Thomas Wells

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Education

Cornell University, BS Mechanical Engineering — Expected May 2027

- GPA: 3.515/4 | Focus: Mechatronics, Mechanical Design, and Advanced Manufacturing
- **Relevant Coursework:** Statics, Thermodynamics, Fluid Mechanics, System Dynamics, Mechanics of Materials. Mechatronics (planned), Additive Manufacturing (planned)

Experience

Hardware Team Lead, Cornell AutoBoat Project Team – Ithaca, NY — Jun 2025 – Present

- Leading an interdisciplinary team of 25+ engineers designing and manufacturing an autonomous surface vehicle for the RoboBoat competition, focusing on system integration and design efficiency
- Streamlined communication between mechanical, robotics, and E-systems subteams to reduce design time
- Hosting weekly workshops to mentor new members and implement DFMA best practices
- Developed adaptive project timelines and risk plans under uncertain competition deadlines

Mechanical Design Intern, ASML – Wilton, CT — May 2025 – Aug 2025

- Designed and prototyped precision storage mechanisms for chip reticle protection, leveraging Siemens NX and DFMA to reduce cost by 40%
- Engineered telescoping and rack-and-pinion drive systems optimized for manufacturability and space efficiency
- Created Gantt schedules in MS Project to track design dependencies and milestones
- Authored detailed technical documentation summarizing design evolution and experimental results

Projects

Undergraduate Research Assistant, Moridi Research Group - Ithaca, NY — Mar 2024 - Jun 2025

- Independently designed and manufactured a miniaturized selective laser melting (SLM) system enabling in-situ synchrotron experiments.
- Created modular substrates using wire EDM and dovetail joints to enable rapid experimental setup
- Engineered miniature powder hopper and feeder mechanism to automate print layer creation
- Achieved 10 nm layer precision using piezoelectric motor actuation
- Developed a .NET-based remote interface that reduced cycle time by 80%
- Demonstrated multi-layer SLM printing feasibility through successful trials

Robotics Team Member, Cornell AutoBoat Project Team - Ithaca, NY — Oct 2023 - Jun 2025

Selected Project: Remotely Adjustable Water Gun

- Designed and fabricated an adjustable water gun system used to advance to RoboBoat 2025 finals
- Optimized custom dynamic O-ring seals and static gaskets in accordance to Parker O-Ring Handbook guidelines
- Integrated servo motor to enable autonomous angle control with 0.5 degree precision

Selected Project: Lightweight Robotic Arm

- Spearheaded preliminary development of lightweight robotic arm focusing on design flexibility
- Employed inverse kinematics to optimize joint layout and minimize mass
- Performed FEA on arm segments validating component strength and stiffness

Skills

Technical: Siemens NX, SolidWorks, Fusion 360, Ansys Mechanical (FEA), MS Project
Programming: MATLAB, LaTeX, Python, .NET Framework
Manufacturing: FDM & SLM 3D Printing, CNC Machining, Wire EDM, Sheet Metal Fabrication
Soft Skills: Team Leadership, Creativity, Attention to Detail, Adaptability, Organization