

# Brian Zheng

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## Education

**Massachusetts Institute of Technology | 4.75 GPA**

September 2022 – May 2025

Bachelor of Science in Computer Science and Engineering

Coursework: Design and Analysis Algorithms, Computation Structures

## Skills

**Programming Languages:** Python, JavaScript (TypeScript), Java, C, Assembly

**Technologies:** Next.js, React, AWS, APIs, AI, OpenAI, Node.js, CSS, HTML, Microsoft VSCode, Git

**Languages:** English (native), Mandarin (conversational), Spanish (Seal of Biliteracy)

## Experience

**Kellis Lab @ MIT | Web App:** <http://seascapes.ai> | **Lab:** <http://compbio.mit.edu>

May 2023 – Present

Full Stack Web Developer for Idea Navigator

Cambridge, MA

- Optimized backend Pubmed parser by reducing load from 200+ GB to 1 GB and runtime from hours to seconds.
- Leveraged Prisma for efficient frontend data access, reducing loading times from seconds to milliseconds.
- Created cluster labels using OpenAI API and improved frontend speeds by caching label positions on the backend.
- Revamped user experience by incorporating a loading screen for seamless page transitions, implementing intuitive line drawing features, and introducing effective data filtering based on years for enhanced visualization.

## Schoolhouse.world

May – June 2022

June SAT Bootcamp Tutor

Egg Harbor Township, NJ

- Trained 5+ hours and completed 3 research tasks to provide data for a research study on tutoring strategies.
- Tutored learners 3 hours/week in algebra, trigonometry, geometry, and testing skills to improve their SAT scores.

## NJ Governor's School of Engineering and Technology

June – July 2021

AI Researcher, Game Developer

New Brunswick, NJ

- Trained and tested 50+ AI models with waveform signals using MATLAB Classification Learner.
- Published an IEEE paper and presented findings at Rutgers University and **IEEE MIT URTC**.
- Developed a 2D game using GameMaker Studio 2 to help people improve their cognition and puzzle-solving skills.

## Projects

**Bounce** | Next.js, React, TypeScript, CSS, AWS, API

June 2023 – Present

**Web App:** <https://main.d2ngor7ea7fphp.amplifyapp.com/> | **Github:** [github.com/emilyy-liew/bounce/tree/main](https://github.com/emilyy-liew/bounce/tree/main)

- Retrieved commit history from Github **API** to create updates log page with password authentication.
- Implemented icon bar and loading screen, enhancing user access to Bounce's diverse pages.
- Improved UI by animating collapsible text boxes with seamless transitions and creating appealing color themes.

**Rick and Morty App** | Python, Flask, Javascript, CSS, HTML, API

March 2023

[github.com/brianzheng205/Rick-and-Morty-App](https://github.com/brianzheng205/Rick-and-Morty-App)

- Retrieved and refactored data using **HTTP requests** to the Rick & Morty **API**.
- Created custom notes that users can edit and submit to **API** endpoints.

## Awards

**Certificate of Distinction, AIME Qualifier**

January 2022

Mathematical Association of America, American Mathematics Competition 12

## Publications

**Robustness Testing of Artificial Intelligence-Driven Hand Biometric-Based User Authentication in Mobile Devices**

June 2021 – February 2022

**Link:** [ieeexplore.ieee.org/document/9701620](https://ieeexplore.ieee.org/document/9701620)

**DOI:** 10.1109/URTC54388.2021.9701620

- Found hand biometric-based phone authentication to be unreliable and impractical based on personal AI models.