JAMES TSENG

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EDUCATION

UCLA
Sep 2019 - Jun 2023
Cumulative GPA: 3.95 / 4.0

B.S. Aerospace Engineering - *Technical Breadth: Computer Science*

Relevant Coursework Control Systems Design Lab • Feedback and Controls • Probability, Stochastic Processes • Flight Mechanics • Intro Orbital Mechanics • Intro Computer Vision • Software Construction • Data Structures

EXPERIENCE

Lockheed Martin Space
Software Engineering Intern
Jun 2022 - Sep 2022

- Supported full-stack development of 2 web tools using Go, SQLite3, JS, and HTML/CSS to replace spreadsheet-based processes for business efficiency.
- Designed databases, conducted code reviews, held user engagement demos, delivered and updated production code using the Agile process.

UCLA Samueli School of Engineering
Co-instructor
Sep 2021 - Jun 2022

- Developed and taught Introduction to Engineering Design: Drones, a lab focused on iterative design, building, and testings autonomous multirotors.
- Lectured on topics including CAD, hardware compatibility, PX4 flight stack, control allocation, PID control, Python, and asynchronous programming.

ENGINEERING EXTRACURRICULARS

Uncrewed Aerial Systems at UCLA
Co-lead | NASA ARMD USRC
May 2020 - Jun 2022

- Drafted proposal, budget, and timeline in team of 10 to create an autonomous payload-lifting drone swarm system; project accepted and grant funded by NASA.
- Wrote and tested embedded API for drone control logic, swarm leadership transfer, and ground station on PX4 through MAVLink/MAVSDK and ROS 2 (C++).
- Derived and optimized new control allocation schemes for multi-drone structure and tested effectiveness on motor saturation in simulation (Python).

Purchasing Officer
May 2020 - May 2021

- Managed spending and budgeting of 2 new $10K+ technical projects.
- Revamped purchasing process and expense tracking with order form automation script (Google Apps Script) to email formatted form and update budget ledger.

NASA L'SPACE Mission Concept Academy
Deputy Project Manager
Jan 2021 - May 2021

- Presented PDR developed with team of 10 detailing science mission to study Venus' upper atmosphere with budget, volume, and weight constraints.
- Led technical integration of science instruments and vehicle system design.
- Responsible for vehicle control, power management, and systems risk mitigation.

IEEE at UCLA
Micromouse Project
Oct 2020 - May 2021

- Applied and tuned vehicle PID control, IR sensing, distance and angle correction, and Floodfill algorithm on STM32 microcontroller (STM32CubeIDE, C).
- Created circuit schematics, created PCB (Eagle), and soldered SMD parts.

CERTIFICATIONS

CSWP-Mechanical Design
ID: C-JF9MCPTLAN
DS Solidworks - Dec 2020

TECHNICAL SKILLS

Code C++ • C • MATLAB • Python • Git • Go • SQL • JS • HTML/CSS • LaTeX
Environment Linux • MacOS • Windows • Microsoft Office
Design Simulink • SolidWorks • Onshape • Eagle PCB