Nitya Thakkar

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Education

Brown University, Sc.B. Computer Science, GPA: 3.96/4.0 **Providence, RI • May 2023**

Honors: CRA Outstanding Undergraduate Researcher Award Honorable Mention (2022)

Relevant Coursework: Computational Biology, Machine Learning, Deep Learning, Data Science, Computer Vision, Algorithms and Data Structures, Computer Systems, Discrete Math, Multivariable Calculus, Statistical Inference, Linear Algebra, Genetics, Biochemistry, Organic Chemistry

St. Paul Academy and Summit School, GPA: 3.99/4.0 **St, Paul, MN • June 2019**

Honors: Cum Laude Society, Intel International Science and Engineering Fair Finalist (2019), Ethel E. Pease Award for excellence in mathematics (2019), National Merit Scholar, Target Women in Science and Technology EPIC Award (2018)

Work Experience

Teaching Assistant at Brown University **Jan. 2021 - Present**

- Deep Learning (Fall '22 and Spring '22), Introduction to Computer Systems (Fall '21), Linear Algebra (Spring '21)
- Responsibilities include course development, grading problem sets/projects, and holding weekly office hours

Select Programming Experience

- Othello: multiplayer game with AI opponent (Java; CS15; 2019)
- Shell: command terminal shell built in C (CS33; 2020)
- Implemented a graph convolutional network for single-cell classification (Python; CS1470; 2021)
- Full Stack at Brown: Created a website, implemented a database of users with login functionality (React, Node)

Languages: Proficient in Python, Java, C, PyTorch; Experience with HTML/CSS, JavaScript, React, and R

Research Experience

Microsoft Research, Biomedical ML Lab **May 2022 - Present**

Dr. Kevin Yang

- Using a denoising diffusion probabilistic model to generate 2D protein alignments, hypothesizing the model will be able to capture the natural variation in the protein sequences and generate new proteins with desired structures and functions

Brown University, Computational Biology Lab **Jan. 2020 – Present**

Dr. Ritambhara Singh

- Co-first author on ENCODE Consortium project to predict three-dimensional organization of the genome (A/B compartments) from one-dimensional data (histone modification signals) using deep learning methods
- Created a recurrent neural network to predict 3D organization, ran and implemented baseline methods, and improved data pre-processing pipeline (using Python, R, and Git)

Broad Institute of MIT and Harvard **June 2021 – Dec. 2021**

Dr. Neriman Tokcan

- Applying machine learning methods to spatial transcriptomic data, goal is to understand how Classical Hodgkin's Lymphoma tumor cells survive based on interactions with nonmalignant immune cells in cancerous environment
- Created feed forward neural network with spatial context to identify cell types in tumor from gene expression data; implemented new spatial analysis methods (using Python and R)
- Presented work at Annual Biomedical Research Conference for Minority Students in November 2021

Leadership & Volunteering

Meiklejohn Peer Advisor and WiCS Mentor **Aug. 2021 – Present**

- Meiklejohn: Academic and peer advisor to 6 first-year students at Brown
- WiCS: Advise and mentor first-year women in CS

Brown Elementary After-school Mentoring **Jan. 2020 – Present**

- Volunteer with and mentor K-5 students once a week at local elementary school

Brown Abhinaya: Bharatanatyam **Sept. 2019 – Present**

- Co-captain (2021-22) and choreographer for Brown's premier South Asian classical dance team
- Professional production in high school, "Ritu - The Seasons": four major performances in Twin Cities (2016-18)