

# Grace Liu

Cambridge, MA, 02139 | giliu@mit.edu | 862-452-8895

---

## EDUCATION

### Massachusetts Institute of Technology

B.S. in Computer Science and Mathematics

Cambridge, MA

Jun 2026

- GPA: 4.8/5.0
- Relevant coursework: Machine Learning, Software Construction, Fundamentals of Programming, Design and Analysis of Algorithms, Low-level Programming in C and Assembly, Linear Algebra

### Union County Magnet High School

GPA: 4.0/4.0, Valedictorian

Scotch Plains, NJ

Jun 2022

- Activities: Student Government Vice-President, Science Olympiad President, Math League Captain

## EXPERIENCE

### Imperial College London, Ratmann Lab

International Research Opportunities Program (IROP)

London, UK

Jul 2024 - Sep 2024

- Implementing popular existing Bayesian regression models such as hierarchical linear regression and the horseshoe prior using Python
- Investigating application of Concrete random variables in sparse regression, particularly their advantages when multiple variables are correlated

### Massachusetts Institute of Technology

Lab Assistant

Cambridge, MA

Sep 2023 - present

- Introduction to Python (6.100A/B/L) & Fundamentals of Programming (6.1010)

Undergraduate Assistant

Sep 2023 - Dec 2023

- Multivariable Calculus (18.02)

### HMMT

Registration Director & Advisor

Cambridge, MA

Sep 2023 - present

- Manage registration for high-school math tournament hosted by MIT and Harvard with 1000+ participants each year

### Massachusetts Office of Health and Human Services

Integrated Fiscal Policy Intern

Boston, MA

Jan 2024 - Feb 2024

- Analyzed trends in primary care value-based payment programs using MS Excel
- Researched recent developments in Medicare policy

### BCNC

Summer Intern

Boston, MA

Jun 2023 - Aug 2023

- Created an interactive dashboard to track member statistics with Microsoft Power BI

## PROJECTS

### Star Battle | Typescript

- Implemented the Star Battle game and created a web server for it as part of a collaborative class final project

### Personal website | HTML/CSS

- Designed personal website showcasing my projects in Python and HTML/CSS

### Bayesian inference on AZ Diabetes | Python, NumPyro, JAX

- Developed two distinct Bayesian models for analyzing diabetes risk factors
- Employed Markov Chain Monte Carlo (MCMC) techniques to evaluate the relative importance of various factors in predicting an individual's probability of developing diabetes

### Snek Game | Python, Pygame

- Built a classic Snake game with modification: the snake's speed increases with each consumed food item
- Designed the game to enhance the player's engagement through incremental difficulty progression.

### **SKILLS**

**Skills:** Python, HTML/CSS, Javascript, Typescript, Git, C, RISC-V Assembly

**Languages:** English, Mandarin