

Timothy C. Harrington

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[My Portfolio](#) | (407) 718-8019

EDUCATION

Northeastern University, Boston, Massachusetts

Candidate for Bachelor of Science, Mechanical Engineering

Activities: AerospaceNU Propulsion Design Lead, ASME Club Member

Honors: Dean's List, National Merit Commended Scholar, AP Scholar with Distinction

May 2027

GPA: 3.95

RELEVANT SKILLS

Software: SolidWorks (CSWA Certified), AutoCAD, MATLAB, C++

Fabrication: Skilled with Band Saw, Miter Saw, Press Brake, 3D Printing, laser cutting, and general shop tools. Basic operation of CNC Milling Machine, MIG Welding

WORK EXPERIENCE

MORSE Corp, Cambridge, Massachusetts

Mechanical Engineering Co-op

July – December 2025

- Supported hardware development on DARPA Albatross, owning complete hardware integration of a surrogate fixed-wing aircraft as an economical test platform for full-scale development
- Modified COTS aircraft and designed avionics platforms for specific programmatic requirements, improving accessibility with swappable platforms for field testing
- Designed custom avionics integration and mounts for on-board cameras, lidar, and radar sensors. Standardized design across aircraft platforms, allowing each asset to test multiple configurations
- Redesigned small-scale, airdroppable, autonomous paragliding system to support development of autonomy suite. Reduced weight and size to allow for full avionics integration, representative of full-scale asset
- Prototyped NACA recessed air inlet for avionics cooling, using thermodynamic principles to determine required intake area based on max operating temperatures and atmospheric conditions
- Created custom cable harnesses and bespoke pogo pin PCB enclosure allowing magnetic connection and disconnection

Northeastern University, Boston, Massachusetts

Cornerstone of Engineering Peer Mentor

February – April 2025

- Mentored first-year engineering teams through design projects, providing technical guidance and feedback

Florida Metal Craft, Winter Garden, Florida

Metal Fabricator, CAD Shop Drawing Services as needed

Summers 2023 – 2024, Fall 2024

- Created custom drawings using SolidWorks for clients to reflect work done and components used by the shop
- Fabricated hundreds of custom metal parts from shop sketches and engineering drawings using tools such as metal shear, press brake, MIG welder, and drill press

PERSONAL AND ACADEMIC PROJECTS

Liquid Rocket Fuel Tanks (Design lead)

September 2025 - Present

- Sized COPV pressurant tank using isentropic relations and ideal gas modeling.
- Designed LOX and kerosene tanks to meet pressure safety factors prevent leakage under pressure
- Performing structural validation prior to fabrication and pressure testing.

Needle Valve Actuator

May 2025

- Designed and prototyped stepper motor-driven needle valve actuator for PID pressure control testing.
- Designed torque limiting coupler using spring detents to prevent valve stem from binding at travel limits

Ablative Rocket Engine (Peer mentor, combustion chamber lead)

April 2024 – April 2025

- Designed aluminum combustion chamber housing and fabricated flanges via waterjet cutting.
- Manufactured custom fuel injector via CNC milling in collaboration with propulsion team.
- Designed venturi flow meter to determine fuel mass flow rate and required tank pressure.

Rocket Engine Test Stand

January - June 2024

- Installed fuel and pressurization plumbing using tube forming and custom 3D printed components.
- Calibrated pressure instrumentation and supported safe hot fire test operations.