Michelle Liu

(775) 772-8748 | michelle_h_liu@brown.edu | michelleliu-4 | michelleliu4 | michelleliu4.github.io

EDUCATION

Brown University — Expected May 2025
Bachelors of Science, Applied Math – Computer Science, GPA: 4.00 — *Providence, RI*

- **Relevant CS Courses:** Machine Learning, Deep Learning, Computer Systems, Data Structures & Algorithms, Web Dev
- **Relevant Math Courses:** Numerical Solutions of Differential Equations, PDEs, Operations Research, Game Theory, Topology, Real Analysis, Abstract Algebra, Graph Theory, Number Theory, Statistics, Calculus III, Linear Algebra

EXPERIENCE

JP Morgan & Chase — June 2023 – Present
Software Engineer Intern — *Jersey City, NJ*

- Create real-time dashboard utilizing **React** to visualize call center data, supporting over **50,000 users**
- Construct call data pipeline integrating Splunk and **AWS** to facilitate development of machine learning classification models
- Achieved over 70% accuracy in predicting call failures using frameworks such as **Tensorflow**, **scikit-learn**, and **matplotlib**

Brown University — Aug 2022 – Present
Undergraduate Teaching Assistant — *Providence, RI*

- Develop assignments for **natural language processing**, **machine learning**, statistics, and functional programming courses
- Organize and lead collaborative workshops to reinforce conceptual ideas and address challenging problems
- Support over **300 students** through moderating online question forum and providing office hour assistance

Visual Prosthesis Lab — Sep 2022 – Dec 2022
Undergraduate Research Assistant — *Providence, RI*

- Research and implement **computer vision** frameworks in **Python** to assist visually impaired individuals with navigation
- Develop visual prosthetic devices with object localization utilizing YoloV5, grasping utilizing Text2Voice, 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*

- Employed k-means, hierarchical, and spectral clustering to analyze and identify patterns in senator environmental voting
- Utilized **Python**, **NumPy**, scikit-learn, SciPy, and **pandas** to visualize and process the voting data

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, Java, SQL, MATLAB (novice)
Frameworks & Tools: Git, NumPy, TensorFlow, React, Figma, WordPress