


JAMES TSENG

US Citizen • ✉ jtseng22@ucla.edu •  •  • 

EDUCATION

UCLA

Sep 2019 - Jun 2023

Cumulative GPA: 3.95 / 4.0

B.S. Aerospace Engineering – Technical Breadth in Computer Science

RELEVANT COURSEWORK Aircraft Flight Mechanics • Intro Orbital Mechanics

• Control Systems Design Lab • Feedback & Controls • Probability & Stochastic Processes

• Intro Computer Vision • Software Construction • Data Structures & Algorithms

EXPERIENCE

UCLA ELFIN CubeSat

Student Researcher

Oct 2022 - Present

- Drafted GNC tool API architecture for orbital maneuver generation and satellite constellation operations to support future CubeSat missions currently in proposal stages.

- Verified and optimized ADCS simulation and attitude perturbation models in Julia with statistical analysis using past ELFIN-STAR Mission flight data.

Lockheed Martin Space

Software Engineering Intern

Jun 2022 - Sep 2022

- Supported full-stack development of 3 internal web tools using Go, SQLite3, JS, and HTML/CSS to replace spreadsheet-based business processes; projected to save >\$100K.

- Designed database schemas, conducted code reviews, held user engagement demos, delivered and updated production code through the Agile Scrum methodology.

- Established CI/CD and unit test framework with GitLab and integrated into active projects.

UCLA Samuelli

School of Engineering

Co-Instructor

Sep 2021 - Jun 2022

- Developed [curriculum](#) for *Introduction to Engineering Design: Drones*, a quarter-long hands-on class focused on iterative design, building, and testing of autonomous multirotors.

- Taught 20-student classes on topics including CAD (Onshape), hardware compatibility, PX4 flight stack, control allocation, PID control, Python, and asynchronous programming.

NASA L'SPACE

Mission Concept Academy

Deputy Project Manager

Jan 2021 - May 2021

- Presented [science mission](#) to study Venus' upper atmosphere with budget, volume, and weight constraints in preliminary design review developed virtually with team of 10.

- Led technical integration of science instruments requirements to vehicle system design as responsible engineer for vehicle control, power management, and systems risk mitigation.

EXTRACURRICULARS

Uncrewed Aerial Systems at UCLA

Co-Lead | AVIATA Project

May 2020 - Jun 2022

- Researched autonomous rigid-swarm drone system in team of 10 with \$10K NASA grant.

- Wrote and tested [flight software](#) for drone control logic, swarm leadership transfer, and ground station on PX4 Autopilot through MAVLink/MAVSDK and ROS 2 (C++).

- Derived and optimized new control allocation schemes for multi-drone structure and tested in Python simulation for effectiveness on motor saturation and compared to physical flight data.

President

May 2022 - Present

- Oversaw full project cycle of a cargo UAV by 40+ students for the SUAS Competition.

- Initiated transition to [internal web tools](#) for accessible workflow and documentation.

Purchasing Officer

May 2020 - May 2021

- Managed spending and budgeting of 2 \$10K+ technical project competitions.

- Revamped purchasing process and expense tracking with order form automation script (Google Apps Script) to email formatted purchase order and update budget ledger.

IEEE at UCLA

Micromouse Project

Oct 2020 - May 2021

- Applied PID control, IR sensing, distance & angle correction, and flood fill algorithm on STM32 microcontroller (C) and created sensor breakout PCB (Eagle) for a maze-solving robot.

- Placed 3rd among project members in the end-of-year All America Micromouse Competition.

CERTIFICATIONS

CSWP-MECHANICAL DESIGN

ID: C-JF9MCPTLAN

DS Solidworks - Dec 2020

SKILLS

CODE Python • MATLAB • Julia • C++ • C • Go • SQL • JS • HTML/CSS • Bash • Git

ENVIRONMENT Linux • MacOS • Windows • Microsoft Office

DESIGN Simulink • SolidWorks • Onshape • Eagle PCB