

Mert Tureli

Schenectady, NY | merttureli0@gmail.com | 838-251-9707 | linkedin.com/in/merttureli | Portfolio: merttureli.github.io

Education

Union College, Schenectady, NY

June 2026

Bachelor of Science: Mechanical Engineering

Relevant Coursework: Fluid Mechanics, Heat Transfer, HVAC Systems, Advanced Composites, Advanced Manufacturing

Skills

Technical: New product development, GD&T (ASME Y14.5), tolerance stack-up analysis, rapid prototyping, industrial 3D printing (SLA/FDM), laser cutting, milling, lathe operation, HVAC system design & load calculation

Software: SolidWorks (Expert, incl. VBA/API automation), AutoCAD, CATIA, Revit, Trane TRACE 700, FEA, CFD, MATLAB, Python, C++ (ESP32/Teensy), Excel (advanced), IBM DOORS

Language: English (Professional), Turkish (Native), German (Intermediate), Spanish (Beginner)

Certifications & Interests: Licensed Ultralight Pilot (SHGM), Competitive Archery, NAR Member

Experience

Engineering Intern, SunThru, Schenectady, NY

June 2026 - Present

- Develop and test first-generation prototype units, advancing process development across multiple in-house build and finishing stages
- Lead prototype validation across thermal, mechanical, and optical performance
- Engineered a benchtop thermal test rig with calibrated heat-flux instrumentation, embedded DAQ firmware, and redundant safety systems, measuring thermal resistance to $\pm 5\%$ comparative accuracy on a \$420 budget; design validated against a \$1,700 commercial alternative
- Produce toleranced engineering drawings for machine-shop quoting and manage component sourcing for prototype hardware under compressed lead-time requirements

Founder & CEO, ModuFly, Schenectady, NY

September 2024 - January 2026

- Secured \$70,000 in seed funding via Sparklabs Competition and private investors to develop modular STEM rockets
- Facilitated hands-on rocketry workshops teaching design fundamentals and troubleshooting to 20+ high school students

President, Union College Rocket Team, Schenectady, NY

August 2023 - June 2026

- Founded the team, chartered it as an official NAR section, and scaled it from a new club to competition standards
- Led 13 members as team captain, overseeing NAR/Tripoli safety compliance for high-power launches
- Won first place in the Battle of the Rockets 2026 Deployable Sensor Payload event as team captain and chief engineer
- Achieved a 700% budget expansion via strategic proposals to fund high-power airframe and telemetry development

Design Engineer / Materials Intern, TASECS İklimlendirme, Izmir, Turkey

June 2024 - August 2024

- Conducted material stress and fatigue analysis for the KAAN (5th-Gen Fighter) and HURJET defense aircraft programs
- Designed high-efficiency HVAC valve components for thermal management in advanced aerospace systems
- Selected aerospace-grade materials for 3D-printed prototypes and upgraded engine/cockpit cooling for high-ambient-temperature operation (HURJET)

Diagnostic Intern, Mercedes-Benz (Has Otomotiv), Izmir, Turkey

June 2022 - August 2022

- Supported technical diagnostics and repair workflows at an authorized Mercedes-Benz service center, coordinating vehicle status and repair details between service advisors and the workshop floor

Projects

High-Fidelity Flight Simulation Rudder Pedals

2026

- Modeled and 3D-printed a 3-axis F-15/F-18 control system in SolidWorks with A1301 Hall Effect sensors on a Teensy 2.0 for high-resolution, friction-free magnetic sensing
- Built C++ firmware for a plug-and-play USB HID interface with custom calibration and deadzone logic

Robo-Catcher: Automatic Softball Catching & Return Machine (Senior Capstone)

2025

- Co-led the 4-person feeding subsystem within a 12-person capstone team; delivered 100% feed-indexing reliability on competition day with a sub-\$700, 55 lb machine running 1.5 hr per battery charge
- Owned all electronics and firmware: ESP32 control of a 120 W DC flywheel (PWM + MOSFET stage), NEMA 17/TB6600 stepper indexing, limit-switch logic, and wireless start/stop with hardware emergency cut-offs
- Sized the feeder drivetrain via MATLAB torque analysis (0.19 kg payload, 1.8 $\times$ safety factor) prior to fabrication