

May Wildgrube

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Education

Tufts University, BS in Mechanical Engineering and Physics (Double Major) Sept 2021 – May 2025

- GPA: 3.5/4.0
- **Coursework:** Transport Phenomena, Engineering Design, Control Systems, Classical Mechanics, Modern Physics

Projects

Hybrid Rocket Engine *May 2024-Present*

- Developing Hybrid Rocket Engine that burns paraffin wax and nitrous oxide
- Modeling combustion using Comsol to include flow, temperature, and species transport to inform design decisions and optimize mixing
- Building and designing pressure chamber and combustion chambers from scratch

Flight Computers for IREC Competition *October 2023-Present*

- Designed and developed flight computer PCB using KiCad for use in the IREC competition rocket as
- Currently improving design to use ESP32 WROOM-32E chip with capacities to read IMU, barometer, and temperature data and transmit over 433Mhz LORA to ground station

Experience

Engineering Intern, Sublime Systmems – Somerville, MA *May 2024 – Present*

- Worked with a team of engineers to design and commission a pilot plant for Sublime's low carbon Cement
- Worked with P & IDs to design and build piping and valve manifolds for chemical processes
- Optimized processes within the pilot plant for applications in scale-up for the kiloton plant

Research Assistant, Tufts Transport Phenomena Lab – Medford, MA *Jan 2024 – May 2024*

- Designed experiments for permeability research on aerogels using supercritical carbon dioxide
- Built MATLAB scripts to analyze complex transport equations in post-processing of data
- Designed and machined parts of the experimental setup using machines like a lathe and a mill

Teaching Fellow, Tufts University CEEO [Center for Engineering Education and Outreach] – Medford, MA *July 2023 – Aug 2023*

- Taught high school students robotics principles, such as CAD, control systems, and and coding
- Guided students through advanced engineering projects like sorting bots and autonomous planes

Club Leadership

Rocketry Team Lead, Tufts SEDS's Rocketry Team *March 2022 – Present*

- Developed a rocketry program from 6 to 50 active members over the course of 4 years
- Started 2 separate project teams, the IREC team and the Hybrid team, within two years
- Designed team structure for IREC team that lead to a successful competition
- Created L1/L2 certification program to allow non-engineers to pursue L1 certifications as a hobby

Skills

Technical Skills: SolidWorks, Comsol, KiCad, Onshape, Ansys, Matlab, FEA, CFD, P & ID, Python, C++

Manufacturing: Manual Mill and Lathe, Composites, Waterjet, Lasercutter, 3D printing

Interests: Marathon Running, Orchid Collecting, Japanese Language, Book Collecting, Hiking