Patrick Liu

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EDUCATION

Massachusetts Institute of Technology (MIT)   **Cambridge, MA**
M.Eng + B.S. Computer Science w/ Conc. in AI   *Exp. 2026*
- <u>GPA:</u> 5.0/5.0, HKN honor society
- <u>Relevant Coursework:</u> Low-Level Programming, Computational Thinking & Data Science, Data Structures & Algorithms, Multivariable Calculus, Discrete Math, Linear Algebra, Computation Structures, Machine Learning, Probability and Statistics, Software Construction, Computer Systems, Design and Analysis of Algorithms, Theory of Computation, Differential Equations, Data Visualization, Interactive Music Systems, Intro to Computer Vision, Modeling for Machine Learning
- <u>Skills:</u> Python, Javascript/Typescript, C, Flutter/Dart, Git/Gitlab, Linux/UNIX, SQL, RestAPI, PyTorch, Agile, Jira

WORK EXPERIENCE

Roblox   **San Mateo, CA**
Software Engineering Intern   *Incoming*

Medtronic   **Northridge, CA**
Software Engineering Intern   *June 2024 - August 2024*
- Developed a full-stack cross-platform application using Dart/Flutter, SQL, and Gemini API with BLoC architecture
- Reduced time for diabetic patients to record meal data by 75%, enabled users to store upwards of 2 years of meal data, and provided tailored meal/recipe suggestions based on user data within 30 seconds

MIT EECS Department   **Cambridge, MA**
Lab Assistant, Tutor, Grader   *September 2024 - Present*
- Helped 100+ students better understand DSA and systems concepts and write clean, bug-free code during office hours 10 hours/week
- Planned and held weekly tutoring sessions for 3 students in Intro to DSA, Math for CS, and Fundamentals of Programming classes
- Graded problem sets for 30 students and provided clear explanations and feedback to enhance student understanding and performance

MIT Nuclear Reactor Laboratory   **Cambridge, MA**
Undergraduate Researcher   *June 2023 - September 2023*
- Programmed motor controls to be used in a portable neutron diffractometer using BNL's Python-based Bluesky framework
- Equipped team with programming tools to facilitate future projects and research related to experimental instruments

MIT Climate & Sustainability Consortium   **Cambridge, MA**
Undergraduate Researcher   *June 2022 - October 2022*
- Formulated machine learning and additive manufacturing implementations for carbon capture technologies by analyzing relevant applications in aeronautics, construction, batteries, and nuclear reactors from 15+ published papers

LEADERSHIP EXPERIENCE

Canadian National & MIT Varsity Fencing Teams   **Canada & Cambridge, MA**
National Team Athlete, Varsity Squad Leader   *2017 - Present*
- 3x NCAA All-American, 1x Canadian Senior National Team (World Rank: 54), 5x Canadian U20 National Team (World Rank: 10)
- Designed a rigorous training plan for the MIT Men's Foil squad and oversaw the team during training & competitions, culminating in 5 berths at NCAA regional championships and the men's fencing program ranking 4th in the nation (division 3)

MIT Asian American Association   **Cambridge, MA**
President   *December 2023 - Present*
- Directed exec board of 25 members in organizing campus-wide cultural events with ~400 attendees, community-service fundraisers which raised ~$1k charity, and cross-club events that serve to strengthen the Asian-American community at MIT
Treasurer   *May 2023 - December 2023*
- Managed all club finances, including applying for funding determining budgets for all events and activities pertaining to the club
- Improved the club's financial situation drastically, resulting in $2000+ more reserve funds than beginning of tenure

MIT Consulting Group   **Cambridge, MA**
Director of Internal Consultant Development   *December 2023 - Present*
- Developed tailored curriculum and held weekly sessions for 9 new members to prepare them for casework and client interactions
Case Team Lead   *September 2023 - December 2023*
- Managed team of 6 student consultants in conducting research and developing a framework to determine which features to pursue in a generative AI SMS chatbot targeted towards small-and-medium-sized businesses for a telecommunications company

PROJECTS

MIT Mobile Autonomous Systems Lab: Finished 3rd place on a team of 5 to construct and program a robot that could navigate a field, pick up blocks, and stack them. Programmed the robot's block detection to detect various block colors while ignoring non-block objects of the same color in Python using the OpenCV library. Designed and laser cut robot components using OnShape.

Fencing Match Tracker: Designed and programmed a full stack app using Flutter and Dart where users can input and save their fencing matches. Users can navigate between pages to input new matches, view their match history, and see statistics based on logged matches.