Michelle Liu

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EDUCATION

Brown University — Expected 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 FTTP 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