

Yiunfan Hu

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EDUCATION

BSc. Mechanical Engineering at Stony Brook University

University Scholar; Dean's list (all semesters); GPA: 3.98

Stony Brook, NY

Jun 2024–May 2027

(expected)

Completed Coursework: [MEC203] *Engineering Graphics and CAD*, [MEC225] *Fundamentals of Machining Practices*,
[MEC260] *Engineering Statics*, [MEC262] *Engineering Dynamics*, [MEC325] *Manufacturing Processes*,
[MEC363] *Mechanics of Solids*

RESEARCH EXPERIENCE

Reactive Collision UAV

Research member at Prof. William Stewart's Soft Flyers Group

Stony Brook, NY

Jun 2025–present

- Assisted design a fixed-wing quadrotor resistant to collisions.
- Fabricated major components such as the wings using a CNC router.

Shape Memory Alloy (SMA) Springs

Research member in a joint project with *Interacting Robotic Systems Laboratory*, *Soft Flyers Group*, and *Yao Research Group*, started in the summer before my first year

Stony Brook, NY

May 2024–present

- 2024: Precise actuation of ball-and-socket joint using SMA Springs
 - o Developed two-degree-of-freedom joint with Arduino control system.
 - o Developed novel sensor-less method to quantify spring displacement using transient voltage peak/inductance
 - o Poster presentation in August 2024
- 2025: Achieving accurate predictive model of SMA Spring behavior in multi-spring networks
 - o Designed and fabricated a specialized testing system to control the heating of SMA springs and detect the displacement response.
 - o Experimentally validated theoretical models from literature and further expanded pre-established single-spring models to novel spring networks.

PROFESSIONAL TRAINING

NASA L'SPACE Proposal Writing and Evaluation Experience Academy

Participant – Team Role: Engineer

Virtual

May–Aug 2025

- Workforce preparation academy dedicated in writing and evaluating professional technical proposals taught by NASA scientists, engineers, and managers.
- Developed a proposal focused on the laser ignition system for a rotating detonation rocket engine.
- Served on a review panel for NASA solicitation responses and gained hands-on experience in evaluating proposals based on solicitation rubric and identifying strengths and weaknesses.

EXTRACURRICULAR PROJECTS

Combat Robotics at National Havoc Robot League (NHRL)

Team Captain

Norwalk, CT

Jun 2023–present

- Leading a team building combat robots in the 12lb weight class at NHRL.
- Obtained rich experience in system integration, control systems, and metal manufacturing.
- Developing a new robot with a novel wheel-less omni-directional drive system.
- Competed in September 2023 and June 2024.

Very Compact Electric Scooter

Independent Maker

Stony Brook, NY

Oct 2024–present

- Designed and home-built one of the most compact electric scooters.
- Gained practical experience in packaging and maximizing space utilization in design.
- Successfully conducted road testing, followed up with upgrades, currently in-use for daily commute.

SKILLS

CAD Autodesk Inventor, Autodesk Fusion, Onshape, SolidWorks

Software C, C#, HTML/CSS/Javascript, MATLAB, Python

Mechanical 3D Printing, CNC Machining, Manual Machining, Laser Cutting, Plasma Cutting, Rapid Prototyping, DFM

Electrical Arduino, Soldering