

# Danny Tran

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## Education

Bachelor of Science (B.S.) in Aerospace Engineering, GPA: 3.1

June 2020

University of California, San Diego (UCSD)

## Technical Skills

- |                     |                       |                  |            |                  |
|---------------------|-----------------------|------------------|------------|------------------|
| • CATIA V5          | • Creo/ProE           | • SolidWorks     | • AutoCAD  | • ANSYS          |
| • Wind Tunnel       | • MATLAB              | • C++            | • Python   | • Nastran/Patran |
| • 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 - June 2020

*Multidisciplinary Design Optimization (MDO) Research Assistant*

- Developed 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
- Implemented 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 Arial Vehicle (UAV)
- Investigating possible manufacturing techniques to increase heat resistance of drones for fire reconnaissance
- Maintained, repaired, and diagnosed operation issues for 5 of the lab's FDM 3D printers (3 Ultimakers & 2 3D Platforms) 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 using Computational Fluid Dynamics (CFD) simulations in ANSYS
- Resolved long-term issues of evaluating flight performances of a canard box wing by conducting a Design of Experiments (DOE) through CFD analyses to advance the 1<sup>st</sup> prototyping of an eVTOL 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 minimize performance declination and catastrophic engine failures

## Professional Development

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