Nicholas Martin

EDUCATION

University of Michigan, Ann Arbor, MI — Aug. 2025 – expected Dec. 2026
Master of Science in Aerospace Engineering

Tufts University, Medford, MA — Sept. 2020 – May 2024
Bachelor of Science in Mechanical Engineering

GPA 3.65/4.0, Magna Cum Laude, Dean's List, National Merit Scholar

EXPERIENCE

Laboratory Technician
RMD, Inc. *(Research & Development)* — July 2024 – March 2025

- Designed vacuum systems in SolidWorks; constructed, maintained, and benchmarked system performance
- Developed COMSOL simulations to model thermofluid, stress, and optical properties of films and systems
- Automated research workflow by writing LabVIEW programs for instrument control and data acquisition

Mechanical Engineering Intern
Microwave Engineering Corp. *(Defense & Aerospace)* — Jan. – June 2024

- Developed and refined SolidWorks models for aerospace-grade microwave transmission components
- Prepared products for machining by drafting engineering drawings and creating G-code in Mastercam
- Wrote SOPs for refining manufacturing processes and compliance with federal and customer requirements

Mechanical Team Lead
Tufts University Rocketry Team *(Student Organization)* — Sept. 2023 – June 2024

- Directed the Mechanical team for the 2024 Spaceport America Cup competition, placing 34th out of 121
- Modeled rocketry subsystems in OnShape and conducted materials research to validate prototype design
- Performed design validation through Ansys simulations, Instron testing, and multiple test flights

Package Engineering Intern
Allegro MicroSystems *(Semiconductors)* — May – Aug. 2023

- Created Ansys simulations and SolidWorks models to perform thermal and structural analyses of sensors
- Used Instron testing systems and MATLAB to investigate and monitor device modes of failure
- Determined thermal characteristics of novel package designs and modeled temperatures under load

Mechanical Engineering Intern
Werfen North America *(Medical Equipment)* — May – Aug. 2022

- Redesigned prototypes in Creo, then modified and installed improvements in collaboration with machinists
- Conducted reliability testing and troubleshooting of next-gen lab diagnostic equipment subsystems

TECHNICAL SKILLS

Software: CAD (*SolidWorks, Onshape, Creo Parametric*), Programming (*Python, LabVIEW, MATLAB*), Simulation (*Ansys, COMSOL, SolidWorks*), CAM (*Mastercam, Fusion, G-Code*), Microsoft Office Suite

Hands-on: Additive manufacturing, laser and water jet cutters, machine shop and power tools, circuitry, composite materials, chemical handling, material analysis

PROJECTS

Viability of Jet Fuel as Aircraft Coolant, *Therm-Fluid Transport II* — April – May 2024

- Conducted literature review and mathematical analysis of the use of aviation fuel as an active coolant
- Modeled and ran numerical heat transfer simulations in COMSOL to corroborate analytical findings

Autonomous *Operation* Robot, *Robotics* — Oct. 2023 – Dec. 2023

- Worked with teammates to create a robot capable of autonomously playing the game *Operation*
- Used OpenCV to locate the game piece and retrieve it with a custom electromagnet on a motorized gantry crane

Cryogenic Motion Control, *Senior Design Capstone / SLAC Laboratory* — Sept. 2023 – Dec. 2023

- Partnered with peers and SLAC to design a precise hoist for actuating an instrument for dark matter research
- Performed research justifying theoretical operation at cryogenic temperatures with minimal heat transfer