

Connie Liou

E-Mail: connie.liou@stanford.edu | Cell: (redacted)

EDUCATION

Stanford University

Stanford, CA | Sept. 2022–Grad. 2028

Ph.D. Student AeroAstro Engineering

Rutgers University

New Brunswick, NJ | Sept. 2018–May 2022

B.S. Aerospace Engineering, B.S Professional Physics

GPA: 3.87/4.00; Dean's List all semesters

RESEARCH EXPERIENCE

Multi-Robot Systems Lab — Graduate Researcher

Stanford, CA | Sept. 2022–Present

- Develop distributed optimization methods and simulations for a locomoting truss robot using CasAdi

Burlion Research Labs — Undergraduate Researcher

New Brunswick, NJ | Jan. 2020–May 2022

- Collaborated with Dr. Laurent Burlion and STAR to develop Rutgers' first CubeSat mission from scratch, centered around testing propellant slosh-oriented novel control algorithms
- Led 20-page proposal writing effort detailing project narrative and implementation, culminating in the acceptance into the University Nanosat Program (UNP) to receive \$220,000 in funding from Air Force over 2-years
- Developed sloshing fluid tank payload, experiment plan, and on-board data collection to mimic full-scale missions

Hybrid Micro/Nanomanufacturing Lab — Undergraduate Researcher

New Brunswick, NJ | Summer 2019

New Jersey Space Grant Consortium (NJS GC) \$4,000 Grant Recipient

- Worked under Dr. Jonathan Singer to develop and test methods for the growth of zinc oxide nanostructures
- Researched mechanical properties of graphene nanocomposites to develop thermally conductive electronics coatings
- Performed thermal analysis on composites, shadowed scanning electron microscope and X-ray diffraction analysis

WORK EXPERIENCE

SpaceX — Launch Fairing Refurb Intern

Cape Canaveral, FL | Summer 2021

- Streamlined fairing lifting test plans to encompass all refurb and production locations, and reworked mass critical lift operations with automated load cell reading
- Developed cleaning methods for refurb fairings to meet laminate cleanliness requirements for customer missions
- Created electrical harnessing for ground support sensors to improve accuracy during pressure filling checkouts
- Recreated a zip tie validation test fixture using NX 12 to reduce cost from \$10k to \$200 with labor costs
- Supported issue ticket burndown and technician work for five refurbishment campaigns

NASA Goddard Space Flight Center — Pathways Intern

Propulsion Branch (Code 597)

Remote | Jun. 2020–Apr. 2021

- Researched Model Based Systems Engineering for Roman Space Telescope (RST) propulsion system with MagicDraw
- Designed 3D printing support structures for integration and test activity for the RST propulsion system
- Created simulations of propellant slosh in STAR-CCM+ to explore effects of fluid contact angle on simulation results
- Served as Promoting Agency Cross-Center Connections center chair to organize events for interns from all centers

Power Systems Branch (Code 563)

Greenbelt, MD | Aug. 2019–Jan. 2020

- Developed an energy balance analysis web application for the branch and the Mission Design Lab using Python
- Built and tested high voltage optocoupler driver circuitry for development of Dragonfly Mass Spectrometer (DraMS)
- Wrote battery life cycle testing control software using LabView to test new flexible 3D printed battery technologies

LEADERSHIP EXPERIENCE

Space Tech. Association at Rutgers (STAR) — President

New Brunswick, NJ | Jan. 2020– May 2022

- Led 6 subteam captains to develop system and subsystem level concept of operations and mission requirements to characterize sloshing fluid motion and test control algorithms
- Created new project organizational structure for 30 new members under Software, Mechanical, and Electrical teams
- Performed power balance analysis and guide flight component selections to meet mission requirements
- Developed CubeSat thermal analysis tool based on existing SatTherm design tool with Structures team using Python

School of Engineering (SOE) Ambassadors — Ambassador

New Brunswick, NJ | Jun. 2020– May 2022

- Represented SOE in events for admitted and prospective students such as panels and chat sessions
- Interacted weekly with a diverse cohort of women and minorities in STEM to inform them of college admissions