Neerja Thakkar

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EDUCATION

UNIVERSITY OF CALIFORNIA - BERKELEY | Starting Aug 2020
EECS PhD Candidate in Berkeley AI Research
Committed to program, deferred acceptance for Fulbright Scholarship

DARTMOUTH COLLEGE | June 2019
Bachelor of Arts: Computer Science (High Honors), Mathematics | GPA 3.91/4.0
Phi Beta Kappa (top 10%), Magna Cum Laude
Citations for Meritorious Performance in: Computer Graphics (Nov. 2018), Software Design and Implementation (June 2017), First-Year Writing Seminar (March 2016)

AQUINCUM INSTITUTE OF TECHNOLOGY - BUDAPEST | Fall 2017
Computer Science Study Abroad Program | Program GPA 4.0/4.0

RESEARCH EXPERIENCE

GRAPHICS AND IMAGING LAB, UNIVERSITY OF ZARAGOZA, SPAIN | Sep 2019 – present
Visiting Student
- Advised by Diego Gutierrez
- Working on deep learning for compressed sensing (ongoing project)

VISUAL COMPUTING LAB, DARTMOUTH CS DEPARTMENT | Oct 2018 – present
Undergraduate Research Assistant
- Advised by Professor Wojciech Jarosz and Neel Joshi (Senior Research Scientist at Microsoft Research)
- Investigating which aspects of rendering are most important when rendering synthetic data for deep learning and computer vision tasks (ongoing project)

BAILEY-KELLOGG RESEARCH GROUP, DARTMOUTH CS DEPARTMENT | Jan 2017 – April 2019
Undergraduate Research Assistant
- Presented poster on project "Clustering Complementarity Determining Regions of T-Cell Receptors"
- Later, developed a principled method that uses machine learning techniques to analyze T-cell receptor repertoires to find patterns balancing sensitivity and specificity, which reveals new insights and ways to analyze large biological datasets
- Publication: Thakkar, N., Bailey-Kellogg, C. (2019). Balancing sensitivity and specificity in distinguishing TCR groups by CDR sequence similarity. BMC Bioinformatics,20(241).

AWARDS AND SCHOLARSHIPS

UC BERKELEY CHANCELLOR'S FELLOWSHIP | From Sept 2020
- Two years of full PhD funding from the UC Berkeley graduate division
- Also received the UC Berkeley EECS Excellence Award, for which I was selected by UC Berkeley EECS faculty

FULBRIGHT RESEARCH SCHOLARSHIP | Sept 2019 – June 2020
- To conduct computer graphics and imaging research in Spain under Professor Diego Gutierrez

HANNAH T. CROASDALE AWARD | June 2019
- Given to the senior who has made the most significant contribution to the quality of life for women at Dartmouth
- Awarded for mentoring and increasing support for women in STEM, and sexual violence prevention work

GAZZANIGA FAMILY SCIENCE AWARD NOMINEE | June 2019
- Given to the graduating senior at Dartmouth who has done the best STEM research
- Each department can nominate one individual, and I was the Computer Science department's nominee

BARRY GOLDWATER AWARD - HONORABLE MENTION | Mar 2018
- Awarded for research potential and experience

ADOBE RESEARCH WOMEN-IN-TECHNOLOGY SCHOLARSHIP | Jan 2018
- "Recognizes outstanding undergraduate female students anywhere in the world who are studying computer science", awarded to 10 women internationally every year

WORK EXPERIENCE

FACEBOOK | June – Aug 2018
Software Engineering Intern | Seattle, WA
- Interned on the Integrity Computer Vision team, which develops computer vision algorithms to keep Facebook safe
- Optimized neural networks used to identify harmful content such as porn and violence by implementing pruning algorithms, making networks over 32% faster while retaining accuracy
- Modified and improved existing training pipeline and optimized pruning with multiprocessing, speeding it up by 8x
- Built adversarial image detector

MIT PRESS | Mar – June 2018
MIT Press Intern
- Worked with Professor Thomas Cormen on Introduction to Algorithms by Cormen, Leiserson, Rivest and Stein
- Wrote solutions and lecture notes for the 4th edition instructors manual, helped make minor improvements to textbook

3M HEALTH INFORMATION SYSTEMS | June – Aug 2016
Software Engineering Intern | St. Paul, MN
- Improved and updated a fundamental Java-based XML data parser, enabling analysis of millions of documents for data scientists and engineers throughout HIS. Modified parser to allow for anticipated future expansion, developed JUnit tests
- Deployed using Apache Spark and SQL, prototyped cloud-based parser deployment using AWS

TEACHING EXPERIENCE

DARTMOUTH COMPUTER SCIENCE DEPARTMENT | Mar 2016 – March 2019
Teaching Assistant: CS1, CS 11, CS 30
- Graded coding assignments or problem sets and exams, hold office hours
- CS1 (Introduction to Programming and Computation): Taught weekly sections to 10 students on basic programming skills in Python
- CS11 (Foundations of Applied Computing): Teach students foundational concepts for applied computing such as modeling and optimizing linear and nonlinear systems, representing and computing with uncertainty, analyzing multi-dimensional data, and sampling from complex domains, helped develop assignments in Matlab
- CS30 (Discrete Mathemathics for Computer Science): Taught students core discrete math concepts such as proof methods, combinatorics, probability, and graph theory

TECHNICAL SKILLS

Proficient: Java • Python • C++
Moderate: C • JavaScript • Matlab • Bash • Android • LaTeX• Mitsuba Renderer
Experience with: OpenGL • Blender • HTML/CSS • SQL

RELEVANT COURSEWORK

COMPUTER SCIENCE
Algorithms
Software Design and Implementation
Applied Cryptography
Mobile Software Development
Structure and Dynamics of Complex Networks
Cognitive Computing
Computational Photography
Computer Graphics
Machine Learning

MATHEMATICS
Abstract Algebra
Combinatorial Optimization
Graph Theory
Linear Algebra
Probability
Discrete Mathematics for Computer Science
Multivariable Calculus
Complex Analysis
Differential Equations

EXTRACURRICULAR

WOMEN IN SCIENCE PROGRAM | Sep 2016 – June 2019
Mentor

- Paired with underclass women to advise and encourage them in pursuing math, science, and engineering fields

WOMEN IN COMPUTER SCIENCE | Jan 2016 – June 2019
Member, Panelist
- Connect with other women at meetings and events centered around computer science-related topics
- Have spoken in panels to give advice to other women on pursuing computer science

STUDENT AND PRESIDENTIAL COMMITTEE ON SEXUAL ASSAULT | Apr 2017 – June 2019
Outreach Chair
- Worked with the President's office and other administration to improve Dartmouth's sexual violence climate
- Made policy recommendations to campus and lead projects to change and improve a wide range of policies
- Led outreach efforts and the creation of a 43-page handbook to elucidate Dartmouth's policies and resources to students

DARTMOUTH MACHINE LEARNING CLUB | June 2017 – Nov 2018
Co-founder, Positions held: Secretary, President
- Taught basic machine learning and Python programming concepts to younger members
- Coordinated meetings, helped lead machine learning projects and initiatives based on members' interests

DARTMOUTH SYMPHONY ORCHESTRA | Feb 2016 – April 2019
Co-Manager and Violinist
- Coordinated general operations of the DSO, executed hiring of professional musicians, resolved personnel conflicts and concerns within DSO, fostered community building, helped organize international tour
- Have studied solo classical violin for over 16 years: played in numerous chamber groups, violinist in MN Youth Symphonies for 8 years, participated in music festivals, taught violin lessons