

# Ivy Cao

71 Finisterra, Irvine, CA 92614 • [ic2502@columbia.edu](mailto:ic2502@columbia.edu) • (949) 312 – 8692

## EDUCATION

### Columbia University

New York, NY

*Bachelor of Science in Computer Science/Minor in Applied Math*

August 2019 – May 2023

**Relevant coursework:** Intro to Probability and Statistics, Analysis and Optimization, Advanced Programming in C/C++, Discrete Math, Data Structures in Java, Intro to Python, Multivariable Calculus

**Honors/Awards:** Rewriting the Code Fellow, AIME Qualifier, National Merit Scholarship Winner, National AP Scholar, PhysicsBowl Division I 5<sup>th</sup> National/9<sup>th</sup> International

**Technical skills:** Java, Python, C, HTML/JS/CSS, Linux, React, Unity, Git, C++, Node.js, MySQL, Keras

## EXPERIENCE

### Bank of America

Charlotte, NC

*Global Technology Summer Analyst*

Jun 2020 – Aug 2020

- Developed machine learning and deep learning time series forecasting models in **Python** and **Keras** for daily ATM volume estimation, obtaining 7.75% mean absolute percentage error.
- Optimized ARIMA, Random Forest, and Long Short-Term Memory neural network models to handle 200+ input variables, observations, and calculations at scale.
- Selected and analyzed three stocks based on returns, volatility, correlation with **Excel/Python** in cross-business team. Calculated Value at Risk/Expected Shortfall for portfolio.
- Spearheaded team of 7 as Cohort Representative in Environmental, Social, Governance challenge.

### Spectator Publishing Company

New York, NY

*Engineering Associate*

Feb 2020 – Present

- Working on Clubs@CU, a centralized platform for students to view and apply to clubs.
- Developed the Reviews page of theShaft, an interactive on-campus housing guide for Columbia University students and community using **React** and **HTML/CSS**.

### Columbia University Computer-Enabled Abilities Lab

New York, NY

*Undergraduate Researcher*

Sept 2019 – Present

- Developed Racing Auditory Display, an audio-based blind-accessible interface for racing games.
- Wrote **C#** scripts for in-game onboarding sequence, racetracks, and sonification strategies.
- Applied UI/UX design concepts and enhanced accessibility with Unity Accessibility Plugin.

### Ardent Academy

Irvine, CA

*Mathematics Instructor*

Mar 2019 – Aug 2019

- Taught 50+ students for Math Olympiad and AMC8/AMC10 math competitions. Graded assignments and tests. Held office hours to explain/answer questions.

### Other Projects

- Developed gradebook application in **Java** to record, calculate, display statistics for student grades.
- Participated in Irvine01 CubeSat Team and configured camera using **C** and **Linux**, launched successfully in Fall 2018.
- Implemented a simple HTTP 1.0 web server from scratch using **C**. Displayed static and dynamic content to client side.

## LEADERSHIP & ACTIVITIES

### General Club Member

Sept 2019 – Present

- Women in Computer Science (Event Coordinator), Society of Women Engineers, ADI, CORE.

### Jane Street Women in STEM Attendee

Jul 2019 – Jul 2019

- Selected as 1 of 70 attendees for an all-expense paid, three-day program in NYC to attend math, finance, and software development seminars taught by Jane Street employees.

### UHS Girls Who Code President

May 2018 – June 2019

- Developed club website using **HTML**, **JavaScript**, and **CSS**. Oversaw and managed all operations of the organization. Taught coding in **Java**, **Python**, and mobile app development.

### OC Math Circle Executive Board Member

April 2016 – May 2019

- Maintained website, social media accounts, event registration/newsletters via Constant Contact.
- Spearheaded ExpII (an online math problem database) initiative, leading the Problem-Writing Committee to successfully contribute 1000+ problems in 2 weeks.
- Organized Math Fun Night events to inspire kids to love math in underserved communities.
- Worked as lead lecturer and strategically created monthly lecture plans for the 4<sup>th</sup>-6<sup>th</sup> grade class.