

# Charlie Luo

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## Education

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### Georgia Institute of Technology

Atlanta, GA

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Expected August 2023

- **Relevant Coursework** - Data Structures and Algorithms, Applied Combinatorics
- **Vertically Integrated Project** - Spatiotemporal Modeling of COVID-19

## Skills and Awards

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**Languages** Python, Swift, Java, JavaScript, C++

**Frameworks** React, React Native, Algolia, Firebase, GCP

**Competitions and Awards** WWDC Scholar (2019), picoCTF Top 120 HS Teams (2020), Battlecode Top 6 HS (2019, 2020)

## Projects

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### Monumenta Item Index

SOLE PROJECT LEAD

April 2019 - PRESENT

- Built a website and a Discord bot used to look up game item information for thousands of players.
- Used React to build the website frontend, Firebase and Algolia for database/searching of items, and the Discord API to respond to player requests in the Discord server.

### DiscordBook

SOLE PROJECT LEAD

May 2020 - PRESENT

- An open-source Python module providing Discord bots a simple and customizable info display system.
- Written in Python (using the Discord API), published on PyPi.

### DigestPath Project

DEVELOPER

Summer 2019

- Worked in Dr. Xie's lab at UCI to train a computer vision model identifying malignant cells in colonoscopy tissue samples.
- Learned and implemented a PyTorch U-Net model for pixel-wise classification.

## Leadership

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### hackPHS

EXECUTIVE DIRECTOR

2017 - 2020

- Founded and directed hackPHS, an annual 24 hour high school hackathon with 300+ hackers attending each year.
- Raised \$10,000+ in funds, ran the outreach team to get 500+ registrations, and built the organizing team each year.

### Science Olympiad

ENGINEERING CAPTAIN

2018 - 2020

- Lead the engineering team in building projects for competitions - placed in the top 6 in multiple events, including Ping Pong Parachute, Mission Possible, Codebusters, and Mousetrap Vehicle.

### Computer and Robotics Club

VICE PRESIDENT

2017 - 2020

- Recruited and managed teams of students building robots to compete in the Trinity Firefighting Competition.
- Programmed a maze solving algorithm for OGREBOT, one of the firefighting robots built for the competition.

### iLaunch

VICE PRESIDENT

2016 - 2019

- Taught Swift and iOS basics to junior club members, leading each member to build and publish their own mobile game on the App Store.
- As a junior member, built and published a mobile game on the App Store.

### Algorithms and Data Structures Class

TEACHING ASSISTANT

2019 - 2020

- Gave lectures and graded assignments as the TA for a computer science course at Princeton High School.