Connie Liou

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EDUCATION

Rutgers University — ***B.S. Aerospace Engineering, B.S Physics*** **New Brunswick, NJ | Expected Grad. May 2022**

GPA: 3.94/4.00; Dean's List all semesters; Major class rank 1 out of 57

- *Relevant Courses:*

Spacecraft & Mission Des.	Dynamic Sys. & Controls	Compressible Fluids	Intermediate Quantum Mech.
Aerospace Structures	Aerospace Materials	Orbital Mechanics	Principles of Astrophysics

WORK EXPERIENCE

SpaceX — ***Launch Fairing Refurb Intern*** **Cape Canaveral, FL | Jun–Aug. 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 RTDs to improve accuracy during recovery bottle 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

Burlion Research Labs — ***Undergraduate Researcher*** **New Brunswick, NJ | Jan. 2020–Present**

- Collaborate with Dr. Laurent Burlion and STAR to develop Rutgers' first CubeSat mission proposal from scratch, centered around testing propellant slosh-oriented control algorithms for NASA and Air Force university programs
- Lead 6 subsystem captains and Burlion Lab members to develop thorough technical proposals detailing project narrative, mission objectives, system requirements, payload and mission implementation, and concept of operations
- Develop sloshing fluid tank payload, experiment plan, and on-board data collection to mimic full-scale missions
- Performed dynamics analysis for summer student research for a one degree-of-freedom sloshing controls testbench

NASA Goddard Space Flight Center — ***Pathways Intern***

Propulsion Branch (Code 597) **Remote | Jun. 2020–Apr. 2021**

- Implemented Model Based Systems Engineering (MBSE) for Roman Space Telescope (RST) propulsion system using MagicDraw and researched applications of MBSE for branch activities
- 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 and deployed a power system design web application for user-friendly and versatile energy balance analysis in 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–Present**

- Develop system and subsystem level concept of operations and mission requirements to characterize sloshing fluid motion and test control algorithms
- Create new project organizational structure for 30 new members, and communicate CubeSat system needs to weekly subsystem meetings for Software, Mechanical, and Electrical teams
- Perform power balance analysis and guide flight component selections to meet mission requirements
- Launched Rutgers' first weather balloon to collect telemetry as a proof-of-concept for future communications testing
- 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–Present**

- Represent SOE in weekly virtual events for admitted and prospective students such as panels and chat sessions
- Support Tour Engagement Committee in developing virtual tours and complete monthly mentorship assignments

SKILLS/AWARDS

Technical Skills: Python, Solidworks, MATLAB, STAR-CCM+, COMSOL, LabView, Photoshop

Awards: Johnson Aerospace Endowed Scholarship, Rutgers Career Excellence Award, Code 563 Intern Performance Award