Lily Xu

lily_xu@g.harvard.edu
lily-x.github.io

Education

Harvard University, Cambridge, MA — 2019 – present
PhD Student, School of Engineering and Applied Sciences
Advised by Prof. Milind Tambe
GPA: 4.0

University of Southern California, Los Angeles, CA — 2018 – 2019
PhD Student, Viterbi School of Engineering
Advised by Prof. Milind Tambe and Prof. Bistra Dilkina
GPA: 4.0

Dartmouth College, Hanover, NH — 2014 – 2018
B.A. with Honors in Computer Science, minor in Spanish
GPA: 3.83 (Magna cum laude)

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

- Working on the Protection Assistant for Wildlife Security (PAWS) to combat illegal wildlife poaching, in collaboration with the World Wide Fund for Nature (WWF). Using machine learning and game theory to build predictive models and plan patrols.

Dartmouth College, Hanover, NH
Undergraduate Senior Thesis Researcher 2017 – 2018

- Supervised 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

- Supervised by Prof. Emily Whiting, 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

Worked as a teaching assistant for 11 courses at Dartmouth College beginning in freshman spring. 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.
- 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 down the Connecticut River.
- 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, *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

- Co-chair of the **Computational Sustainability Doctoral Consortium** (October 2019)
- **Program committee**: AAAI 2020. Emerging Track on AI for Social Impact (AISI)

Outreach

- Presented *AI is for Animals* at the **World Science Festival** Science and Storytime event, attended by 100 elementary school students and parents. New York, NY. (June 2019)
- Hosted a workshop at the Los Angeles Unified School District (LAUSD) **African American Family Day** for students in grades 3–12 and their parents. (May 2019)
- Volunteered as a technical lead at **Hustle N' Code**, a Los Angeles hackathon for youth in public housing developments. My team won first place, and the four students each received a laptop. (December 2018)
- Speaker at the College and Career Day at **Zoo Magnet High School**, presenting *Computer Science for Conservation.* (November 2018)

Press

USC Viterbi Magazine, *AI is for Animals*, April 2019.
https://magazine.viterbi.usc.edu/spring-2019/features/srepok-wildlife-sanctuary/

Technical Skills

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