

Elliot A. Dy

elliotdy.com | 802-557-4337 | elliotady@gmail.com | 2 Ashford Ct, Boston, MA

EDUCATION

Boston University College of Engineering | Boston, MA

Bachelor of Science in Mechanical Engineering

Aerospace Concentration

May 2026

GPA: 3.77/4.00

Cum Laude

Université Grenoble Alpes DLST | Grenoble, France

Boston University Study Abroad Semester

January 2024 – May 2024

GPA: 3.76/4.00

Relevant Coursework: Manufacturing Processes | Aircraft Design | Aerodynamics | Fluid Mechanics | Thermodynamics | Dynamics

EXPERIENCE

NASA Aeronautics Research Mission Directorate's ULI - Published Author/Research Assistant

Boston, MA

Unsteady Fluid Mechanics and Acoustics Laboratory

January 2025 – May 2026

- Co-authored AIAA publication "*Prediction of Performance and Noise of a Small Quadrotor Using CHARM*," contributing blade geometry processing and thickness-noise analysis
- Evaluated CHARM simulation settings and rotor geometries to study effects on predicted forces and thickness noise, against NASA experimental data
- Automated workflow converting airfoil coordinates into STL, PSU-WOPWOP, and pressure files for 100+ geometry cases
- Developed MATLAB tools to generate quad-mesh blade geometries and convert ASCII simulation outputs to CHARM-compatible binary formats, improving analysis efficiency and reproducibility

NASA L'SPACE Programs - Project Manager

Remote

Proposal Writing (NPWEE) & Mission Concept Academy (MCA)

January 2025 – September 2025

- Led 17-member team developing a Mars rover mission concept in MCA, delivering a 200+ page Preliminary Design Review and final mission presentation to NASA review panel
- Coordinated science, engineering, and programmatic subteams, organized meetings, schedules, task assignments, and deliverables while maintaining technical consistency across mission and proposal milestones
- Managed a 7-member team in NPWEE program developing a plasma-assisted solar sail propulsion proposal for long-duration and sub-L1 missions competing for NASA technology funding
- Collaborated with NASA engineers and subject matter experts, wrote proposal technical sections, created NASA New Technology Report submission, and participated in peer proposal evaluations

PROJECTS

Supercritical CO₂ Turbine Generator, Senior Design

- Designed turbine subsystem for a supercritical CO₂ Rankine cycle, creating rotor, enclosure, and nozzle in SolidWorks for integration with evaporator and condenser, operating at 30,000 RPM and generating 24 V
- Designed nozzle and flow path for 7.4 MPa, 400 °C supercritical CO₂ achieving 730 m/s jet velocity at 131 g/s mass flow
- Applied GD&T, shaft-bore fit selection, and tolerance stack-up analysis to ensure high-speed rotor and enclosure operation
- Generated Fusion 360 CAM toolpaths and designed components for manufacturability for CNC lathe, CNC mill, and wire EDM, integrating bearings and sealing solutions for high-pressure operation

Walking Table, Passion Project

- Designed and assembled a 578-part walking table in SolidWorks using linkage mechanisms driven by dual motor tank-style
- Engineered screw, bearing, and insert interface and optimized 3D-print orientation to prevent linkage failures under loads
- Integrated circuit using Li-ion battery, buck/boost converters, motor drivers, and Arduino control for multi-voltage operation.
- Developed Arduino-based wireless joystick control using two microcontrollers and wireless Bluetooth movement control

Drink Mixer, Electromechanical Design

- Designed and built a 4.5-DOF Cartesian drink mixer using 8020 aluminum extrusions, GT2 belts, and NEMA 17 motors
- Modeled and fabricated custom motor mounts, sliders, and fixtures in SolidWorks using 3D printing and laser cutting
- Integrated motion transmission and end-effector design to achieve repeatable X-Y-Z positioning and bottle handling

Rocket Nozzle, Boston University Rocket Propulsion Group

- Designed and optimized an 80% bell nozzle to achieve target expansion ratio using parabolic contour design
- Modeled nozzle in CAD and performed pressure stress simulations, verifying FOS = 4.25
- Integrated nozzle and ignition system in 3-person team and executed static firing tests for thrust validation

Additional Projects: Twin Jet Airliner | Survival Video Game | Lie Detector

CERTIFICATION & SKILLS

Fundamentals of Engineering (FE) Mechanical | NCEES

June 2026

Mechanical: CNC Mill, CNC Lathe, Soldering, 3D Printing, Laser Cutting, Oscilloscope, Water Jet, Wire EDM

Software: SolidWorks, Fusion 360, GD&T, FEA, MATLAB, HTML, CSS, Java, Arduino, Microsoft Office, CHARM, COMSOL

ACTIVITIES

President and Founding Father of BU Tau Kappa Epsilon - member since *February 2023*

Greek Life Sexual Assault Prevention - representative since *September 2023*