

# Hannah Nguyen

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## EDUCATION

**Harvard College** | GPA: 3.8/4.0 | Cambridge, MA  
S.B. Candidate in Mechanical Engineering

May 2027

- **Relevant Coursework:** Mechanics of Solids, Computer Aided Machine Design, Intro to Electrical Engineering, Python for Engineers, Statistical Physics, Linear Algebra, Multivariate Calculus, Intro to Computer Science, Music Engineering
- **Activities:** Conflux Art Tech, SEAS Ambassador, Harvard Vietnamese Association, Asian American Dance Troupe

## EXPERIENCE

**IntuitiveMotion.ai** | **Mechanical Engineering Intern** | Boston, MA

July 2025 - Present

- Built and assembled mobile camera support structures using 80/20 extrusions, 3D-printed jigs, and hand-cut materials to achieve optimal field-of-view coverage; assisted in on-site troubleshooting and data collection for vision system development.
- Design hardware solutions in SolidWorks, including waterproof cases and custom components, to address mechanical and environmental challenges during prototyping.
- Fabricate and iterate mechanical components, including rotational and interlocking elements, using 3D-printed jigs, and hand-cut materials; tested multiple design variations to improve stability and performance, identifying issues and proposing solutions during rapid prototyping cycles.

**Stephanie E. Pierce Lab** | **Research Intern** | Cambridge, MA

Jan 2025 - August 2025

- Design and fabricate biomimetic vertebral columns (BVCs) using 3Matic and custom 3D-printed molds; cast multipart silicone structures replicating early tetrapod spinal morphology for physical testing in aquatic environments.
- Use water-based flapping mechanisms to test BVC performance and evaluate trade-offs between stability and flexibility, analyzing dynamic metrics such as thrust, long-axis rotation, and cost of transport.

**Aizenberg Laboratory** | **Research Intern** | Allston, MA

Dec 2023 - Aug 2024

- Prototype and demonstrate a proof of concept for an all-season window technology regulating indoor access to external cold.
- Rapidly develop acrylic devices and model houses to measure energy usage and determined optimal fluid concentrations in titanium dioxide and carbon water for specific temperature environments; Prototypes 20% more efficient than normal windows

## PROJECTS

**Bridge Building Competition**

May 2025

- Achieved a 1250:1 strength-to-weight ratio by designing and building a 0.2 kg all-wood arch bridge that withstood 250 kgf, using SolidWorks and FEA analysis to optimize truss geometry and reinforcement.
- Simulate structural performance to identify weak points, then refine the design with triangular bracing and top rods to maximize load capacity within competition constraints.

**Versatile All-Terrain Robot for Turf Wars Competition**

Sep 2024 - Dec 2024

- Machine from scratch with team of 5 Polyoxymethylene, aluminum, silicone, and acrylic using the CNC mill, lathe, horizontal and vertical bandsaw, drill press, and laser cutter; Designed all components of robots with GD&T in Solidworks
- Lead the design and fabrication of the claw (significant in robot function); Team won 2<sup>nd</sup> place in competition

**Conflux X Stockholm Three Body Project** | **Hardware Team**

Sep 2024 - April 2025

- Design a microcontroller-based, serial-communication system between Python and Arduino with multiplexed motor control
- Execute installation in team of 4 for installation in Sweden, "Three-Body: How to Explain Relationships with Physics?"

## SKILLS

**Machining & Manufacturing:** CNC Mill, Lathe, Bandsaw, Laser Cutter, 3D Printing, Silicone Casting, GD&T

**Programming & CAD:** SOLIDWORKS, Python, R, JavaScript, Arduino, MATLAB, MS Office, COMSOL, 3Matic, Mimics