Samuel Thomason

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EDUCATION

Columbia University in the City of New York Expected May 2026

B.S Mechanical Engineering, Minor Computer Science GPA: 3.80 / 4.00

Relevant Courses: Computational Aspects of Robotics, Advanced Programming in C, Thermodynamics, Heat Transfer, Fluid Mechanics, Mechanics of Solids, Dynamics and Vibrations, Materials/Processes in Manufacturing

SKILLS

CAD: Fusion 360, SOLIDWORKS, SOLIDWORKS FEA Simulation, LT Spice, AUTODESK PCB, SOLIDWORKS Visualise

Languages/Software : English, Spanish, Slovak, Java, C, C++, Python, Arduino, MATLAB, LaTeX, Excel

Manufacturing: Machining (5 axis CNC), Lathe, Laser Cutting, FUSION 360 CAM, 3D Printing, Rapid Prototyping, Soldering

EXPERIENCE

FAA Compliance Intern May 2025 – Aug 2025

A*erospace Design & Compliance– New Castle, DE*

- Directed FAA Supplemental Type Certificate (STC) coordination efforts, communicating with Engineering Unit Managers and private aviation clients, causing the approval of 2 aircraft modification certifications
- Achieved engineering documentation compliance across 9 STC projects by applying 14 CFR Part 25 regulations
- Overhauled 28 controlled forms within the FAA-approved ODA Procedures Manual, guaranteeing accuracy, regulatory compliance, as well as alignment with updated federal guidelines, improving audit pass rate from 85% to 98%

Undergraduate Researcher Jun 2024 – May 2025

Vukelic Research Group– New York City, NY

- Researched a less invasive alternative to LASIK surgery by applying innovative femtosecond laser treatment on ex-vivo rabbit corneas, achieving up to ± 8 diopters of refractive power in the most successful experiment
- Investigated correlations between treatment parameters and diopter change by conducting 20+ 8-hour experiments, analyzing with MATLAB and statistical analysis, enabling 22% increase in successful refractive corrections across trials
- Optimized corneal imaging process, reducing measurement time by 65% by manufacturing topographer stabilization jig

Mechanical Engineering Intern May 2023 – Sept 2023

Sensoneo Slovakia– Bratislava, Slovakia

- Modeled novel lens shape for prototype radar sensors leveraging rapid prototyping techniques and FUSION 360, increasing coherence of reflected data by 60 percent
- Resolved false-positive sensor readings by designing and manufacturing 2-axis CNC calibration jig for accelerometer, resulting in a 98% reduction in false readings and securing strong satisfaction during product testing in Saudi Arabia
- Secured foodservice customer deal valued at €89,000 by designing a one-hand-operable sensor holder

EXTRACURRICULARS

Columbia University Airplane Club

Chief Design Engineer Sept 2023 – Present

- Prepared for 2025 AIAA Design/Build/Fly competition, leading 23-member Structures subteam, contributing to elevating the team from 47th to 15th place (out of 97 international universities)
- Ensured structural integrity and manufacturability of competition aircraft by creating 300+ part SOLIDWORKS assembly and performing FEA on critical components, reducing weight by 18% while maintaining a 2.0 safety factor.
- Led authorship of the design proposal and 40-page final report improving documentation score by 30% over the previous year by strengthening technical clarity across the project

Columbia University Mechanical Engineering Teaching Lab

Superuser Sept 2024 – Present

- Earned Superuser status at Columbia's machine shop after 50 hours of training on lathes, mills, laser cutters, and assorted prototyping machines, gaining authorization to open and monitor the shop independently
- Developed final project coursework for Columbia's Materials & Manufacturing course, guiding 80+ students through CAD modeling, 3D printing, casting, CAM, and injection molding to build scale models of 1920-style race cars