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# Andi Liu

Python, TypeScript, C++  
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## EDUCATION

### Massachusetts Institute of Technology (MIT)

B.S. in Computer Science

GPA : 5.0/5.0

Sept 2021 - May 2025

Cambridge, MA

**Coursework:** Advanced Algorithms (graduate), Software Construction, Natural Language Processing, Artificial Intelligence, Intro to Computer Systems, Intro to Machine Learning, Functional Programming in Scheme, Intro to Probability

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## WORK EXPERIENCE

### Software Engineer Internship | Capital One

Jun - Aug 2023

- Developed frontend for Ozone UI, an internal dashboard used for AWS compliance with TypeScript, React, and Figma.
- Architected Spec2Code, an ML pipeline that auto-generates Python code from pseudocode written by cloud compliance policy engineers. Trained a Random Forest Classifier and demoed to internal customers as a proof of concept (POC).

### Software Engineer Internship | AMD

May - Aug 2022

- Fixed driver defects causing graphics corruption in games like *Minecraft* and *Metro Exodus* using Visual Studio in C++.
- Automated the variable setup process of the daily-used internal tool DXCPanel, saving 50+ engineers five minutes every day from manually configuring the debugging environment.
- Optimized *Fortnite* performance on AMD cards, achieving a notable 2% boost in frame rate.

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## PROJECTS & ACTIVITIES

### MIT ChatGPT-powered Event Platform

Apr 2023 - Present

- Developed [frontend](#) and [backend](#) for MIT-wide event platform [DormSoup](#) with partner using Next.js and Tailwind CSS.
- Hosted backend using AWS EC2 and RDS for PostgreSQL. Prompt-engineered ChatGPT to parse emails into JSON.
- Served as product manager as well as software engineer, liaising with school admins, artists, and external groups.

### Competitive Algorithmic Programming in C++

2017 - 2021

- Trained in Olympiad graduate-level algorithms and data structures in C++ for 1500+ hours.
- Ranked 6/2575 in USACO US Open 2020, securing a place among the 26 National Finalists across all U.S. high schools.

### Machine Translation Research using Transformer Model

Sept - Oct 2022

- Trained machine translation transformer [model](#) based on the Hugging Face T5 architecture adversarially against fine-tuned GPT-2 to mitigate gender bias in NLP, surpassing baselines in multiple metrics. Wrote a 9-page [paper](#).

### Full Stack Twitter-like Social Media Web App

Aug 2022

- Implemented [Twitter](#), a twitter-clone supporting users-authentication and real-time feeds with React.
- Engineered a [backend](#) supporting token-based authentication using Deno, TypeScript, and MongoDB.

### Game Development Projects

Oct 2021 - May 2022

- Programmed stealth [game](#) with team using Unity with C#, practicing Scrum methodologies under Agile principles.
- Developed [frontend](#) for an *Among Us* type game using the Phaser game engine, ranked 2/150+ in HackMIT.

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## HONORS

- National Finalist (top 26 among US highschoolers) – USACO 2020.
- Ranked sixth (out of 2575) – USACO Open 2020.
- Ranked second (out of 150+ teams) – HackMIT 2021.
- Ranked third (out of 59 teams) – MIT Battlecode 2022.