

Kayla Fox

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EDUCATION

University of Pennsylvania

B.S.E. in Mechanical Engineering & Applied Mechanics

GPA: 3.93 / 4.0

Current Coursework: Machine Design and Manufacturing, Introduction to Thermal Fluids, Statics and Strengths of Materials, AI Business and Society

Philadelphia, PA

Aug 2024 - May 2028

SKILLS

Skills: Machining, Communication, Research and design, AI workflow integration, Data recording, Graphing and statistical analysis

Programming Languages: Java, Python, OCaml

Proficiencies: SolidWorks, Arduino, 3D Printing, DraftSight, Microsoft Office, ImageJ

WORK EXPERIENCE

University of Pennsylvania - Department of Mechanical Engineering & Applied Mechanics

Philadelphia, PA

Research Assistant, PURM Award | SOLIDWORKS, AutoCAD, Python, GCode, ImageJ, Powerpoint

May 2025 - July 2025

- Developed microfluidic devices to generate and control microdroplets with precise size, composition, and placement; gained hands-on experience with techniques such as soft lithography, 3D printing, microfabrication, and microscopy
- Programmed and calibrated 3D printer via Gcode and Python to enable precise control for accurate droplet placement
- Independently designed, prototyped, and iterated custom 3D-printed lab components in SolidWorks based on verbal problem descriptions, ensuring final parts met functional requirements
- Selected to receive a grant by the Penn Undergraduate Research Mentoring Program (PURM)

Columbia University - Biomedical Engineering Department

New York, NY

Research Assistant | MATLAB, Powerpoint, Excel

July 2023 – Aug 2023

- Researched at the Ultrasound and Elasticity Lab at Columbia Medical Center, focusing on ways to open the Blood Brain Barrier (BBB) with ultrasound and microbubbles
- Meticulously followed lab procedures, operated specialized lab equipment, and conducted full experiments; analyzed large data sets in MATLAB to create graphs that identified key trends; presented these findings in weekly lab meetings
- Authored a research paper on BBB drug delivery and presented findings at NYU GSTEM symposium

Adventures in Learning

Great Neck, NY

Tutor/Soccer Coach | Leadership, Communication, Mentorship

Sept 2022 – June 2024

- Supported a nonprofit after-school program helping underserved elementary students
- Tutored 5th and 6th grade students in core academic subjects, fostering academic growth and confidence
- Designed and led a weekly soccer program to promote teamwork, discipline, and physical activity

PROJECTS

Jet Engine Afterburner - Researching, designing, and fully building a jet engine afterburner for Penn Jet Propulsion

Present

Stirling Heat Engine - Designing and manufacturing a gamma type stirling engine for my machining class

Present

2048 Game - Recreated the game 2048 using the Java Swing GUI framework

Dec 2024

Fidget Spinner - Designed and fabricated a fully functional fidget spinner using both laser cutting and 3D printing

Feb 2025

CAMPUS INVOLVEMENT

Penn Jet Propulsion - R&D Team

Sept 2025 – Present

- Exploring, studying, and building different types of propulsion devices, gaining hands-on experience in the engineering design process, CAD, CNC Machining, and CFD Software

Society of Women Engineers - Educational Outreach Committee

Sept 2024 – Present

- Planned and led outreach programs including GEARS (Girls in Engineering and Related Sciences) Day and a campus shadowing initiative, coordinating campus tours, class visits, and academic guidance for high school students

UPenn Women's Club Soccer

Sept 2024 – Present

Delta Delta Delta

Jan 2025 – Present

AWARDS & CERTIFICATIONS

- CSWA - Mechanical Design, AP Scholar with Distinction, National Merit Commended Scholar, Presidential Community Service Award, High Honors in Science, Mathematics, and Engineering