

# 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, Reinforcement Learning, NLP, Computer Systems, Theory of Computation, Web Development, Numerical Methods, PDEs, Operations Research, Game Theory, Topology, Analysis, Statistics
- **Awards:** Jane Street Electronic Trading Challenge 3rd Place, Robinhood Hackathon for Social Good Bronze Award, Citadel Summer Invitational Terminal, National Science Bowl Top 32, AIME Qualifier

## EXPERIENCE

### Susquehanna International Group

Jun 2024 – Aug 2024

Incoming Quantitative Trading Intern

New York, NY

### Lightspeed

Jan 2024 – Present

Data Science Intern

Providence, RI

- Analyzed Easter trends in European restaurants, deriving insights on sales patterns with **Google Cloud BigQuery** and **SQL**
- Spearheaded TEMPO initiative to optimize table service pacing, leveraging **Python** and **data science libraries**

### Brown University

Aug 2022 – Dec 2023

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

### 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

### Jreamboard | React, Node.js, JavaScript, Express 📄

- Developed 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
- Implemented backend architecture using **Express** and **PostgreSQL** to store audio and account information

## SKILLS

**Languages:** Python (proficient); JavaScript, HTML, CSS, ReasonML, (intermediate); C/C++, 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