# Audrey Cui

**audcui@mit.edu | portfolio: https://audreycui.github.io/**

## EDUCATION

**Massachusetts Institute of Technology** — **Cambridge, MA**
***MS in Mechanical Engineering*** — *expected May 2026*
***BS in Computer Science*** — *May 2024*
*GPA 4.9/5.0*

- Select Coursework (*graduate course)**: Optics*, Compliant Mechanisms & Machine Design*, Mechatronics*, Medical Device Design*, Underactuated Robotics*, Dynamics & Controls***, Design & Manufacturing I & II, Electronics for Mechanical Systems I & II, Microcomputer Lab, Machine Learning, Signal Processing

## EXPERIENCE

**Tadesse Lab Research Assistant** — *Sep 2023 - present*

- Working in the Tadesse Lab on optical medical diagnostic devices for point of care deployment
- Designing hardware stack for a high-throughput Raman spectroscopy platform, integrating multiple mechanical and electrical systems using custom firmware & custom PCBs

**Additive Manufacturing Curriculum Engineer** — *Sep 2024 - present*

- Creating online professional development course content for the MIT xPro Additive Manufacturing course

**NVIDIA Bioinformatics Intern** — *May 2022 - Aug 2022*

- Designed, implemented, and benchmarked semi supervised learning frameworks to improve transformer model performance on downstream molecular property prediction tasks

**MIT CSAIL Undergraduate Research Assistant** — *Sep 2020 - Jun 2022*
***Local Relighting of Real Scenes*** - *https://arxiv.org/abs/2207.02774*
***Paint by Word*** - *https://arxiv.org/abs/2103.10951*

- Worked in the Torralba Lab on generative adversarial network (GAN) inversion, understanding GAN image synthesis behavior & feature representation, dataset generation, and image relighting
- First-authored paper on local image relighting
- Co-authored paper on zero shot image manipulation

**MIT Electronics for Mechanical Systems I&II TA** — *Sep 2023 - May 2024*

- Taught intro electronics courses for MechE undergrads, covering circuit analysis/design, bench equipment use, transistors, computer vision, microcontrollers, signal processing, PCB design

**Other Teaching & Extracurriculars**

**MIT Cascade:** Co-taught weekly electronics & microcontroller classes to local Boston area high school students using an original curriculum inspired by MIT's electronics courses — Oct 2023 - Nov 2023
**Signal Processing Lab Assistant:** Taught signal processing during office hours — Sep 2022 - May 2023
**MIT-Wales Global Teaching Labs:** Taught Welsh secondary students how to make a car robot using an original curriculum covering Solidworks CAD, 3D printing, breadboarding, & Arduino programming — *Jan 2023*
**MIT Spinning Arts**: 2023-2024 club President. Organize fire safety trainings, prop making workshops, prop spinning workshops, fire performances, weekly practices, documentation, and general club logistics — Sep 2021 - May 2024

## SKILLS - see portfolio https://audreycui.github.io/

**Mechanical & Design:** CAD (Fusion360 & Solidworks), CAM (Fusion360), CNC Milling, Manual Mill & Lathe. Waterjet, MIG/TIG welding, FDM/SLA 3D printing, Lasercutter, Adobe Illustrator & Photoshop
**Electronics & Hardware:** PCB design (Kicad), PCB milling, 8051 & RISC-V Assembly, C, Arduino, Raspberry Pi, PSOC
**Machine Learning & Software:** Pytorch, Tensorflow, Python, Java, HTML/CSS/JS, Drake, Numpy, Docker, Git, Matlab, NI LabVIEW

## HONORS

**2024** Martin Departmental Fellowship recipient | **2021** NCWIT Collegiate Award Finalist | **2020** Society of Women Engineers Scholarship Recipient | **2020** Equitable Excellence Scholarship Recipient | **2019** MIT THINK Scholars Finalist & overall 2nd place winner | **2018 & 2019** USA Biology Olympiad Top 50 | **2018** AIME Qualifier