

Tony Nguyen

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EDUCATION

Rice University

Bachelor of Science in Mechanical Engineering (GPA: 3.62/4.0)

Aug 2024 - May 2028

Houston, TX

EXPERIENCE

Top Grain Technologies | Mechanical Engineering Intern

May 2026 - Aug 2026

- Reverse-engineered the Tomahawk cruise missile's F107 turbofan high-pressure turbine blisk with partially missing manufacturing documentation, restoring and replacing 33% of its cast-and-weld production with an additive process
- Reconstructed the missing design data behind 10 legacy manufacturing processes through GD&T analysis of fragmented drawings, and authored a complete DARPA-standard engineering drawing package around laser powder bed fusion
- Routinely presented technical progress directly to DARPA and coordinated outsourced machining and inspection

Rice Eclipse Rocketry Team | Avionics-Mechanical Lead

Jan 2025 - Present

- Led a team designing the airframe, avionics bay, and recovery system of a fully reusable 8 g sensor-testing fiberglass rocket to an 8000ft apogee, engineered to easily recover and reassemble across a three-flight campaign
- Built a MATLAB recovery model converting vendor parachute drag data into descent rate, drift, and touchdown speed, holding landings to 25-35 ft/s and feeding descent loads into airframe sizing
- Simulated 8 g launch and ejection-charge recovery loads on the fiberglass bulkheads and shock-cord hardpoints in ANSYS Mechanical, sizing the structure against the MATLAB descent loads

Preston Innovation Laboratory | Undergraduate UAV Researcher

May 2025 - Present

- Built a humanitarian UAV from concept to flight-ready vehicle, owning requirements, roadmap, and design decisions, and delivered 41% more payload than an off-the-shelf equivalent
- Formulated and characterized a custom edible, biodegradable composite that sustains flight loads, deriving mechanical and rheological properties from Python-compiled data to balance strength, weight, and additive manufacturability
- Modeled the airframe in SolidWorks around composite and additive manufacturing constraints, validating stiffness-to-weight and vibration suppression via FEA to reach a flying demonstrator

LEADERSHIP EXPERIENCE

Rice Society of Asian Scientists and Engineers (SASE) | Founder & President

Jun 2026 - Present

- Founded Rice's first SASE chapter, building student development and cultural programming initiatives while leading corporate outreach, funding efforts, and a 10-student delegation to the SASE National Convention

Rice Center for Engineering Leadership (RCEL) | Student Director

Mar 2026 - Present

- Led RCEL's student programming, overseeing the annual event calendar, a 16-member team, and corporate partnerships across all Rice engineering organizations, engaging directly with C-suite executives.

Rice SolidWorks User Group | External Vice President & CAD Lead

Dec 2025 - Present

- Architected a SolidWorks curriculum aligned with CSWA/CSWP standards, training 20+ mechanical engineering students to a 90% CSWA pass rate

PROJECTS

Active Fin Stabilization Canard System | Rice Eclipse Rocketry Team

Aug 2025 - Present

- Designed the active fin stabilization canard actuation mechanism and housing in Onshape, reducing RMS attitude error by 65% during simulated flight disturbances
- Validated the design through modal analysis and fluid simulations in ANSYS Mechanical and ANSYS Fluent to withstand structural, vibrational, and aerodynamic loads at ~Mach 0.8

SKILLS

- Technical:** SolidWorks CAD, FEA, GD&T, Engineering Drawings, DFM, Onshape, Creo, ANSYS Mechanical, ANSYS Fluent, OpenRocket, MATLAB, Python
- Fabrication:** Laser Cutting, 3D Printing, Lathe, Welding, Soldering, Drill Press, Band Saw

HONORS & CERTIFICATION

- 2026 Lockheed Martin EIE Competition Quarterfinalist (Top 8 of 72 Universities)
- L1 High Power Rocketry Certification