

Hannah Nguyen

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EDUCATION

Harvard College | GPA: 3.8/4.0 | 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 devices and models to measure energy usage and determine optimal fluid concentrations

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.

Conflux BlackBox Gallery | **Co-Founder**

Jan 2024 - Present

- Lead a team of 4 in building Harvard's first student-run gallery, constructing an 8x10 ft space using wood.
- Collaborate with students to exhibit experiential, non-traditional audiovisual works of art.

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 2nd place in competition

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.

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

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