Neil Hasenstaub

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Education

Florida Polytechnic University Lakeland, FL
Bachelor of Science in Mechanical Engineering, Advanced Topics. GPA: 4.0 (Fall 2025) May 2027
Relevant Coursework: Statics, Dynamics, Strength of Materials, Thermodynamics, Structure and Properties of Materials, Kinematics and Dynamics of Machinery, Mech. Skills and Design, Mech. Lab Design 1
Current Semester: Mechatronic Systems, Fluid Mechanics, Intro to Aero Structures, Mech. Lab Design 2

Lakewood High School - Center for Advanced Technologies St. Petersburg, FL
CAT Robotics Program. GPA: 4.4, 6th in class. Member of student-led IT department. May 2023
Relevant Classes: Robotics Capstone, UAV Systems 1, AP Comp. Sci. A & Principles, AP Biology

Engineering Projects

Autonomous Vehicle Design
CAT Robotics Capstone Aug 2022 – May 2023

- Designed and 3D-printed custom vehicle chassis, including steering components and airless tires
- Created differential housing and modular drivetrain for four-wheel drive and independent suspension
- Integrated SONAR rangefinder and infrared sensors to implement obstacle avoidance and line following
- Applied Arduino C++ to create PPM-controlled mode selection and LCD information display

Stirling Engine Design and Analysis
Engineering Thermodynamics Aug 2025 – Dec 2025

- Conducted research to determine advantages of different types of Stirling engines
- Designed a two-cylinder alpha Stirling engine in SolidWorks
- Utilized thermodynamics calculations to optimize engine displacement and total volume
- Fabricated most parts using 3D printing and assembled based on design specifications

Four-Link Mechanism Analysis
Kinematics and Dynamics of Machinery Sep 2025 – Dec 2025

- Compared four-link mechanism designs to optimize approach to a logistics problem
- Generated mechanism dimensions using dimensional synthesis and problem criteria
- Utilized MATLAB-implemented kinematics and dynamics to examine mechanism behavior under loading
- Performed FEA in SolidWorks to preview expected stress/strain and locate stress concentrations

Leadership & Activities

Florida Polytechnic University Lakeland, FL
Lab Assistant – Chemistry 1 Aug 2024 – Apr 2025

- Setup & teardown of lab experimental materials and assisted in conducting student experiments.

ASME Member Sep 2023 – Feb 2024

- Designed airless tires with improved treads and mounting for club lunar rover project.

Skills & Interests

Technical: Advanced SolidWorks (CSWP) CAD Modeling & Assembly, Fusion 360, Inventor, Excel.
Intermediate MATLAB, Java, C/C++ (Arduino), C#, RStudio, LabVIEW, AutoCAD.
Manufacturing: 3D Printing & Slicing, Technical Drawings, GD&T, FEA (SolidWorks).
Interests: Avid musician, playing guitar and drums in rock bands with experience collaborating in a band setting.
Strong interest in design and construction through building and refining LEGO Technic vehicles.
Fan of ice hockey and baseball, actively following teams and game strategy.