

# Danny Tran

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## Career Objective

New grad seeking engineering position to apply my technical skills for developing a career adept in aerodynamics, propulsion, composites, additive manufacturing, and design optimization in industry.

## Education

**BS in Aerospace Engineering, GPA: 3.08**

University of California, San Diego (UCSD)

*Expected Graduation: June 2020*

## Technical Skills

- |                     |                       |                  |               |                        |
|---------------------|-----------------------|------------------|---------------|------------------------|
| • CATIA V5          | • Creo/ProE           | • SolidWorks     | • AutoCAD     | • ANSYS                |
| • MATLAB            | • C++                 | • Python         | • Wind Tunnel | • Nastran/Patran (WIP) |
| • GD&T (ASME Y14.5) | • Blue Light Scanning | • Laser Tracking | • ATOS Pro    | • Verisurf             |

## Professional Experience

**Large-Scale Design Optimization (LSDO) Laboratory** || La Jolla, CA

*Oct 2019 - Present*

*Multidisciplinary Design Optimization (MDO) Research Assistant*

- Developing wing internal structure models in Python for an Electric Vertical Take-Off and Landing (eVTOL) Urban Air Mobility (UAM) vehicle facilitated by using NASA's OpenMDAO framework for design optimization
- Implementing Finite Element Method (FEM) into structures models to analyze aeroelasticity of beams

**General Atomics Aeronautical Systems Inc. (GA-ASI)** || Poway, CA

*June 2019 - Aug 2019*

*Composite Tooling Intern*

- Fabricated a mockup carbon fiber with nomex honeycomb core bulkhead for MQ-9 Reaper (Predator B) for a fit check inspection inside its fuselage
- Repaired leak in landing gear joggle layup mold for Predator B fuselage using a carbon fiber wet layup patch and structural adhesive paste
- Laminated and vacuum bagged 5 tools (prepreg: 4 carbon fiber & 1 fiberglass) for oven and autoclave cures
- Assembled skins, ribs, conduits, and spars for a Predator B wing using adhesives and composite wet layups
- Inspected and repaired 7 wing rib trim and drill assembly fixtures to ensure dimensional and contour integrity via model-based inspection using a laser tracker with Verisurf for QA per engineering drawing
- Laid out hole and trim profiles from CAD models onto 6 wing ribs meeting specified GD&T (ASME Y14.5) via blue light scanning with ATOS Professional

**DroneLab - Qualcomm Institute** || La Jolla, CA

*Apr 2018 - Present*

*Aerodynamics & Aerospace Structural Research Assistant*

- Spearheading the development of 3D printable composite chevron shrouds to improve noise reduction for mitigating environmental disturbances for a 6-rotor Unmanned Aerial Vehicle (UAV)
- Investigating possible manufacturing techniques to increase heat resistance of drones for fire reconnaissance
- Maintaining, repairing, and diagnosing operation issues for 5 of the lab's FDM 3D printers (3 Ultimaker & 2 3D Platform) to ensure proper functioning for colleagues' on-demand needs
- Simulated a hexacopter in 5 different adverse near-wall flight scenarios to determine imposed forces for optimizing its control system for flight stability through Computational Fluid Dynamics (CFD) simulations in ANSYS
- Resolved long-term issues of evaluating flight performances of a canard box wing by conducting aerodynamic CFD analyses to advance the 1<sup>st</sup> prototyping of a Vertical Take-Off and Landing (VTOL) UAV capable of lifting 6kg

**Rocket Propulsion Laboratory** || UCSD

*Nov 2016 - Sept 2018*

*Co-Founder, Lead Analysis Engineer*

- Co-founded the organization dedicated to inspiring a current membership of ~70 students now developing a rocket to become the 1<sup>st</sup> university team to design, build, and launch a liquid-propellant rocket into space (330,000ft)
- Mentored colleagues on fundamentals of performing Finite Element Analysis (FEA) and CFD analysis using ANSYS
- Tested propulsive performances of a liquid oxygen/methane engine through a CFD combustion analysis to determine a maximum gas flow speed of Mach 2.8
- Initiated a design trade study on dampening acoustic/combustion instability in liquid propellant rocket engines to prevent performance declination and catastrophic engine failures

## Professional Development

- ANSYS Inc. Certificate of Training: Mechanical Heat Transfer, Fluent Combustion, Fluent Aeroacoustics