

# Minsi Hu

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## Education

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University of Maryland, College Park (UMD)

- ❖ B.S. Computer Science (Machine Learning Track)
- ❖ B.S. Mathematics (Applied Math Track)

GPA: 4.00 / 4.00  
Expected May 2025

### Relevant Coursework

- ❖ Machine Learning | Deep Learning | Computer Vision | Cryptography | Graph Theory | Algorithms | Advanced Data Structures | Web Development | Data Science | Real Analysis | Numerical Analysis | Probability Theory | Theory and Methods of Statistics

## Work Experience

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Teaching Assistant | [University of Maryland](https://www.universityofmaryland.edu)

August 2023 – Present

- ❖ Teaching Assistant for the CMSC132: **Object-Oriented** Programming II, CMSC216: Introduction to **Computer Systems**, and STAT410: Introduction to **Probability Theory** courses.

Undergraduate Research Assistant | [University of Maryland](https://www.universityofmaryland.edu), [NMCL](https://www.nmcl.org)

December 2023 – Present

- ❖ Developed **software** to assess the efficacy of various **feature extraction** methods (functional connectivity, graph centralities) and **machine learning models** (SVMs, MLPs, CNNs) for classifying **electroencephalography** (EEG) data.
- ❖ Currently investigating the viability of **deep neural networks** as classification algorithms for EEG and utilizing **saliency methods** (heat maps) as a post-hoc analysis to reveal insights into important connections between different brain regions.

WHK Student Intern | [National Cancer Institute \(NCI\)](https://www.nationalcancerinstitute.gov), [Dr. Kylie Walters](https://www.drkyliewalters.com)

June 2021 – May 2022

- ❖ Conducted research on the **USP14 inhibitor** under mentor Dr. Kylie Walters and her team, utilizing PyMOL to generate protein models of enzymes in the ubiquitin-proteasome pathway.

## Personal Projects

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[Digit Recognizer](#) | C++

May 2023 – August 2023

- ❖ Developed a C++ implementation of a **convolutional neural network** (CNN) from scratch, utilizing **deep learning** techniques and **linear algebra** to recognize handwritten digits from the [MNIST](https://www.yann.lecun.com/experiments/mnist/) database with more than 99% accuracy.

[Emotion AI](#) | Python & TypeScript | Bitcamp 2024

April 2024 – April 2024

- ❖ Engineered a real-time facial sentiment analysis and chatbot application using **OpenCV**, **TensorFlow**, **OpenAI API**, and **React + TypeScript** to recognize facial expressions in real-time with a custom-trained CNN, and curate personalized responses based on detected emotions.

[Sorting Simulator](#) | Java | Bitcamp 2023

April 2023 – May 2023

- ❖ Designed an advanced sorting algorithm visualizer with **Java Swing**, showcasing real-time array updates and collecting metrics (swaps & insertions) as various **sorting algorithms** (mergesort, quicksort, introsort) are applied, enabling **algorithm evaluation**.

## Skills

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**Languages** | Python, C++, C, Java, Rust, OCaml, R, Javascript, Typescript, SQL, C#

**Other** | Pandas, TensorFlow, OpenCV, HTML, CSS, React, MySQL, MATLAB, Git, LaTeX