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
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*
• Utilizing 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,
• Working 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 paint points of social media use.

Biopticon 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/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