Hannah Nguyen

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EDUCATION

Harvard College | GPA: 3.7/4.0 | Cambridge, MA **Sep 2023 - May 2027**

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

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

Randolph High School | Valedictorian | GPA: 4.8/4.0 | Randolph, MA **Aug 2019 - June 2023**

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

EXPERIENCE

Hernandez-Nunez Lab | Research Intern | Biolabs, Cambridge, MA **Dec 2024 - Present**

- Developing a custom-designed stereomicroscope and fluorescence microscope for targeted optical stimulation experiments.
- Innovating laser-based system for optogenetic stimulation of neurons in zebrafish for detailed analysis of brain-body interactions.
- Participating in workshops for data-modelling, microscopy, bioengineering, laser systems, microfabrication, etc.

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

Biomechanical Reconstruction of Pterosaur | Project Lead **Dec 2024 - Present**

- Leading team of 5 in experimental investigations into the launch (and future, flight) mechanics of a miniature pterosaur model, using CAD designs with optimized weight distribution and material cavities for iterative testing.
- Prototyping and testing pneumatic and hydraulic launch mechanisms to analyze energy efficiency and actuation strategies inspired by biomechanical systems.

Versatile All-Terrain Robot for Turf Wars Competition **Sep 2024 - Dec 2024**

- Worked with team to design all parts in Solidworks and machined by hand Polyoxymethylene, aluminum, silicon, and acrylic using the CNC mill, lathe, horizontal and vertical bandsaw, drill press, and laser cutter
- Main role in designing and fabricating the claw hand (significant in robot function); 2nd place

Organ-Organ (Body Organ that plays Organ Music) **Sep 2024 - Dec 2024**

- Designed silicon mold in Solidworks, 3D printed, casted 28 inches of length, and hooked up with pressure sensors into VCV Rack

Conflux X Stockholm Three Body Project | Hardware Team **Sep 2024 - Present**

- Executing installation for collaborative installation in Sweden, “Three-Body: How to Explain Relationships with Physics?”
- Designing a microcontroller-based control system with multiplexed motor control for continuous textile movement.

ES50 Dance Dance Glow Grid **Jan 2024 - May 2024**

- Designed and developed pressure sensor-controlled light tiles with Arduino, pullup resistor network, LEDs, wood, foam.

Conflux BlackBox Gallery | Co-Founder **Jan 2024 - Present**

- Led a team of 5 in building Harvard's first student-run gallery, constructing an 8x10 ft space using wood.
- Collaborating with students to exhibit experiential, non-traditional audiovisual works of art.

SKILLS

Machining & Manufacturing: Hand Tools, CNC Mill, Lathe, Vertical & Horizontal Bandsaw, Drill Press, Molding, Laser Cutter, FDM Printing, Wood Carving, Wood Turning, Casting

Programming/CAD: SOLIDWORKS, Python, JavaScript, Arduino, MATLAB, Microsoft Office (Excel), COMSOL