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, Database Management Systems, Digital Product Design

WORK EXPERIENCE

EECS 183: Elementary Programming Concepts **Aug 2022 – Present**
Teaching Assistant *Ann Arbor, MI*

- Facilitated office hours and lab instruction on a class size of ~1200 to aid students with their understanding of 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, using **HTML/CSS, JavaScript,** and **Vue.js**, that interact with the Rover in real-time by sending and receiving messages through communication channels.
- Embedded backend Rover arm controls into the GUIs using **C++**.
- Utilized **Vue.js** to create 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*

- Used **TypeScript, JavaScript,** and **HTML/CSS** to create a VS Code extension used for Qualcomm camera pipeline testing.
- Created a JSON use case builder that takes user inputs to generate a nested JSON file used for testing**.**
- Implemented an automated testing button that reads a JSON file and outputs the test results in a terminal.

University of Michigan **May 2021 – Aug 2021**
Research Assistant *Ann Arbor, MI*

- Radiology and lung cancer research, concentrating on using machine learning for the detection of lung nodules in computed tomography.
- Created a **python** shell script to deploy a DCNN model on training sets of over 1000 MRI scans.

PROJECTS

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, using **C++**, to create a minimum spanning tree to form lower bounds, which combines with a heuristic upper bound to prune 99.99% of the branches.

Piazza Machine Learning **Winter 2021**

- Applied machine learning techniques using **C++** to predict the subject of a Piazza post with 90% accuracy.
- Trained program to associate certain word patterns with a particular subject using a simplified multivariate Bernoulli Naïve Bayes classifier.

TECHNICAL SKILLS

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