

# ROBIN HWANG

New York City Metropolitan Area

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## EDUCATION

### University of Michigan – Ann Arbor

Expected May 2026

B.S. Computer Science

GPA: 3.51

Coursework: Applied Parallel Programming with GPUs, Software Engineering, Data Structures and Algorithms, Programming and Data Structures, Discrete Mathematics, Introduction to Computer Organization, Foundations of Computer Science, Computational Linear Algebra

## SKILLS

<b>Programming Languages</b>	Python, C++, Java, HTML, CSS, JavaScript, React, SQL, R
<b>Software Skills</b>	Flask, CUDA, PyTorch, PostgreSQL, MongoDB, Git, pandas, Figma, Netlify, Firebase, AGILE methodology, APIs, React, Distributed Systems, Tableau, Express.js, Web3.js, Tailwind
<b>Office Tools</b>	Microsoft Word, Microsoft Excel, Microsoft PowerPoint, Microsoft Publisher
<b>Spoken Languages</b>	English, Korean

## WORK EXPERIENCE

### Software Engineering Intern

Jun. 2024 – Jan. 2025

Stanford Linear Accelerator Center (SLAC National Accelerator Laboratory)

Menlo Park, CA

- Developed and optimized physics simulations for accelerator control using Impact-T and Bmad (frameworks in Python), improving modeling accuracy and efficiency
- Converted serial programs to parallel programs to accelerate complex simulations, leveraging high-performance computing (HPC) clusters for large-scale data processing and analysis
- Implemented automation scripts to streamline simulation workflows, reducing manual configuration time and improving reproducibility of accelerator experiments

### Machine Learning Engineering Intern

Jun. 2023 – Aug. 2023

Stanford Linear Accelerator Center (SLAC National Accelerator Laboratory)

Menlo Park, CA

- Optimized water-cooling systems using Python, PyTorch, and data from FAST particle accelerator injector implementing a long short-term memory (LSTM) neural network
- Improved speed of normalization of temperature by up to five times using model predictive control rather than traditional proportional-integral-derivative (PID) controller or other feed-forward neural network solutions
- Prepared a technical report and presented a lecture at the laboratory on the benefits of utilizing machine learning in optimizing particle accelerators and physics

## PROJECT EXPERIENCE

### Seiyaku

Jan. 2025

- Designed and developed a trustless, peer-to-peer betting protocol utilizing smart contracts on Ethereum (Solidity)
- Built a backend using Express.js and Web3.js for transaction handling, gas estimation, and contract interactions interacting with a MongoDB database
- Developed a React-based frontend with Tailwind CSS, dynamic animations, and wallet interaction listeners for an interactive user experience

### Search485 (tf-idf/PageRank Search Engine)

Nov. 2024 – Dec. 2024

- Developed a search engine to index Wikipedia pages, incorporating user-adjustable TF-IDF and PageRank weights for customizable relevance scoring and demonstrating proficiency in information retrieval
- Implemented a MapReduce pipeline to enable parallel data processing of large-scale Wikipedia HTML archives

### Piazza Post Organizer

Mar. 2023 – Apr. 2023

- Created a machine learning algorithm using C++ and the STL to categorize posts on the web application Piazza depending on certain patterns in their content
- Implemented a binary search tree (BST) to recursively, for the sake of efficiency, analyze and search for posts

## LEADERSHIP EXPERIENCE

### Conference Chairperson

Sep. 2023 – Apr. 2024

Society of Asian Scientists and Engineers (SASE)

Ann Arbor, MI

- Led and organized the 2024 SASE Midwest Regional Conference, connecting the Midwestern Asian community to professional opportunities
- Coordinated efforts leading to 262 registered attendees, marking a 153% increase from the previous record set in 2018
- Oversaw 11 workshops run by sponsors and team members, contributing to professional development of attendees