Ben Tannenbaum

978-429-6095 | btannenbaum@umass.edu | linkedin.com/in/ben-tannenbaum

EDUCATION

University of Massachusetts Amherst   **Graduating: May 2025**

Bachelor of Science, Mechanical Engineering

GPA: 3.6, Commonwealth Honors College, Dean's List, Pi Tau Sigma Honor Society

Relevant Coursework: Propulsion Systems, Aerospace Fluid Mechanics, Strength of Materials, Statics, Thermodynamics,, Design of Mechanical Assemblies, Manufacturing Processes

EXPERIENCE

MACOM, Lowell, MA   **Summer 2023 & Summer 2024**

Electronics Packaging Engineering Intern

- Designed and drafted 10+ semiconductor fixtures in SOLIDWORKS, collaborating with both machine shops and utilizing on-site 3D printers for rapid prototyping and fabrication
- Supported electrical design by determining sizing and placement requirements for laminate packages
- Performed thermal analysis for electronic packaging using ANSYS Sherlock, determining individual and overall thermal expansion coefficients
- Applied DFMA and GD&T principles to streamline part designs and provide precise tolerancing
- Collaborated with manufacturing technicians and engineers to develop comprehensive manufacturing guidelines, ensuring the safe, efficient, and precise execution of manufacturing processes

UMass ASME - Mechatronics Team, Amherst, MA   **Fall 2024 – Present**

Design Vice President

- Led the conceptual design and strategy for the ASME SDC Assembly-Line Robot and ASME IAM3D Drone competitions, defining project scope and technical goals
- Directed two independent teams (40 members total), establishing project milestones, facilitating design reviews, and ensuring timely completion of deliverables

PROJECTS

Drone Payload Mechanism (SOLIDWORKS, ANSYS) - MassWildlife

- Engineered a drone-mounted claw capable of securely transporting, deploying, and retrieving recording devices (≤ 8 lbs) in salt marshes for remote bird monitoring
- Conducted power consumption and stress analysis using hand calculations, validating results with FEA in ANSYS
- Evaluated design performance through functional and field tests, using analysis metrics to validate reliability and effectiveness in real-world conditions

FPV Racing Drone (SOLIDWORKS CAD & FEA) - 2024 ASME IAM3D Competition

- Conducted structural and fluid analysis using Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD) to optimize drone components for strength, weight, and aerodynamic performance
- Spearheaded rapid prototyping using SOLIDWORKS and 3D printing to fabricate parts, iterating designs to minimize weight while meeting strength requirements
- Achieved 1st place for the Design Report and 4th overall, showcasing the team's effective design process, thorough documentation, and focused effort throughout the year

Wind & Solar Energy Robot - 2023 ASME SDC Competition

- Placed 1st overall by designing and building a remote-controlled device that harnessed solar and wind energy to move the most weight within a specified time
- Performed energy generation tests to optimize power output under varying constraints, simulating competition conditions to ensure peak performance

SKILLS

Software: SOLIDWORKS (CSWP), Ansys, MATLAB, Python, SAP, Agile

Hardware: Additive Manufacturing (FDM), Manual Machining (Milling, Drilling, Bandsaw), CNC Machining