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 3.88
Relevant Coursework: Product Design Process (cross-registered at MIT), Engineering Problem Solving and Design Project, 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 BIM Intern   *March 2025 – August 2025*
- Modeled electrical conduit in Revit 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 for Mechanics and Statistical Physics   *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 troubleshot 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.

KoboClicker
Co-led mechanical design of a handheld data-collection device for humanitarian crisis response, developed CAD in Onshape and rapidly prototyped using 3D printing, wrote technical specifications, and conducted device testing.

SKILLS AND INTERESTS

Design & Analysis: SolidWorks, Fusion, Onshape, AutoCAD, Revit, ABAQUS, COMSOL.
Software: MATLAB, Python, LabVIEW, Arduino, HTML & CSS.
Prototyping & Fabrication: 3D printing, laser cutting, CNC and manual milling, lathe machining, silicone casting.
Languages: English (native), Mandarin Chinese (intermediate-advanced).
Other Interests: studio art (sculpture, ceramics), sewing, upcycling, costume design.