

# Justin Ewan

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## Education

### University of Pennsylvania

Bachelor of Science in Engineering: Mechanical Engineering and Applied Mechanics

GPA: 3.38/4.00

Relevant Classes: Fluid Mechanics, Machine Design and Manufacturing, Statics and Strength of Materials, Introduction to Engineering Computing, Thermodynamics 1, Engineering Mechanics: Dynamics

Philadelphia, PA

August 2024 - Present

## Skills and Interests

**Technical:** SolidWorks CAD Design Associate, 3D Printing, CNC Machining, Laser-Cutting, Raspberry Pi Pico, Rapid Prototyping

**Programming:** Python, Java, Arduino IDE, LaTeX, MATLAB

**Language:** English (Native), Spanish (intermediate, speak, write, read)

## Projects

### Suspension Bridge | Mechanical Engineering Laboratory

- Fabricated a 20 x 4-inch working suspension bridge through SolidWorks to achieve a maximal load of 2.5 kg on inner cables alongside two others. Tested suspension bridge through buckling and FEA analysis to optimize the sag height of inner cables.

### Catapult | Mechanical Engineering Laboratory

- Designed and constructed a catapult which launched a 4in styrofoam ball up to 13ft using 0.25-inch MDF and bungee cords alongside two others. Designed a prediction model through Python code to optimize launch angle and target distance.

### Lighthouse | Introduction to Mechanics Design

- Built a 4 x 6-inch lighthouse using SolidWorks to re-create the University of Pennsylvania's historic boathouse while using 0.25-inch MDF and three unique wood joinery techniques to develop a clean, interlocking final product.

## Work Experience

### INSA Lyon | Student Researcher

May 2026 - June 2026

- Collaborated with a research advisor and two other student researchers to design and build an air quality tracking application using HTML, Javascript, and applying software development principles to monitor local environmental changes.
- Completed intensive coursework in computer science, French language, and French culture, developing technical capabilities alongside cross-cultural communication skills.

### University of Pennsylvania | 3D Printer Technician

January 2026 - Present

- Fabricated 3 to 10 3D prints a week for graduate students and researchers at the university's additive manufacturing lab (AddLab) through stereolithography, polyjetting, and fused deposition modeling 3D printers.
- Partnered with researchers and graduate students to recommend materials and 3D printers for their project needs.

## Leadership and Activities

### Design, Build, Fly | Member

September 2026 - Present

- Co-design aircraft systems alongside multi-disciplinary engineering teams to meet strict competition mission profiles and flight endurance targets.
- Conduct Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD) simulations to maximize aerodynamic stability and structural integrity under multi-varied dynamic flight loads.

### A. James Clark Scholars Program | Member

September 2024 - Present

- Secured a highly competitive spot as 1 of 40 engineers throughout the university based on excellence in education, research, and community engagement.
- Engaged in entrepreneurship workshops and two university-level entrepreneurship courses to develop key business skills.
- Gained specialized mentorship through accredited professors at the university and innovators within their respective industry.

### National Society for Black Engineers (NSBE) | Member

September 2024 - Present

- Engaged in skill-building activities, like technical interview prep and networking events, to converse with the black engineering community and build hard skills for the workplace.

### Summer Academy for Maths and Sciences (SAMS) | Student

June 2023 - August 2023

- Selected as 1 of 75 STEM scholars nationally for a STEM enrichment program, fostering academic excellence by learning key topics such as physics, chemistry, and game design, under accredited professors at Carnegie Mellon University.