

Catherine Kim

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EDUCATION

University of Michigan

Aug 2020 – May 2024

BS Computer Science, Cognitive Science

Ann Arbor, MI

- Cumulative GPA: 3.8/4.0
- Relevant coursework: Discrete Math, Theory of Computation, Data Structures & Algorithms, Intro to Computer Organization, Web Systems, User Interface Development, Digital Product Design

WORK EXPERIENCE

EECS 183: Elementary Programming Concepts

Aug 2022 – Present

Teaching Assistant

Ann Arbor, MI

- Lead office hours and lab instruction for a class size of 1200 students to teach introductory programming concepts and **C++**.
- Updated staff page on course website using **Ruby**, **Jekyll**, and **YAML**.

University of Michigan Mars Rover Project Team

Aug 2020 – Present

Software Engineer

Ann Arbor, MI

- Constructed GUIs, utilizing **HTML/CSS**, **JavaScript**, and **Vue.js**, that interact with the Rover in real-time by sending and receiving messages through communication channels.
- Embedded **C++** backend Rover arm controls into the GUIs.
- Utilized **Vue.js** to design an interface that does an automated sequence of dipping pH strips in water and then retracting after 10 seconds.

Qualcomm

May 2022 – Aug 2022

Software Engineering Intern

San Diego, CA

- Overhauled the UI infrastructure of Qualcomm's camera pipeline testing system.
- Implemented a VS Code extension testing module that interacts with Android's camera hardware abstraction layer (HAL) using **TypeScript**, **JavaScript**, and **HTML/CSS**.
- Built a JSON use case builder that takes user inputs to generate a nested JSON file used for testing.

University of Michigan

May 2021 – Aug 2021

Research Assistant

Ann Arbor, MI

- Analyzed detection of lung nodules in computed tomography using machine learning.
- Programmed a **Python** shell script to deploy a DCNN model on training sets of over 1000 MRI scans.

PROJECTS

Instagram Clone

Fall 2022

- Implemented a full-stack Instagram clone with **HTML**, **CSS**, **Flask**, **Python**, and **SQL**.
- Devised server-side site dynamic pages that render templates on demand when a user loads a page.
- Generated a login page that hashes the user's password and saves user information using cookies.

City Pathfinder

Fall 2021

- Designed an algorithm to solve the Traveling Salesman's Problem that calculates the optimal path in less than 30 seconds for any graph with 40 or fewer cities.
- Applied Prim's Algorithm to build a minimum spanning tree to form lower bounds; Combines with a heuristic upper bound to prune 99.99% branches.

TECHNICAL SKILLS

- Languages: C/C++, JavaScript, TypeScript, Python, SQL
- Frameworks: React.js, Vue.js, Flask
- Technologies: HTML/CSS, Linux, Git, LaTeX, VS Code
- Design Software: Figma, Adobe Photoshop, Adobe Illustrator, Pivotal Tracker, InVision