Noah Saxenian

(413) 336-3369 | noahsaxenian@gmail.com | linkedin.com/in/noah-saxenian | noahsaxenian.com

Education

Tufts University, Medford, MA   *October 2022 – December 2025*

Bachelor of Science, Mechanical Engineering | Minors: Music Engineering, Mathematics | 4.0 GPA

Samuels Mechanical Engineering Award (Spring 2025), Dean's List each semester

Extracurriculars: Competition Climbing Team Captain

Relevant coursework: Acoustics, Electronics and Controls, Robotics And Mechatronics

Technical Skills

Control Systems:	PID control, frequency response analysis, FRFs, modal analysis, FFT, digital filtering
Programming:	Python, MATLAB, LabVIEW, JavaScript, HTML, Git
CAD/Simulation:	SOLIDWORKS (CSWA), Onshape, COMSOL CFD, KiCad PCB/schematic design
Embedded Systems:	Arduino, Raspberry Pi, ESP32, sensors/actuators
Fabrication:	Manual Mill, Lathe, CNC, Laser Cutter, Waterjet, 3D Printer, Sheet Metal

Experience

Tufts University – Center for Engineering Education and Outreach, Medford, MA

Undergraduate Research – Acoustics Engineering   *July 2025 – December 2025*
- Developed Python-based tools for acoustic and electro-mechanical measurement, enabling real-time acquisition and analysis of frequency response and modal data
- Built interactive web applications to visualize transfer functions, resonance behavior, and damping characteristics of tested structures

Mechanical Engineering Intern   *June 2024 – August 2024*
- Designed and fabricated an automated impact excitation system using a robotic arm to improve repeatability and data quality for modal testing
- Developed Python algorithms to compute and curve-fit frequency response functions (FRFs), derive modal parameters, and animate mode shapes for experimental modal analysis

Educational Robotics Research Assistant   *September 2023 – May 2024*
- Redesigned 3D printed housings for "Smart Motors," improving durability and cutting assembly time by 50%
- Integrated electromechanical systems in educational robotics kits and programmed user interfaces

Nolop Makerspace, Tufts University, Medford, MA

Workshop Staff   *September 2024 – December 2025*
- Assisted makerspace users in their electronics, 3D printing, laser cutting, and woodworking projects
- Advised on mechanical design, electronics integration, and fabrication techniques for students and researchers
- Monitored and promoted a safe environment in the woodworking shop as part of the makerspace

Appalachian Mountain Club, Gorham, NH

Assistant Manager of Backcountry Lodge Crew   *Fall 2021 - Summer 2023*
- Co-led a seasonal team in a high-pressure environment, coordinated logistics to support service for up to 52 guests per day
- Developed strong communication and team leadership skills through training new crew members while fostering positive dynamics and efficient work practices

Projects

Microarray Slide Printer   *September 2025 - December 2025*
- Collaborated on the design, prototyping, testing, and documentation of an automated microarray manufacturing system integrating custom hardware, motion control, and statistical validation methods
- Designed the novel five-stage "split-head" microapplicator system that enables simultaneous mixing and dispensing from off-the-shelf 1 mL reservoirs, printing a full 15 droplet slide in a single operation
- Optimized the system to reliably produce one slide per minute, achieving a 3x throughput increase over Boston Cell Standards' existing platform.

PID Controlled Espresso Machine   *January 2025 - August 2025*

- Designed and implemented a closed-loop PID control system on a microcontroller to regulate boiler temperature to ±1°C
- Tuned control gains to achieve fast settling time and minimal overshoot
- Developed both hardware and web user interfaces to display real-time temperature data, adjust setpoints, and configure heating profiles