ALLEN FRAIMAN

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EDUCATION

Boston University College of Engineering — Boston, MA
B.Sc., Mechanical Engineering, Concentration in Robotics — Expected May 2026
GPA: 3.99/4.00

SKILLS

Manufacturing & Process Development: DFMA, Lean Manufacturing, Root Cause Analysis (RCA), Standard Work Documentation, Line Balancing, Process Optimization, Defect Reduction, Statistical Process Control (SPC)
Design & Tools: SolidWorks (Assemblies, Simulation), AutoCAD, Fusion 360, CNC Machining, 3D Printing, Tooling & Fixture Design, BOM Optimization
Data & Programming: Python, MATLAB, LabVIEW, JMP, Excel, C, Arduino IDE, G-Code

INDUSTRY EXPERIENCE

Regeneron Pharmaceuticals — Rensselaer, NY
Automation Engineering Intern — May 2025 – Aug 2025

- Optimized a robotic liquid handling system by redesigning workflow sequences, eliminating manual steps, and increasing sample-processing throughput 4×.
- Developed Cellario automation sequences across 12 laboratory instruments, improving bioassay pass rate by 25% and standardizing data and material flow.
- Performed verification testing and root cause analyses to enhance system reliability and reduce downtime.
- Collaborated with automation and assay development teams to refine robotic protocols and improve workflow efficiency.

Regeneron Pharmaceuticals — Rensselaer, NY
Manufacturing Engineering Intern — May 2024 – Aug 2024

- Implemented Process Analytical Technology (PAT) into single-use bioprocessing workflows by designing a fixture that integrates optical sensors with sterile tubing for inline protein-concentration measurement.
- Engineered a single-use fixture in SolidWorks with GD&T, ensuring bioprocess compatibility, manufacturability, and seamless integration with upstream/downstream operations.
- Eliminated cleaning and sterilization requirements by transitioning to a disposable fixture design, contributing to $8M in projected annual savings.
- Supported broader assembly and documentation updates by applying DFMA and Lean principles to reduce rework and streamline controlled production processes.

PROJECTS

Vita Needle Centerless Polishing Automation

- Collaborated with a senior design team to refine centerless polishing parameters (wheel speeds, feed rates, angle alignment), establishing a repeatable process that increased throughput 6× for 5–10 ft tubes.
- Led the initiative to introduce an automated visual QC subsystem, proposing the concept to meet client requirements for standardized finish evaluation.
- Directed a subteam in designing optical fixtures in SolidWorks and integrating cameras, lighting, and Python/SSIM inspection logic for consistent pass/fail criteria.

Automated Pizza Slicer

- Led a semester-long engineering team to design a robotic pizza-slicing system, coordinating task distribution and integrating all components into the master assembly.
- Owned mechanical design, DFMA considerations, and fabrication of a 3-DOF slicing mechanism using SolidWorks and iterative prototyping.
- Developed control logic in Arduino with G-Code, enabling 0.1 mm positional accuracy and repeatable slicing performance.

ROSBot Autonomous Robot

- Built a ROS2-based mobile robot system with motion control and navigation algorithms for autonomous operation.
- Integrated ultrasonic, IMU, and encoder sensors for localization, obstacle detection, and closed-loop control.
- Implemented OpenCV vision routines for line-following and mapping validation within the autonomy stack.