

NISHANT MISHRA

Computer Science Student | Harvard College Class of 2024

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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

Extracurriculars - Group for Undergraduates in Stat at Harvard (Membership Director), Harvard Computer Society, Harvard Open Data Project, Harvard College Research Association (Technology, Publicity, and Outreach Associate)

Work Experience

Harvard University, School of Engineering and Applied Sciences (SEAS)

Cambridge, MA

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

Sept. 2021 (Expected) - Present

- Set to 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 University, Institute for Applied Computational Science (IACS) - StellarDNN Group

Cambridge, MA

Research Intern | Machine Learning in Astrophysics

May, 2021 - Present

- Utilized recurrent convolutional neural networks (Python, PyTorch) to determine the accuracy of using the M87 black hole's physical parameters to generate synthetic images; tested using high-resolution images to infer back the input.
- 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) of an events platform of **110k+ users** to identify points of weakness & strengths in the app's back-to-back video chat structure, contributing to a ~**30% increase** in registered users in Spring '21.
- Interviewed *Glimpse Groups* beta users on personalization preferences to document pain points of social media use.
- Proposed and tested feature sets for Glimpse ZChat, a Zoom chat integration part of the **first-ever cohort of Zoom Apps**.

Biopicon Corporation - Research & Development Team

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/3oXrXl6>

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