

AUDREY CHENG

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EDUCATION

Harvard University | Expected 12/2026

Cambridge, MA

B.S. in Mechanical Engineering with a citation in Mandarin Chinese, GPA 3.87

Relevant Coursework: Thermodynamics, Computational Structural and Solid Mechanics, Mechanics of Solids, Computer-Aided Machine Design, Mechanical Systems, Intro to Electrical Engineering, Mechanics and Relativity

RELEVANT EXPERIENCE

Materials Discovery and Applications Group

Boston, MA

Researcher and Program for Research in Science and Engineering (PRISE) Fellow

June 2024 – Present

- Designed and optimized a one-way valve using a sequence of multilayer dielectric elastomer actuators.
- Developed 15+ iterative prototypes for a soft pump using SolidWorks, 3D printing, and laser cutting.
- Conducted experimental testing and validation using LabVIEW, HV power supply, and a custom switch box.
- Presented research findings through a technical abstract and oral presentations.

Radcliffe Institute for Advanced Study

Cambridge, MA

Radcliffe Research Partner

September 2024 – January 2025

- Researched HVAC system efficiency and designed ductwork in SolidWorks based on typical gallery airflow for museum installations and ASHRAE standards.
- Applied engineering design and thermodynamics principles to collaborate on an interdisciplinary project bridging technology and artistic design.

Miller Electric Company

Jacksonville, FL

Engineering, Prefabrication, and VDC Intern

March 2025 – August 2025

- Collaborated with BIM/VDC teams to model electrical conduit in Revit and resolve clashes for large-scale projects, including hospitals and airplane hangars.
- Contributed to the design of Miller Electric Company's new prefabrication shop and offices by preparing permit drawings, luminaire schedules, and load calculations.
- Developed 3D models of prefabrication equipment in Revit and AutoCAD to support internal layout planning and efficiency.

Harvard University Department of Physics

Cambridge, MA

Course Assistant

January – May 2024

- Led weekly office hours for 50+ students, clarifying mechanics and statistical physics concepts.
- Evaluated problem sets and guided students through complex problem-solving strategies.

PROJECTS

Wireless Pacman Robotics Project

Built circuits for Bluetooth-controlled robots and developed a light-sensing tag mechanism using Arduino. Designed 3D printed casing components in SolidWorks and troubleshoot hardware/software to optimize performance.

Robot Competition

Designed and fabricated a robot using SolidWorks and machine tools including 3D printers, CNC mill, lathe, laser cutter, and silicone molding. Conducted tolerance analysis for part fit and created engineering drawings. Placed 4th overall.

Kirigami FEA

Performed finite element analysis on Neo-Hookean kirigami sheets to measure out-of-plane deformations and optimize material behavior for various cut geometries using Python scripting and ABAQUS.

SKILLS AND INTERESTS

Design & Analysis: SolidWorks, AutoCAD, Revit, ABAQUS, COMSOL.

Software: MATLAB, Python, LabVIEW, Arduino.

Prototyping & Fabrication: 3D printing, laser cutting, CNC milling, lathe machining, silicone molding.

Languages: English (native), Mandarin Chinese (intermediate-advanced).

Other Interests: studio art (sculpture, ceramics), sewing, upcycling, costume design.