

# Michael Wang

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## EDUCATION

**Brown University, 3.94/4.00**

*Bachelor of Science in Applied Mathematics - Computer Science*

Providence, RI

*Expected Graduation May 2026*

**Hsinchu International School, 4.00/4.00**

*Valedictorian*

Hsinchu, Taiwan

*Class of 2022*

## CERTIFICATIONS

**Google Data Analytics Professional Certificate**

Coursera

## EXPERIENCES

**Undergraduate Research Assistant**

*Singh Lab @ Brown*

January 2024 – Present

*Providence, RI*

- Investigating **Machine Learning**, **Deep Learning**, and **Data Analytics** in the biology and genomics field
- Participating in **2 lab meetings** and **1 reading group** weekly to proactively engage with the latest works
- Currently involved with running experiments for edge accuracies in **9 Graph Neural Network Explainers**

**Research Intern**

*Institute of Information Science, Academia Sinica*

July 2024 – August 2024

*Taipei, Taiwan*

- Wrote YAML files and configured Executors for **Kuwa AI**, a privacy-focused **Gen-AI Orchestration System**
- Worked with latest technologies such as **Multi-Agent Frameworks** and **Retrieval-Augmented Generations**
- Constructed **2 Chatbots** powered by Large Language Models that can communicate with experts' perspectives
- Developed with **TAIDE**, a Large Language Model on traditional Chinese and Taiwanese culture, and **Llama 3.1**

**Natural Language Processing Teaching Assistant**

*Pano Education*

July 2023

*Taipei, Taiwan*

- Assisted a professor from the **University of Toronto** in teaching **Python** and **Natural Language Processing**
- Prepared daily technical materials for a class of **12 participants**, consisting of high school and university students
- Oversaw a total of **7 personal projects** while simultaneously mentoring multiple students with **Hugging Face**
- Successfully presented all final results to the **Mentorship Director**, **Mentorship Department**, and **Founder**

## PROJECTS

**Bruno Maps** | *Java, Spark, Maven, React, Typescript, CSS, Playwright*

Software Engineering

- Collaborated in a **team of 3** to develop a **full-stack travel planner** geared towards Brown University visitors
- Implemented **Dijkstra's algorithm** to optimize travel routes for locations within a **1 km radius** on campus
- Utilized the **Spark package** to manage relevant backend processes and maintain **server frameworks**
- Integrated **Maven builds** with **Playwright tests** to establish a comprehensive **end-to-end testing framework**

**Package Identifier** | *Python, Scikit, NumPy, Matplotlib*

Machine Learning

- Aimed to use traditional **Machine Learning** algorithms for **image recognition** up to **5 seeded packages**
- Built core **Computer Vision** functionalities, such as **feature point extraction**, **feature descriptor construction**, and **feature matching** algorithms
- Successfully averaged a **83% identification rate** in scenes with varying background colors, lightings, and tones

**Forest Segmentation** | *Python, TensorFlow, PyTorch, NumPy, Matplotlib*

Deep Learning

- Applied **Semantic Segmentation** to identify forested areas with a dataset of **5108 aerial images** from Kaggle
- Combined a pre-trained segmentation network with a fully convolutional discriminator network over **800 epochs**
- Achieved a **mean IoU accuracy of 80%**, overcoming challenges with a smaller dataset and outdated reference

## SKILLS

**Relevant Courses:** Software Engineering, Data Structures and Algorithms, Computer Systems Fundamentals, AI

**Technical Skills:** Java, Go, C, C++, Python, JavaScript, React, HTML, CSS, R, SQL, Tableau, Docker, Git

**Professional Skills:** Presentation, Collaboration, Communication, Research, Problem-Solving, Adaptability, Agility

**Language Skills:** Trilingual proficiency in English, Japanese, and Mandarin