

## EDUCATION

### Carnegie Mellon University

B.S. Electrical & Computer Engineering, minors in Physical Computing & HCI

May 2024

GPA 3.8

## RESEARCH & WORK EXPERIENCE

### HARP Lab @ CMU

May 2023 - May 2024

Full-Stack Developer & Research Assistant

Project lead for online multiplayer user study using **Flask**, **Socket.io**, **SQL/SQLAlchemy**, **Javascript**, & **HTML/CSS**. Consulted on **study design** and algorithmic implementation of project aimed at **transparency** in **human-AI interactions**.

### ECE @ CMU

Jan 2023 - May 2023

Teaching Assistant for 18-290: Signals & Systems

### TRACES Lab @ CMU / Center That CARES

May 2023 - Aug 2023

Teacher & Research Assistant

Helped design and teach creative engineering program with a focus on **co-design** with lower-income students and communities. Researched development of a **low-cost** suite of tools for introducing students to **physical computing** and programmatic thinking; collaborated with students to synthesize their interests with course material.

## SELECTED PROJECTS

more @ [shenaichan.github.io](https://shenaichan.github.io)

### Real-Time Operating System

Feb 2024 - Mar 2024

Designed and programmed a **real-time reservation kernel** with **rate-monotonic scheduling** and **mutexing/immediate priority ceiling protocol** to manage multiple threads and shared resources.

### Robotic Mobility Assistant for Honda Research Institute

Jan 2024 - May 2024

Led the **design research** committee and **human-robot intelligence** team in building a public guide robot prototype for Honda in capstone course. Spearheaded **needs-finding**, **literature review**, and **storyboarding** processes and **presented work to stakeholders**. Architected **LLM-powered voice assistant** for context-aware navigation vocal interface. Led integration of **IoT network** into navigation website.

## TECHNICAL SKILLS

Python, C, Flask, HTML/CSS, Javascript, Websockets, SQL/SQLAlchemy, Git, Webscraping, Pandas, NumPy, Laser Cutting, 3-D Printing, Arduino, Processing

## DESIGN SKILLS

Figma, Prototyping, Storyboarding, Wireframing, Personas, Mockups, Illustration, Co-Design, Storytelling

## RELEVANT COURSEWORK

Distributed Systems, Real-Time Embedded Systems, Rapid Prototyping of Computer Systems, Interaction Design, Human-Centered Software, Digital Signal Processing, Human-Robot Interaction, Machine Learning, Sensors in HCI, Educational Tech

## AWARDS/HONORS

Member of Eta Kappa Nu (ECE Honor Society), Recipient of Frank-Ratchye Further Fund grant for arts & tech research, Adamson Award for Non-Fiction Writing