

Matthew V. Lewton

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Education

Purdue University | West Lafayette, IN

Bachelor of Science in Mechanical Engineering, Mathematics Minor.

Expected Graduation: May 2025

GPA: 4.0

Experience

Bechtel Innovation and Design Center

Manufacturing Peer Mentor

West Lafayette, IN

April 2022–Present

- Conduct CAD/CAM consultations with students seeking to design and manufacture parts for projects in research, automotive racing, rocketry etc.
- Guide students operating CNC mills and lathes, and waterjet, as well as setting up tooling and work holding.

Purdue Space Program SEDS Liquids Team

Fin Can RE, Composites, and Manufacturing

West Lafayette, IN

August 2021–Present

- Team is designing a liquid rocket for competition at FAR Mars with apogee over 65k ft.
- Fin Can RE: Leading structural design, analysis, and integration of rocket's fin can and fins.
- Forming design-manufacture-test campaign for carbon fiber airframe, nosecone, and fins to validate simulations of structural performance and hone manufacturing techniques.
- Design and CNC machine aluminum structural airframe and engine components.

Montgomery College NASA MINDS Team

Lead Engineer

Rockville, MD

October 2020–October 2021

- Designed a lunar surface simulation testing rig with vacuum chamber and controlled heat flow which uses waste heat and the natural temperature gradient of lunar regolith to generate electricity,
- Received NASA and university funding to construct and test experimental thermoelectric system.
- Co-Authored research paper, presented at IEEE MIT URTC conference 2021, published in IEEE Xplore.
- Team placed 4th overall in NASA MINDS competition, 1st place Technical Paper.

Technical Skills

Software: Solidworks, Ansys, Siemens NX, Inventor, Fusion 360

Expertise: Composites, Structural Design, CNC Machining, 3D printing, Mechanical and Thermal Simulation.

Programming Languages: Python, C, MATLAB, HTML/CSS, Some SQL

Personal Projects

High Power Rocket and Composites (July 2022)

- Designed and built high power rocket for Level 1 NAR certification.
- Manufactured fiberglass airframe with a wet layup and interior molding method.
- Features avionics to record altitude, acceleration, and pitch.

Portfolio Website: mattlewton.me (June 2022)

- Designed custom HTML templates for Jekyll.
- Article content written in Markdown templates for easy maintenance.
- Styled in CSS without any libraries.

Roommate Compatibility Test (April 2021–May 2021)

- Created survey and Python algorithm to create a compatibility score for any two possible roommates. Considers over 30 weighted aspects of a roommate, such as common interests and living habits.
- Distributed on the Purdue Class of 2025 Discord server and has been used by over 140 students.