Samuel Bloom

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Education

Franklin W. Olin College of Engineering | Needham, Massachusetts
Undergraduate Studies, 2024-2028, Recipient of merit-based Olin Tuition Scholarship
Notable Coursework: *Software Systems, Intro to Microelectronic Circuits, Discrete Math, Engineering Systems Analysis: Signals, Mechanical Prototyping.*

Bellevue Big Picture School | Bellevue, Washington
High School Diploma, 2017-2024

Skills

CAD - OnShape, SolidWorks, AutoCAD, Rhino
Programming – C#, Python, Java, C, MATLAB, Git
Fabrication – Manual Mill, Plasma Cutter, Welding, Laser Cutting, 3D Printing, CNC Router
Electrical – Circuit Design + Analysis, Schematic Proficiency, Soldering, Oscilloscope

Experience

Optical Engineering Researcher | Needham, Massachusetts
Olin Health Equity and Access Lab, SEP 2025-PRESENT

- Developed equitable technologies through the usage of medical optics, electrical analysis, and best biomedical practices.

Ferrofluid Speaker Engineer | Needham, Massachusetts
Personal Project, JUN 2025-PRESENT

- Manufactured a ferrofluid speaker capable of visualizing certain frequencies (different instruments) in songs.
- Utilized knowledge of C, microcontrollers, and circuit design to develop a fully functional Bluetooth speaker/visualizer.
- Used applications of 3D printing, machining, and woodworking to develop a modern product.

Electromechanical Hydroponics Member | Needham, Massachusetts
Public Interest in Technology Team, SEP 2024-JUN 2025

- Utilized information from sensors—TDS contents, PH levels, Light, Temperature—to instruct systems automatically care for hydroponic plants.
- Used best prototyping and mechanical practices to develop multiple hydroponic systems (shelves, carts, etc.).
- Developed a portable hydroponic system—capable of being assembled by children—to teach elementary schoolers about hydroponic systems.

Electromechanical Actuation + Research Member | Needham, Massachusetts
Olin Assistive Technology Lab, SEP 2024-JUN 2025

- Developed accessible, innovative, cheap assistive technology for visually impaired individuals.
- Collaborated with Perkins School for the Blind to develop innovative braille-based solutions (braille e-reader).
- Explored current capabilities of accessible technology (Braille + Prosthetics) to create the cheapest, most helpful solutions.

Weed Identification + Research Member| Needham, Massachusetts
Artificial Intelligence in Robotics Lab, SEP 2024-JUN 2025

- Used Python, Open3D, and ROS 2 Humble to develop a real-time point cloud for weed identification purposes.
- Used Robotics-based solutions to compete in the Farm Robotics Competition (FRC).
- Used knowledge of sensor implementation to move our robot in relation to real-world feedback.

Project Development + Management Intern| Redmond, Washington
Microsoft, OCT 2023- JUN 2024

- Navigated an iterative process in relation to project development with efficiency.
- Implemented best practices for continuous improvement throughout the project lifecycle.

Structural + Civil + Seismic Engineering Intern| Seattle, Washington
Coughlin Porter Lundeen, OCT 2022- JUN 2023

- Created various models using civil/structural programs (WWHM, RAM Steel, Civil3D, AutoCAD) for projects.
- Communicated with structural/civil groups to coordinate on client-commissioned projects.