

Michelle Liu

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EDUCATION

Brown University

Sep 2021 – May 2025

Bachelors of Science, Applied Math – Computer Science, GPA: 4.00

Providence, RI

- **Relevant Courses:** Machine Learning, Deep Learning, Computer Systems, Theory of Computation, Data Structures & Algorithms, Web Development, Numerical Methods, PDEs, Operations Research, Game Theory, Graph Theory

EXPERIENCE

Brown University

Aug 2022 – Present

Undergraduate Teaching Assistant

Providence, RI

- Designed assignments for **natural language processing**, **machine learning**, statistics, and functional programming courses
- Facilitated interactive workshops to foster collaboration, reinforce key concepts, and tackle challenging problem sets
- Supported over 300 *individuals* by moderating an online question forum and providing guidance during office hours

JPMorgan Chase & Co.

Jun 2023 – Aug 2023

Software Engineer Intern

Jersey City, NJ

- Leveraged Splunk and **AWS** to construct a robust data pipeline for extracting and preprocessing call center log data
- Implemented outlier detection and **classification models**, achieving over 90% *accuracy* identifying irregular and bad calls
- Created time series models to find general trends in problematic calls across various regions, supporting over 50,000 *users*

Visual Prosthesis Lab

Sep 2022 – Dec 2022

Undergraduate Research Assistant

Providence, RI

- Researched and implemented Python **computer vision** frameworks to aid visually impaired individuals in navigation
- Developed prosthetic devices by leveraging YoloV5 for object localization, Text2Voice for intuitive grasping, and OCR

Western Digital

May 2022 – Aug 2022

Software Development Engineer Intern

Milpitas, CA

- Designed test prioritization algorithm using **Python** and **machine learning**, increasing test cycle efficiency by over 50%
- Constructed regression, random forest, XGBoost, and neural network models to predict test failures with 95% *accuracy*
- Utilized **FastAPI** and **SQL** queries to access and post algorithm performances on **Elasticsearch**

PROJECTS

Jreamboard | React, Node.js, JavaScript, Express 🐙

- Created a podcast and audio-based social media web application for the Jream Foundation
- Prototyped frontend using **Figma** and implemented UI using **React**, designing a login and audio posts page
- Constructed backend architecture using **Express** and **PostgreSQL** to store audio and account information

Senate Environmental Vote Clustering | Python 📄

- Leveraged hierarchical clustering with dendrogram analysis to analyze environmental voting behavior in the Senate
- Employed **Python**, **NumPy**, **scikit-learn**, **SciPy**, and **pandas** to process and visualize the data, uncovering insights

Caching I/O | C

- Designed caching system for file reading and writing, running 31% *faster* than C's standard library

Search Engine | Python

- Designed search engine for xml wiki files in a closed environment replicating Google's PageRank algorithm
- Optimized search results based on weighted graphs between pages and tf-idf relevance

ACTIVITIES & AWARDS

Applied Math Dept. Undergraduate Group | President

Mar 2022 – Present

Brown Machine Intelligence Community | Executive Board Member

Oct 2022 – Present

Anime Video Game Ensemble | Co-President & Founder

Sep 2021 – Present

Jane Street FTTB Electronic Trading Challenge 3rd Place

2022

Robinhood Hackathon for Social Good Bronze Award 🏆 📄

2022

AIME Qualifier

2018, 2021

SKILLS

Languages: Python (proficient); JavaScript, HTML, CSS, ReasonML, (intermediate); C/C++, Java, SQL, MATLAB (novice)

Frameworks & Tools: React, TensorFlow, NumPy, pandas, Git, Docker, AWS, Figma, WordPress, Microsoft Office, Agile, Jira

Interests: rock climbing, aerial silks, piano, music arrangement