

Brian Liang

bliang120@gmail.com | linkedin.com/in/briang | bliang.info

EDUCATION

Georgia Institute of Technology – M.S. in Mechanical Engineering Aug. 2023 – Present
Focus Area: Mechanics of Materials Expected Graduation: May 2024

Georgia Institute of Technology – B.S. in Mechanical Engineering Aug. 2019 – May 2023
Georgia Tech Honors Program GPA: 4.00/4.00

INTERNSHIP EXPERIENCE

Commonwealth Fusion Systems – Devens, MA May 2023 – Aug. 2023

- Led development of a remote handling system for the SPARC tokamak that precisely positions its 4-ton port plugs, enabling safe installation and disposal while minimizing operator radiation exposure
- Identified a critical bolted-joint analysis error, averting >\$1M in expenses by preventing the propagation of flawed design decisions that would have later required extensive re-engineering or caused severe failures

NASA Jet Propulsion Laboratory – Pasadena, CA May 2022 – Aug. 2022

- Designed and assembled prototype wheel actuators for mobility and autonomy testing of a lunar rover, improving the load capacity of the flight design by a factor of six to account for Earth's higher gravity
- Transformed a notional concept for a first-of-its-kind underwater robot into an early-stage prototype design by determining subsystem interface requirements and designing the electronics and propulsion system

SpaceX – Redmond, WA May 2021 – Aug. 2021

- Spearheaded the development of mechanisms for power transmission from the deployable solar array to the chassis of next-generation V2.0 Starlink satellites, enabling mission-critical spacecraft functionality
- Performed testing and calculations for cable harnessing downselection to compare characteristics such as power loss and capsule torque, ultimately determining a \$250k cable purchase order for Q1 2022 production

Maritime Applied Physics Corporation – Baltimore, MD Aug. 2020 – Dec. 2020

- Enhanced parafoil steering and retrieval systems for the Towed Aerial Lift Of Naval Systems (TALONS) project
- Directly collaborated with clients to perform qualification tests and install upgrades for submarine vertical launch systems, ensuring operability during deployment on the Navy's upcoming Columbia-class vessels

RESEARCH & PROJECT EXPERIENCE

Smart Structures & Dynamical Systems Laboratory – Graduate Research Assistant Jan. 2023 - Present

- Design bio-inspired underwater robotic systems that use piezoelectric composites for locomotion, advancing the capabilities of the technology beyond the current state-of-the-art

Space Systems Design Laboratory – GT-2 CubeSat Structures Lead Jan. 2021 – Dec. 2022

- Led the mechanical analysis, fabrication, testing, and inspection of the GT-2 spacecraft chassis and deployables, ensuring mission success and compliance with launch provider requirements
- Upgraded the UHF antenna assembly for GT-2 by developing a novel deployment mechanism using a space-safe additive manufacturing process to reduce mass and improve in-orbit deployment reliability

Georgia Tech Solar Racing – Former Mechanical Lead and Shop Manager Aug. 2019 – Present

- Guide development of the team's multi-occupant vehicle by participating in design reviews and contributing to ongoing technical work, ensuring that all team decisions are based on sound engineering judgement
- Organized the mechanical systems revamp of the team's single-seater solar-electric vehicle by hosting weekly division meetings, developing project planning tools, and handling longer-term integration logistics

SKILLS AND ABILITIES

Programming

Arduino Java
MATLAB VBA
C++
Python

Applications and Software

Certified SolidWorks Associate
CAD (SW, NX) Rendering
CAM Microsoft Office
FEA (NX, ANSYS) KiCAD

Fabrication and Machining

Machine Tools Water-Jet Cutting
CNC Routing Electrical Prototyping
3D Printing Welding
Laser Cutting Manual Milling