

# Hannah Nguyen

(781) 952-4493 | [hnguyen@college.harvard.edu](mailto:hnguyen@college.harvard.edu) | [linkedin.com/in/hannahnguyendev](https://www.linkedin.com/in/hannahnguyendev) | [hannahnguyendev.github.io](https://hannahnguyendev.github.io)

## EDUCATION

**Harvard College** | GPA: 3.7/4.0 | Cambridge, MA

May 2027

S.B. Candidate in Mechanical Engineering, Secondary in Computer Science, Citation in Vietnamese

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

**Randolph High School** | Valedictorian | GPA: 4.8/4.0 | Randolph, MA

June 2023

Asian Cultural Club President, Math Team, K12 Math Tutor, Founded town-wide youth Art-A-Thon, Newspaper Club Editorial Team, Tennis Team

## EXPERIENCE

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

Jan 2025 - Present

- Design biomimetic vertebral columns (BVCs) using 3Matic; 3d print molds and assemble multipartite structures with silicone materials to replicate vertebral morphology of early tetrapods.
- 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

- Prototyped and demonstrated a proof of concept for an all-season technology for regulating indoor access to external cold.
- Rapidly developed acrylic devices and model houses to measure energy usage and determined optimal fluid concentrations in titanium dioxide and carbon water for specific temperature environments.

## PROJECTS

**Bridge Building Competition** | **Team Chappell Prone (to Buckle)**

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.
- Simulated structural performance to identify weak points, then refined the design with triangular bracing and top rods to maximize load capacity within competition constraints.

**Biomechanical Reconstruction of Pterosaur** | **Project Lead**

Dec 2024 - Present

- Engineer and optimize a quadrupedal launch mechanism for pterosaur-inspired robotics, iterating on latch-mediated spring systems using SolidWorks, COMSOL, and MATLAB.
- Rapid prototype and validate spring-loaded launch mechanisms with torsion springs, spring steel, 3D printing, and laser-cut components, refining structural integrity and launch efficiency through mechanical testing.

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

Sep 2024 - Dec 2024

- Machined 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
- Led 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 Co-Lead**

Sep 2024 - April 2025

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

## SKILLS

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

**Programming & CAD:** SOLIDWORKS (CSWA), Python, JavaScript, Arduino, MATLAB, MS Office, COMSOL