

Melody M. Chu

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EDUCATION

Carnegie Mellon University | Bachelor of Science in Mechanical Engineering
Minors: Design, Human-Computer Interaction (HCI)
GPA: 3.7/4.0 | **CMU Dean's List** (2022 -2024)

Pittsburgh, PA
May 2025

PROFESSIONAL EXPERIENCE

Relativity Space, Vehicle Mechanisms Engineering Intern May 2024 - Aug 2024

- Reverse-engineered sensors to create detailed documentation and prototypes for in-house manufacturability.
- Designed and prototyped a thruster installation tool with custom clamps using CAD and hand calculations.

CMU Department of Engineering, Teaching Assistant, Design & Fabrication (24-672) Jan 2024 - May 2024

- Aided graduate-level product design course for technical drawing, design processes, and prototyping techniques.
- Delivered tutorials, demonstrations and workshops of advanced fabrication methods at TechSpark makerspace.
- Evaluated problem sets and provided constructive feedback on students' design and prototyping projects.

Bimotal, Inc., Mechanical Design Intern May 2023 - Aug 2023

- Redesigned a battery pack for market via UX research, hand-sketches, 3D-printed mockups, and CAD, achieving a compact, aesthetically pleasing design that met all technical specifications.
- Built and tested a rig to measure noise and vibration under varying torque and speed conditions.

Center for Atmospheric Particle Studies Research Lab, Student Researcher Jun 2022 - Aug 2022

- Integrated custom hardware and motion-control electronics for automated atmospheric carbon analysis device.
- CAD-modeled, fabricated, and assembled mounts, electronics housings, and wiring.

NASA Goddard Space Flight Center, Electromechanical Systems Engineering Intern Aug 2020 - Aug 2021

- Developed autonomous navigation simulation using machine learning via MATLAB and custom Arduino robot

PROJECTS

Junk Jenius (Awarded Best Prototype), Mechanical Engineering Capstone Project Oct 2024 - Dec 2024

Interactive water bottle crusher combining fun and efficiency to encourage recycling.

- Designed all CAD models and final product mockup to test, iterate, and communicate with team during build.
- Led team in physical prototyping, from lo-fi samples to woodworking, laser cutting, and electronics configuration.

CM4U, User Experience Research and Design Project Oct 2024 - Dec 2024

A mobile app gamifying campus events to promoting student engagement and wellness

- Conducted interviews and generative research to find how we can create space and time for busy CMU students.
- Used concept mapping and high-fidelity Figma wireframes to propose final app concept and design in a team.

Pet Simulator (Awarded 1st Place), Hack112 Hackathon Project Apr 2022

- Designed playful and cohesive UI and illustration for interactive game; collaborated in coding gameplay in Python.
- Developed project with team in 24 hours, winning 1st place among 100+ participants in public showcase

ACTIVITIES & LEADERSHIP

Moneythink, Director of Design Aug 2024 - Nov 2024

- Rebranded club with new logo, fonts, and identity, design templates, posters, and social media content.
- Recruited and led cohesive team of student designers for social media and communications.

Morewood Gardens Makerspace, Makerspace Attendant Sep 2022 - May 2023

- Guided patrons in using 3D printers, sewing machines, and soldering stations safely and effectively.

Other Activities: Society of Women Engineers, User Experience Association, Dancer's Symposium, K-Pop Dance Club

SKILLS

Physical Prototyping: 3D Printing, Laser Cutting, Woodworking, CNC Machine, Manual Mill, Electronics/Soldering

Mechanical Design: CAD (SolidWorks, Siemens NX), FEA, Motion Studies, Rendering, MATLAB, Arduino C

Design & Digital Tools: Adobe Creative Suite, Figma, Wireframing, Python, HTML, CSS, JavaScript