturing methods (CNC, 3D printing) balancing cost, lead time, and structural requirements for competition-ready assemblies.

Aerodynamics Subteam Member, **Aztec Electric Racing (FSAE)** ----- Fall 2023 - Spring 2024

- Developed a SolidWorks instrument panel compliant with FSAE hardware and safety regulations, coordinating design reviews with the broader vehicle team.
- Contributed to research, design, and fabrication of the carbon fiber composite undertray, supporting aerodynamic performance of the full vehicle system.

Leadership

Student Design Team Lead, (ASME) ----- Sept. 2025 to Present

Treasurer, **San Diego State University Triathlon Sports Club** ----- Spring 2023 to Present

- Treasurer of the SDSU Tri Club: Created annual budget and maintained financial records, increasing year on year funds by 80% in 2024.
- Races: USA Triathlon AG Nat.Champs. (12th place, 2025) | Santa Cruz 70.3 (4hr 56min, 2025)

Eagle Scout, Senior Patrol Leader and Junior Assistant Scoutmaster, Boy Scouts of America ----- 2022