

FORREST LI

(585) 287-2149 | forrest.li@duke.edu | <https://forrest-li252.github.io/my-website/> | <https://www.linkedin.com/in/forrest-li-b61b14378/>

EDUCATION

Duke University

Aug 2025 – May 2029

B.S.E in Mechanical Engineering, Aerospace Certification| Minor in Financial Economics

Durham, NC

- GPA: 3.96/4.00
- **Relevant Coursework:** Thermodynamics, Structure and Properties of Solids, Mechanics of Solids

SKILLS

- **CAD:** SolidWorks, Fusion 360, Onshape, Design for Manufacturing (DFM), Technical Drawings
- **Programming:** Python, MATLAB, Bash/Linux, Git/GitHub
- **Manufacturing:** CNC Machining, 3D Printing, Lathe Operation, Milling, Laser Cutting
- **Simulation:** ROS2, Gazebo, ANSYS FEA, RockSim
- **Electrical/Hardware:** PCB Assembly, Arduino, Embedded Systems, Soldering

PROJECTS

Velocity Based Training (VBT) Device

Mar 2026 – Present

- Developing a wearable velocity-based training (VBT) device to provide real-time barbell velocity tracking for strength training applications.
- Designed and assembled custom PCB hardware integrating embedded sensing and microcontroller systems (nRF52480) for portable data acquisition.
- Created signal processing pipelines to derive mean concentric repetition velocity from IMU (BMI270) data.
- Benchmarking device against commercial products

Autonomous Lunar Rover Stack

Jan 2026 – May 2026

- Developed a full autonomous navigation stack for an existing lunar rover using ROS2 Humble, Nav2, LiDAR based SLAM, and Gazebo simulation environments.
- Built a dimensionally accurate URDF rover model for physics-based simulation and autonomous navigation testing in Gazebo.
- Evaluated sim-to-real deployment challenges including wheel slip, power constraints, and localization reliability during physical rover testing.

Experience

Duke AERO

Jul 2026 – Present

Recovery Team Lead

Durham, NC

- Lead a 7-member recovery sub team responsible for the design, analysis, manufacturing, and testing of rocket recovery systems
- Oversee development of recovery hardware including parachute deployment mechanisms, separation systems, and recovery integration

Recovery Team Member

Sep 2025 – June 2026

- Designed a CO₂ driven HDPE blast disk separation mechanism in Onshape to improve rocket body separation reliability by reducing pressurized recovery system volume by over 5× from prior design.
- Performed ANSYS FEA under internal pressure loading to validate structural integrity and optimize disk geometry, achieving a theoretical factor of safety of 1.95.
- Fabricated blast disk prototypes using lathe & mill machining and Fusion 360 toolpath generation.

Duke Biostatistics and Bioinformatics Department

Sep 2025 – Present

Undergraduate Volunteer Research Assistant

Durham, NC

- Developed and benchmarked computational pipelines to evaluate the reproducibility of senescent cell identification methods across large-scale single-cell RNA sequencing atlases.
- Conducted research on benchmarking large language models (LLMs) and prompting strategies for code generation in data science applications.

University of Rochester - Laboratory of Laser Energetics

Jul 2024 - Jan 2025

Project Assistant

Rochester, NY

- Developed a MATLAB program to extract implosion velocity in Inertial Confinement Fusion
- Program was utilized in March 2025 to benchmark simulations of Germanium doped ablaters
- Presented findings at University of Rochester Research Symposium, detailed findings in research paper