Victoria Dean

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Education

Carnegie Mellon University 2018 – present
PhD in Robotics, School of Computer Science (GPA: 4.2/4.0)
Advised by Professor Abhinav Gupta
Relevant Courses: Deep RL for Robotics (16-881), Deep RL (10-703), Statistical Techniques in Robotics (16-831), Math for Robotics (16-811), Mechanics of Manipulation (16-741)

Massachusetts Institute of Technology 2013 – 2017
Bachelor of Science, Computer Science and Engineering
Relevant Courses: Autonomous Vehicles (2.166), Computer Vision (6.819), ML for Healthcare (6.S897) NLP (6.806), Performance Engineering (6.172), Inference (6.008), Undergraduate Research (6.UAR)

Research and Industry Experience

Waymo, Machine Learning Research Resident 2017 – 2018
Combined imitation learning with reinforcement learning for better trajectory generation. Designed and deployed a low-latency text detection and recognition system that runs on the Waymo fleet.

MIT Computer Vision Group, Undergraduate Researcher 2015 – 2017
Worked with Professor Antonio Torralba and Carl Vondrick on training deep models to exploit underused signals present in videos, including visual dynamics and audio.

Deep Genomics, Research Intern Summer 2016
Explored deep learning use on genomic data. Developed a CNN for an RNA pattern recognition task that gave a 1.2x improvement in sensitivity above baselines. Authored a paper, which won 2nd best presentation at the Machine Learning for Computational Biology workshop at NeurIPS 2016.

Counsyl, Computational Biology Research Intern Summer 2015
Developed an analysis pipeline for a liquid biopsy that reconstructs a tumor's genome from circulating tumor DNA in the bloodstream. Used statistics and signal processing techniques to reduce sequencer and polymerase noise by 1000x.

Google, Software Engineering Intern Summer 2014
Designed and implemented a distributed video analysis system for finding coherent animated clips in YouTube videos. Launched the system internally, allowing all Google employees to test out the project.

FIRST Robotics Team 1700, Programming Lead, Coach 2009 – 2014, 2018
Mentored all-girls high school robotics team, Castilleja Gatorbotics. Previously as a student, developed PID controllers and image tracking to identify and automatically aim at basketball hoops.

UC Santa Cruz Astronomy Research Internship Summers 2011, 2012
Conducted research with Professor Raja Guhathakurta to develop pattern matching software to search spectra for distant galaxies. Wrote paper and presented at the 2013 American Astronomical Society conference.

Publications

V. Dean, S. Tulsiani, A. Gupta. Audio Prediction as Instrinsic Reward for Exploration. Poster presented at the Women in Machine Learning workshop at NeurIPS 2019.

V. Dean, A. Delong, B.J. Frey. Deep Learning for Branch Point Selection in RNA Splicing. Selected for oral presentation at the Machine Learning for Computational Biology workshop at NeurIPS 2016. Also a poster at the Women in Machine Learning Workshop at NeurIPS 2016.

V. Dean, P. Guhathakurta, et al. Search for High-Redshift Lyman-Alpha Emitters in the DEEP3 Galaxy Redshift Survey. Poster presented at the 2013 American Astronomical Society meeting.

K. McCormick, A. Alvarez-Buylla, **V. Dean**, et al. Semi-automated Search For Lyman-alpha And Other Emission Lines In The DEEP2 And DEEP3 Databases. 2012 American Astronomical Society meeting.

Honors and Awards

Cisco Undergraduate Research and Innovation Scholar 2015 – 2016
2nd Place Oral Presentation at NeurIPS Machine Learning in Computational Biology Workshop 2016
Dropbox Engineering Prize at Stanford TreeHacks 2015
Winner of MIT Education DesignShop 2014
Intel Science Talent Search Semifinalist (One of 300) 2013

Teaching and Outreach

Deep RL for Robotics (16-881), Head Teaching Assistant Spring 2020
Leading discussions and presentations on Deep RL and Robotics in seminar class with Professor David Held.

CMU AI mentorship program, Organizer 2018 – 2020
Founded program with goal of involving more women and underrepresented minorities in AI research. In the first two years, paired 109 minority undergraduates with PhD student mentors.

CMU SCS Dean's Advisory Committee, Committee Member 2019-2020
Representing The Robotics Institute on School of Computer Science committee reporting to Dean Martial Hebert about the experiences and challenges facing SCS PhD students.

OurCS, Committee Member 2019
Co-organizing conference providing research opportunities to undergraduate women. Initiated scholarship program and secured travel grants for students from Mexico, Ghana, Uganda, and Ethiopia.

Introduction to Deep Learning (6.S191), Lecturer and Co-chair January 2017
Organized and lectured for MIT's first deep learning course. My lecture on multi-modal learning has over 12,000 views on YouTube.

MIT Global Teaching Labs, Computer Science Instructor January 2016
Developed and taught a month's worth of curriculum on elective topics, including algorithms and machine learning, to 4th and 5th year computer science students at a technical school in Prato, Italy.

Code for Good, Founder 2014 – 2017
Founded MIT group that connects students and nonprofits on technical projects. Since its founding, hundreds of MIT students have worked with 40+ nonprofits through a course (6.S187) and a consulting program.

Society of Women Engineers, Board Member 2014 – 2017
Developed and taught #HelloWorld, an MIT program encouraging middle school girls to pursue CS. Now in its 9th semester, the 7-week program enables students to build websites using HTML, CSS, and JavaScript.

Introduction to EECS (6.01), Student Lab Assistant Spring 2014
Led MIT students through course labs on topics ranging from probability to PID control on real robots.

Invited Talks/Panels

Duke Technology Scholars Program Fireside Chat June 2019
Castilleja Global Week AI Panel January 2019
Program in Quantitative Genomics Working Group Series at Harvard School of Public Health April 2018
MIT Women in EECS Tech Talk April 2017

Tools

Proficient:	Python	C/C++	Java	Tensorflow	Keras
Familiar:	MATLAB	Torch	PyTorch	Caffe	ROS

Outside Interests

Experimental baking, swing dancing, reading, and rowing (NCAA Division I, MIT 2017-2018).