

Michelle Liu

☎ (775) 772-8748 | ✉ michelle_h_liu@brown.edu | in michelleliu-4 | 🌐 michelleliu4 | 🐙 michelleliu4.github.io

EDUCATION

Brown University

Expected May 2025

Sc.B. Applied Math – Computer Science, GPA: 4.00/4.00

Providence, RI

Relevant Coursework: Machine Learning, Deep Learning, Data Structures & Algorithms, Numerical Methods for Partial Differential Equations, Honors Statistics, Linear Optimization, Abstract Algebra

Teaching: Machine Learning (Spring 2023), Statistical Inference (Spring 2023), Functional Programming (Fall 2022)

Awards: Robinhood Hackathon for Social Good Bronze, Harvard WECODE Fellow, Citadel Terminal, Doyle Foundation Scholarship

University of Nevada Reno

May 2021

High School Dual Enrollment, GPA: 4.00/4.00

Reno, NV

Relevant Coursework: Topology, Real Analysis, Game Theory, Number Theory, Calculus III, Linear Algebra, Microeconomics

Awards: AIME Qualifier, National Science Bowl Top 32, Canada/USA Mathcamp Alumni, National Merit Scholar

EXPERIENCE

Visual Prosthesis Lab

Sep 2022 – Present

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, and neural network models to predict test failures with 95% accuracy
- Utilized **FastAPI** and **SQL** queries to access and post algorithm performances on **Elasticsearch**

Jane Street

Mar 2022

First-Year Trading and Technology (FTTP) Fellow

New York, NY

- Selected as one of 60 students for this highly competitive program to learn market-making and algorithmic trading
- Programmed trading bot in **Python** placing **3rd in electronic trading competition**

ACTIVITIES & LEADERSHIP

Brown Machine Intelligence Community

Oct 2022 – Present

Executive Board Member

Providence, RI

- Design machine learning projects and workshops such as MNIST, Flappy Bird, NLP, and neuro style transfer
- Lead conceptual workshops and assist students in understanding machine learning concepts and coding the projects

Applied Math Dept. Undergraduate Group

Mar 2022 – Present

Executive Board Member

Providence, RI

- Collaborate with board members to lead club of over **200 students** and create website (brownamdg.wordpress.com)
- Organize and coordinate social outreach for events such as the Applied Math Mixer and Advising Event

Cambridge Math Circle

Apr 2020 – Present

Mathematics Instructor

Cambridge, MA

- Teach online math classes and explain challenging concepts for 1st-8th grade students in the Cambridge area
- Construct advanced Beast Academy and AoPS lesson plans used by over **150 students**

PROJECTS

Jreamboard | React, Node.js, Express 🌐

- Created a podcast social media web application for the Jream Foundation at the JP Morgan **Code for Good Hackathon**
- 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

Citadel Datathon | Python 🌐

- Collaborated with team members to analyze geographical discrimination of loan applications using k-means clustering
- Utilized **NumPy**, **pandas**, seaborn, SciPy, and other Python libraries to construct visualizations

Search Engine | Python

- Designed search engine in a closed environment replicating Google's PageRank algorithm with tf-idf relevance

SKILLS

Languages: Python (proficient); ReasonML, Racket (intermediate); Java, Javascript, C, SQL, MATLAB (novice)

Frameworks & Tools: Git, NumPy, Tensorflow, Node.js, React, Express, PostgreSQL, Figma, WordPress