

Matthew V. Lewton

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Education

Purdue University | West Lafayette, IN

Bachelor of Science in Mechanical Engineering, math 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 in setting up tooling, workholding and operating both CNC and manual mills and lathes.

Purdue Space Program SEDS Liquids Team

Layup Composites and Manufacturing

West Lafayette, IN

August 2021–Present

- Team is designing a liquid rocket for competition at FAR Mars with apogee over 100k ft.
- Designing, testing, and manufacturing carbon fiber layup composite structures (airframes, nosecones etc).
- Modeling and simulating structural performance of composite structures in Ansys.
- Make CNC CAM and machine parts for structural 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.
- Simulated thermal performance of testing rig and thermoelectric generators.
- Team placed 4th overall, 1st place Technical Paper.
- Co-Authored research paper, presented at IEEE MIT URTC conference 2021, published in IEEE Xplore.

Technical Skills

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

Expertise: Mechanical and thermal simulation, CAD/CAM, 3D printing, etc.

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

Personal Projects

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.

Science Olympiad Scheduler (September 2021)

- Implemented backtracking search algorithm in Python to schedule Science Olympiad Members into their first choice events without overlaps or conflicts.
- Generated heat map spreadsheet with Python of member availability to aid in traditional scheduling process.

Ice Rink Shade Simulation (May 2021)

- Created Python simulation and graphics of proposed shade covering of outdoor ice rink for project proposal.
- Analyzes sun position and angle for a specific date, then maps the shadow's movement over the course of that day to produce heat map of sun coverage and graph of shade movement.

OverEngineered3D (October 2021):

- Etsy store selling customizable 3D printed trophies, topographic maps, 3D printed t shirts, and other items.