Harrison Cai

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EDUCATION

Cornell University **Ithaca, NY**

B.S. in Mechanical Engineering *GPA:* 3.784 *Aug 2024-May 2028*

- Related Coursework: Multivariable Calculus, Differential Equations, Linear Algebra, Statics and Mechanics of Solids, Dynamics, Thermodynamics, Physics: Mechanics & Electromagnetism

EXPERIENCE

Liquid Propulsion at Cornell **Ithaca, NY**

Member *September 2025-Present*

- Working on developing a turbopump for a liquid fed rocket using Fusion360 and SolidWorks as an undergraduate team with the hope of eventually developing a rocket capable of reaching 100,000 feet in altitude.
- Researched several reliable rocketry papers to calculate the necessary dimensions for our smaller scale rocket engine and CADed the turbopump in preparation for manufacturing as a proof of concept.

Apeiro 23409 **Bronx, NY**

Member *January 2023- August 2024*

- Member of FTC Robotics team where we competed in FIRST competitions
- Member of the programming department of the club, programming in java to run the drivetrain, arm, as well as encoders so that the robot could complete the target objectives both manually controlled and autonomously.

Desktop Robotics **Bronx, NY**

Member *September 2021 – January 2023*

- Assembled small robots with pre-programmed motors, claws, and controllers with others to grasp the basic aspects of robots

Math Team **Bronx, NY**

Member *September 2020 – August 2024*

- Analyzed new math theorems and tested our knowledge of math to solve complex problems
- Competed in: NYCIML, AMC, DMI, SBIMC

Global Science & Medicine: Computer Science **Virtual**

Co-Manager *July 2023 – August 2024*

- Organized all the interns and created all the lesson / project plans for meetings to help teach others the basics of computer science

New Turbo Education Center **Hybrid**

Tutor *July 2024-Current*

- Improved students' understanding of target subject through different teaching strategies and content based on student progress. Teaching up to the AP level.

Projects

- **Fatal Farms:** Developed a small game running on the Unity game engine with some friends using C#. Used in-built Unity packages for multiplayer functionality. The game is a 4-player competitive game centered around farming the most corn while sabotaging your friends.

ADDITIONAL INFORMATION

Programming languages: Python, Java, C#

Software: VSCode, Unity, MATLAB