Hannah Nguyen

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EDUCATION

Harvard College | GPA: 3.8/4.0 | Cambridge, MA **May 2027**
S.B. Candidate in Mechanical Engineering

- **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.
- Fabricated and iterated 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**
- 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.
- 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 2nd 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, Woodworking, Silicone Casting, GD&T
Programming & CAD: SOLIDWORKS, Python, R, JavaScript, Arduino, MATLAB, MS Office, COMSOL, 3Matic, Mimics