Lily Xu

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lily-x.github.io

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

PUBLICATIONS

Dual-Mandate Patrols: Bandit-Based Learning for Green Security
In submission to AAAI 2021
Appeared at Harvard CRCS Workshop on AI for Social Good 2020
Lily Xu, Elizabeth Bondi, Fei Fang, Andrew Perrault, Kai Wang, and Milind Tambe

Game Theory on the Ground: The Effect of Increased Patrols on Deterring Poachers
Working paper
Appeared at Harvard CRCS Workshop on AI for Social Good 2020
Lily Xu, Andrew Perrault, Andrew Plumptre, Margaret Driciru, Fred Wanyama, Aggrey Rwetsiba, and Milind Tambe

A High-Performance Graph Model for Near-Optimal Payments for Ecosystem Services
Working paper
Appeared at Mechanism Design for Social Good (MD4SG) Workshop 2020
Florian Berlinger*, **Lily Xu***, Yiling Chen
*Equal contribution

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
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

RESEARCH EXPERIENCE

Harvard University, Cambridge, MA
Doctoral Research Assistant — 2019 – present
Advised by Prof. Milind Tambe

University of Southern California, Los Angeles, CA
Doctoral Research Assistant — 2018 – 2019
Advised by Prof. Bistra Dilkina and Prof. Milind Tambe.

Dartmouth College, Hanover, NH
Undergraduate Senior Thesis Researcher — 2017 – 2018
Advised by Prof. Amro Farid

Presidential Scholar Research Assistant — 2016 – 2017
Advised by Prof. Emily Whiting and Prof. David Kotz

WORK EXPERIENCE

Google, Seattle, WA
Software Engineering Intern — Summer 2017

Dyn, Inc., Hanover, NH
Data Analytics Research Intern — Spring 2016

TEACHING EXPERIENCE

Harvard University
Head Teaching Fellow
CS 182: Artificial Intelligence — Fall 2020

Guest Lecturer
CS 182: Artificial Intelligence — Fall 2020

Dartmouth College
Teaching Assistant, Department of Computer Science

CS 31: Algorithms	Winter 2017
CS 11: Foundations of Applied Computer Science	Spring 2018
CS 10: Object-Oriented Programming	Spring 2016
CS 10: Object-Oriented Programming	Spring 2015
CS 1: Intro to Programming and Computation	Spring 2018
CS 1: Intro to Programming and Computation	Fall 2017
CS 1: Intro to Programming and Computation	Spring 2017
CS 1: Intro to Programming and Computation	Winter 2016
CS 1: Intro to Programming and Computation	Fall 2015

Teaching Assistant, Tuck School of Business

Tuck FWP: Fundamentals of Web Programming	Spring 2017
Tuck DSA: Data Structures and Analytics	Spring 2017

Guest Lecturer
CS 11: Foundations of Applied Computer Science — Spring 2018

STUDENTS MENTORED

Emilia Cabrera '21, Harvard College (co-mentored with Haipeng Chen) — Fall 2020

PROFESSIONAL SERVICE	**Program Organization**	
	Co-organizer, MD4SG Working Group on Environment and Climate	January 2020 –
	Co-organizer, CompSust Open Graduate Seminar (COGS)	January 2020 –
	Social co-chair, Fourth Workshop on MD4SG	August 2020
	Lead organizer, Harvard CRCS Workshop on AI for Social Impact	March 2020
	Co-organizer, Computational Sustainability Doctoral Consortium	October 2019

Program Committee

Conferences

AAAI Emerging Track on AI for Social Impact (AISI)	2021
AAAI Emerging Track on AI for Social Impact (AISI)	2020

Workshops

NeurIPS Workshop on Machine Learning for the Developing World (ML4D)	2020
Fourth Workshop on Mechanism Design for Social Good (MD4SG)	2020
Harvard CRCS Workshop on AI for Social Good	2020
KDD Workshop on Humanitarian Mapping	2020

Reviewer

NeurIPS, *subreviewer*	2020
IJCAI Special Track on CompSust and Human Well-being, *subreviewer*	2020
COMPASS, *subreviewer*	2019
Bloomberg Data for Good Exchange, *subreviewer*	2019

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 speakers, 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 Award for service and 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.

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 with five-day outdoor orientation trips for 1,000 incoming students.

OUTREACH

Speaking

Harvard Women in Computer Science, *panelist*	October 2020
GirlsComputingLeague, AInnovation Business Summit	September 2020
IEEE Computer Society, Women in Computing, Kerala Chapter	September 2020
Data Science Africa, MD4SG and the Environment	July 2020

Ledyard Canoe Club, Inclusivity in the Outdoors   July 2020
Dartmouth Women in Computer Science, *panelist*   May 2020
Harvard SEAS Diversity, Inclusivity, and Belonging, *panelist*   May 2020
Center for Initiatives in Jewish Education, high school student visit   March 2020
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
InTouch Peer Mentor, Harvard University   2020 –
Women in STEM Mentor, Harvard University   2019 –
Women in Computer Science, Dartmouth College   2017 – 2018

Volunteering
Graduate Council Outreach Committee, Harvard University   2020 –
Project Teach, Harvard University   April 2020
Cambridge Public Schools STEAM It Up!   October 2019
Hustle N' Code Hackathon, *technical lead*   December 2018
   Hustle N' Code is a Los Angeles hackathon for youth in public housing.
   My team won first place, and the four students each received a laptop.

PRESS   **Harvard SEAS**, Preventing Poaching.   June 2020
               USC Viterbi Magazine, AI is for Animals.   April 2019