

Ryan Hoque

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EDUCATION

UC Berkeley — Ph.D., EECS — Robotics and AI (Advised by Ken Goldberg) AUGUST 2020 - PRESENT

- Current GPA: 4.00

UC Berkeley — M.S., EECS — Robotics and AI (Advised by Ken Goldberg) AUGUST 2019 - MAY 2020

- Cumulative GPA: 4.00 (Graduated *Summa Cum Laude*)

Graduate Coursework: Advanced Robotics, Deep Reinforcement Learning, Robotic Manipulation and Interaction, Convex Optimization, Computer Vision, Algorithmic Human-Robot Interaction, Linear Systems Theory, Vision and Language

UC Berkeley — B.S., EECS (Electrical Engineering and Computer Sciences) AUGUST 2016 - MAY 2019

- Cumulative GPA: 4.00 (Graduated *Summa Cum Laude*)
- Coursework: Machine Learning, Artificial Intelligence, Data Structures, Efficient Algorithms, Operating Systems, Quantum Computing, Computer Architecture, Internet Architecture, Computer Security, Probability

Organizations:

- BAIR (Berkeley AI Research) - *Deep Learning and Robotics Research at the Berkeley Automation Lab*
- Accel Scholars - *Class of thirty high-potential Berkeley EECS students mentored by venture capital firm Accel*
- IEEE-HKN (EECS Honor Society) - *Top 25% of EECS majors, serves the Berkeley EECS/CS community*

PUBLICATIONS

1. **R. Hoque**, A. Balakrishna, E. Novoseller, A. Wilcox, D. Brown, K. Goldberg. ThriftyDagger: Budget-Aware Novelty and Risk Gating for Interactive Imitation Learning. *Conference on Robot Learning (CoRL)*, 2021. **Oral Presentation** (6.5% of papers).
2. **R. Hoque***, D. Seita*, A. Balakrishna, A. Ganapathi, A. Tanwani, N. Jamali, K. Yamane, S. Iba, K. Goldberg. VisuoSpatial Foresight for Physical Sequential Fabric Manipulation. *Autonomous Robots (AURO)*, 2021.
3. **R. Hoque**, A. Balakrishna, C. Putterman, M. Luo, D. Brown, D. Seita, B. Thananjeyan, E. Novoseller, K. Goldberg. LazyDagger: Reducing Context Switching in Interactive Imitation Learning. *IEEE Conference on Automation Science and Engineering (CASE)*, 2021.
4. A. Ganapathi, P. Sundaresan, B. Thananjeyan, A. Balakrishna, D. Seita, J. Grannen, M. Hwang, **R. Hoque**, J. Gonzalez, N. Jamali, K. Yamane, S. Iba, K. Goldberg. Learning dense visual correspondences in simulation to smooth and fold real fabrics. *IEEE International Conference on Robotics and Automation (ICRA)*, 2021.
5. **R. Hoque***, D. Seita*, A. Balakrishna, A. Ganapathi, A. Tanwani, N. Jamali, K. Yamane, S. Iba, K. Goldberg. VisuoSpatial Foresight for Multi-Step, Multi-Task Fabric Manipulation. *Robotics: Science and Systems (RSS)*, 2020.
6. D. Seita, A. Ganapathi, **R. Hoque**, M. Hwang, E. Cen, A. Tanwani, A. Balakrishna, B. Thananjeyan, J. Ichnowski, N. Jamali, K. Yamane, S. Iba, J. Canny, K. Goldberg. Deep Imitation Learning of Sequential Fabric Smoothing from an Algorithmic Supervisor. *IEEE International Conference on Intelligent Robots and Systems (IROS)*, 2020.
7. A. Ganapathi, P. Sundaresan, B. Thananjeyan, A. Balakrishna, D. Seita, **R. Hoque**, J. Gonzalez, K. Goldberg. MMGSD: Multi-Modal Gaussian Shape Descriptors for Correspondence Matching in 1D and 2D Deformable Objects. *IEEE International Conference on Intelligent Robots and Systems (IROS) Workshop on Managing Deformation*, 2020.
8. **R. Hoque**, K. Goldberg, P. Abbeel. Robotic Fabric Manipulation with Deep Imitation Learning and Reinforcement Learning in Simulation. UC Berkeley EECS M.S. Thesis, 2020.

WORK EXPERIENCE

Uber ATG, San Francisco, CA — Self-Driving Software Engineering Intern MAY 2019 - AUGUST 2019

- Simulation Team — worked on pruning the space of scenarios by predicting which ones were most likely to fail
- Built an ML pipeline to automate training and prediction on AWS, using a random forest approach to improve the analytic baseline by increasing accuracy from 57% to 92% and saving 65% in costs (new default in production)

Uber, Palo Alto, CA — Software Engineering Intern MAY 2018 - AUGUST 2018

- Maps Platform: Places Team — deployed backend software for tracking and consolidating 30,000+ place editing tasks/week from various sources into a single list sorted by priority using MySQL and Apache Spark
- Designed internal site with React+Redux to accept edit suggestions for places involved in 1.5 million trips daily

Yahoo!, Sunnyvale, CA — Software Engineering Intern MAY 2017 - AUGUST 2017

- Yahoo! Mail — Developed full-stack hardware failure detection system for 10,000+ hosts across 4 teams
- Designed multiple REST APIs from scratch with Express and Node.js to act as central server and client daemons
- Built user interface with React and integrated APIs like ServiceNow for automated hardware repair requests

AWARDS

UC Berkeley Quantedge Award for Academic Excellence	FALL 2018
3rd Place out of 750+ students in the CS 170 (Algorithms) NP-Hard Combinatorial Optimization Contest	FALL 2017
Best Web App and Cal Hacks Fellowship winner at Cal Hacks, the World's Largest Collegiate Hackathon	NOV 2016 & 2017
UC Berkeley Edward Frank Kraft Award for Freshmen	FALL 2016
Outstanding Academic Achievement in Mathematics - Awarded by high school Math Dept. to top student	MAY 2016
National Merit Scholarship - Merit-based award for approx. 7,000 students out of 1.5 million nationwide	MAY 2016
2nd Place, HP CodeWars Programming Competition (Advanced Division)	SPRING 2015
2nd Place, Lockheed Martin Code Quest Programming Competition (Advanced Division)	SPRING 2015
1st Place, Oakland Hacks Hackathon	SPRING 2016

PROFESSIONAL SERVICES

Program Committee for Safe and Robust Control Workshop at NeurIPS 2021

Volunteer Manager of Berkeley AI Research Social Media (60K+ Followers)

Reviewer for Robotics: Science and Systems, IEEE International Conference on Robotics and Automation, IEEE

International Conference on Intelligent Robots and Systems, Applied Mathematical Modeling, Neural Information Processing Systems

Mentored Carl (Izzy) Putterman (2020-2021, currently at NVIDIA), Aditya Ganapathi (2020-), Albert Wilcox (2021-),

Kaushik Shivakumar (2021-), Vincent Lim (2021-), Zaynah Javed (2021-)