Lily Xu

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lily-x.github.io

EDUCATION	**Harvard University**, Cambridge, MA PhD Student, School of Engineering and Applied Sciences Advised by Prof. Milind Tambe GPA: 4.0	2019 – present
	Dartmouth College, Hanover, NH B.A. with Honors in Computer Science, minor in Spanish GPA: 3.83 (Magna cum laude)	2014 – 2018

PUBLICATIONS

Stay Ahead of Poachers: Illegal Wildlife Poaching Prediction and Patrol Planning Under Uncertainty with Field Test Evaluations
IEEE International Conference on Data Engineering (ICDE) 2020 (to appear)
Lily Xu*, Shahrzad Gholami*, Sara Mc Carthy, Bistra Dilkina, Andrew Plumptre, Milind Tambe, Rohit Singh, Mustapha Nsubuga, Joshua Mabonga, Margaret Driciru, Fred Wanyama, Aggrey Rwetsiba, Tom Okello, Eric Enyel
*Equal contribution

HONORS AND AWARDS

Certificate of Appreciation from the SMART Consortium	2018
Five Citations for Academic Excellence at Dartmouth College	2014 – 2018

Special distinction rarely awarded by faculty members "for meritorious characteristics not indicated adequately by academic grades."
- Computational Photography (Jarosz, CS 89.15)
- Latin American Film (Spitta, Spanish 63.01)
- Computer Graphics (Whiting, CS 77)
- Object-Oriented Programming (Peters, CS 10)
- Introduction to Programming and Computation (Farid, CS 1)

Adobe Women-In-Technology Scholarship – Honorable Mention	2017
Rick Angulo World Experience Award	2016

For "intellectual openness, enthusiasm, and impressive academic performance" following a study abroad program in Cusco, Peru. Award in $1,500.

James O. Freedman Presidential Scholar	2016
Willis S. Fitch '17 Metropolitan Washington Scholarship	2015
Bank of America's Joe Martin Scholarship	2014
National Merit Scholar	2014

RESEARCH EXPERIENCE

Harvard University, Cambridge, MA
Doctoral Research Assistant   2019 – present
- Part of the Center for Research on Computation and Society (CRCS) at Harvard. Conducting research in machine learning under uncertainty, with applications for wildlife conservation.

University of Southern California, Los Angeles, CA
Doctoral Research Assistant   2018 – 2019
- Advised by Prof. Milind Tambe and Prof. Bistra Dilkina. Worked on the Protection Assistant for Wildlife Security (PAWS) to combat illegal wildlife poaching, in collaboration with the World Wide Fund for Nature (WWF). Used machine learning and game theory to build predictive models and plan patrols.

Dartmouth College, Hanover, NH

Undergraduate Senior Thesis Researcher 2017 – 2018
- Advised by Prof. Amro Farid, designed a graphical model of the New England electric grid and performed statistical comparisons with a model produced with hetero-functional graph theory.

Presidential Scholar Research Assistant 2016 – 2017
- Advised by Prof. Emily Whiting and Prof. David Kotz, developed a digital reconstruction of the historic Moosilauke Ravine Lodge using photogrammetry. Produced an interactive, VR-compatible model.

WORK EXPERIENCE

Google, Seattle, WA

Software Engineering Intern Summer 2017
- Prototyped a highly demand feature that automates the scheduling and deletion of infrastructure deployment for the Google Cloud Deployment Manager team. Released work as an open-source project on Google's GitHub.

Dyn, Inc., Hanover, NH

Data Analytics Research Intern Spring 2016
- Supervised by Dr. Alin Popescu, developed a process to determine zones of statistical significance in large datasets to analyze latency between servers.

TEACHING EXPERIENCE

Dartmouth College

Teaching assistant for 11 courses. Helped design assignments and course material for the first offering of CS 11 and delivered a guest lecture to 70 students.
- CS 1: Intro to Programming and Computation — Fall 2015, Winter 2016, Spring 2017, Fall 2017, Spring 2018
- CS 10: Object-Oriented Programming — Spring 2015, Spring 2016
- CS 11: Foundations of Applied Computer Science — Spring 2018
- CS 31: Algorithms — Winter 2017
- Tuck FWP: Fundamentals of Web Programming — Spring 2017
- Tuck DSA: Data Structures and Analytics — Spring 2017

LEADERSHIP

Ledyard Canoe Club at Dartmouth, *Secretary, Canoeing Leader* 2014 – 2018
- Co-governed club functions for over 100 undergraduates. Managed club assets that include $1M in endowments, a student-run rental business with annual revenues of $50K, and boats and equipment valued at $150K.
- Co-organized an Explorers Symposium featuring ten notable alumni, including Olympic racers and members of National Geographic-sponsored expeditions.
- Led a group of twenty-eight students on a nine-day, 220-mile canoe expedition.
- Voted by my peers to receive the Jay Evans '49 Service Award for commitment to the club.

Fusion Dance Ensemble, *Director* 2014 – 2018
- Led a group of fourteen dancers. Choreographed, taught, and performed contemporary and hip-hop dances.

Dartmouth Sophomore Trips, *Co-director* 2015 – 2016
- Planned the Sophomore Trips program for 130 undergraduates across 14 three-day outdoor trips throughout New Hampshire and Vermont including hiking, climbing, kayaking, and sailing.

Dartmouth First-Year Trips, *Grant Crew Volunteer*   Summer 2015
- Served on a nine-person crew for a 21-day, round-the-clock commitment to assist 300 students in five-day outdoor orientation trips including whitewater kayaking, canoeing, and hiking.

PROFESSIONAL SERVICE

Organization

Co-organizer, Harvard CRCS Workshop on AI for Social Impact   March 2020
Co-organizer, Computational Sustainability Doctoral Consortium   October 2019

Program Committee

AAAI Emerging Track on AI for Social Impact (AISI)   2020

OUTREACH

Speaking

World Science Festival, Science and Storytime   June 2019
L.A. Unified School District (LAUSD), African American Family Day   May 2019
Zoo Magnet High School, College and Career Day   November 2018

Mentoring

WiSTEM Mentor, Harvard University   2019 –
Women in Computer Science panelist and mentor, Dartmouth College   2017 – 2018

Volunteering

Presenter, Cambridge Public Schools STEAM It Up!   October 2019
Technical lead, Hustle N' Code hackathon   December 2018
- Hustle N' Code is a Los Angeles hackathon for youth in public housing developments. My team won first place, and the four students each received a laptop.

PRESS

USC Viterbi Magazine, AI is for Animals.   April 2019

TECHNICAL SKILLS

Languages: English, Spanish
Programming languages: Python, Java, C/C++, Javascript, MATLAB, R, Bash
Software: QGIS, Adobe Photoshop, Adobe InDesign