

# Nishant Mishra

Harvard Computer Science & Statistics Student

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## Education

### Harvard University

Cambridge, MA

#### Bachelor of Arts - AB, Computer Science & Statistics

2020 - 2024

**Selected Coursework** - Data Structures & Algo, Vector Calc, & Linear Algebra, Data Science, Probability Theory, Intro to CS

**Activities & Leadership** - Group for Undergrads in Statistics at Harvard (Director of Membership), Harvard Undergraduate Research Association (Associate of Technology, Publicity, and Outreach), Harvard Undergraduate Math Association

## Work Experience

### Harvard School of Engineering and Applied Sciences

Cambridge, MA

#### Course Assistant (CA) | CS50: Introduction to Computer Science

Sept. 2021 - Present

- Hold two hour-long weekly tutorials, staff office hours, grade quizzes/exams, and assist students on problem sets.
- CS50 is Harvard's largest course with ~700 enrolled students; topics include C, Python, memory, data structures, SQL, and web programming (HTML/CSS, JS, Flask). Offered position after receiving the **5th highest final exam score** in Fall '20.

### Harvard Institute for Applied Computational Science - StellarDNN Group

Cambridge, MA

#### Research Intern | Machine Learning in Astrophysics

May. 2021 - Aug. 2021

- Utilized recurrent convolutional neural networks (Python, PyTorch) to accept a black hole's physical parameters to generate synthetic images; tested using high-resolution images to infer back the input with **98% accuracy**.
- Worked with researchers at IACS and the Center for Astrophysics (CfA) to document and propose imaging design recommendations for the Event Horizons Telescope (EHT) Collaboration's upcoming black hole imaging facilities.

### Glimpse (Y Combinator, Winter 2020) - Growth Team

San Francisco, CA

#### Product Growth Analytics Intern | Product Design & Market Research

Feb. 2021 - May. 2021

- Mapped out feature usage trends (Mixpanel) on *Glimpse Events*, a video chat platform with **110k+ registered users**, to identify points of weakness in the app's one-on-one matching structure, overseeing a **~30% increase** in users in Spring '21.
- Conducted UI/UX interviews to write product req. docs. for *Glimpse Groups*, a community events planning platform.
- Proposed and tested feature sets for **Heyyo Chat**, a messenger app part of the **initial launch cohort of Zoom Apps**.

### Biopicon Corporation - Research & Development Division

Princeton, NJ

#### Software Engineering Intern | Depth Scanning Technology in Medical Imaging

Sep. 2020 - Dec. 2020

- Modified Intel's RealSense SDK scripts (Python) to let users capture stereo-camera depth maps with Bash commands.
- Constructed and utilized a StereoPi module to image various tumor-like objects; minimized image noise (MATLAB) to optimize the module's software parameters (Python) when operating in tandem with tumor-imaging equipment.

## Career Programs

### Jane Street

Manhattan, NY | Remote

#### First-Year Trading and Technology Program (FTTP) | Github Repository: <https://bit.ly/3dbtAyb>

March 2021

- Selected as **1 of 60 college freshmen** to learn more about Jane Street's quantitative trading and technology models.
- Programmed a market trader bot (Python) that utilized TCP connections (Bash), the known fair prices of bonds, and discrepancies in the pricing of securities to generate profit in a simulated financial exchange.
- Automated trader bot placed in the **top 8** at Jane Street's 2021 FTTP Electronic Trading Competition (ETC).

## Personal Projects

### Catch 21: Dice

Cambridge, MA

#### CS50 Final Project | Github Repository: <https://bit.ly/3oXrXI6>

Dec. 2020

Worked with a classmate to design a web application (Flask, Jinja, Python) that features a two-player dice game (JavaScript), along with a personalized stats page and global leaderboard ranking all registered users (SQL). Front-end designed with HTML5/CSS and Bootstrap 4. Deployed on Heroku (<https://catch-21-dice.herokuapp.com/login>).

### Mathematical Modeling of the U.S. Electric Truck Market

Princeton, NJ

#### M3 Mathematical Modeling Competition 2020 | Github Repository: <https://bit.ly/36NICYB>

March 2020

Worked in a team to research the U.S. electric truck market, develop mathematical models (Python) to predict electric truck usage in the next two decades, and determine ideal economic/environmental zones for U.S.-based charging station infrastructure. Final paper placed in the **top 19% of 760 submissions** at the 2020 MathWorks Math Modeling Challenge.

## Technical Skills

**Programming:** Python (4 yrs), Java (4 yrs), C++ (2 yrs), JS (1 yr)

**Markup/Style:** HTML/CSS (2 yrs), LaTeX (3 yrs)

**Query:** SQL (1 yr)

**Technologies:** NumPy, Pandas, Flask, TensorFlow, Keras

**Applications:** MATLAB, LabVIEW, UiPath

**Tools:** Git, Linux, Unix, Mixpanel, Heroku