Victoria Dean

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Robotics Institute
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Education

Carnegie Mellon University 2018 - present

PhD in Robotics, School of Computer Science
Advised by Professor Abhinav Gupta
Relevant Courses: Deep Reinforcement Learning (10-703), Math for Robotics (16-811)

Massachusetts Institute of Technology 2013-2017

Bachelor of Science in Computer Science and Engineering
Relevant Courses: Autonomous Vehicles (2.166), Computer Vision (6.819), ML for Healthcare (6.S897)
Advanced Natural Language Processing (6.806), Performance Engineering of Software Systems (6.172)
Introduction to Inference (6.008), Advanced Undergraduate Research (6.UAR)

Research and Industry Experience

Waymo, Machine Learning Research Resident 2017-2018

Designed and deployed low-latency onboard text detection system. Combined imitation learning with reinforcement learning for better trajectory generation.

MIT Computer Vision Group, Undergraduate Researcher 2015-2017

Worked with Antonio Torralba and Carl Vondrick on training deep models to exploit underused signals present in videos, including dynamics and audio.

Deep Genomics, Research Intern Summer 2016

Explored a variety of models for an RNA pattern recognition task and developed a CNN which gave a 1.2x improvement in sensitivity above existing models. Authored a paper describing these results, which won 2nd best presentation at the Machine Learning for Computational Biology workshop at NIPS 2016.

Counsyl, Computational Biology Research Intern Summer 2015

Developed an analysis pipeline for a "liquid biopsy," which reconstructs a tumors 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 distributed video analysis system for finding coherent animated clips in YouTube videos (C++). Launched the system internally, allowing all Google employees to test out my new features.

FIRST Robotics Team 1700, Programming Lead, Coach 2009-2014, 2018

Member and later alumni mentor on all-girls high school robotics team, Castilleja Gatorbotics. As a student, developed PID controllers and image tracking to identify and automatically aim at basketball hoops (Java).

UC Santa Cruz Astronomy Research Internship Summers 2011, 2012

Worked with Professor Raja Guhathakurta to develop pattern matching software to search spectra for distant galaxies, wrote research paper and presented poster at AAS 2013.

Publications

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

V. Dean, P. Guhathakurta, et al. Search for High-Redshift Lyman-Alpha Emitters in the DEEP3 Galaxy Redshift Survey. Poster presented at American Astronomical Society meeting 2013. (Abstract: http://goo.gl/iWtdZD)

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. Poster presented at American Astronomical Society meeting 2012. (Abstract: http://goo.gl/RKxBF6)

Teaching and Outreach

Intro to Deep Learning (6.S191), Lecturer and Co-chair January 2017

Organized and lectured in MITs first-ever deep learning course. My lecture on multi-modal learning has over 8000 views on YouTube.

MIT Global Teaching Labs, Computer Science Instructor January 2016

Taught computer science to 4th and 5th year students at technical school in Prato, Italy. Developed and taught a month's worth of curriculum on elective topics, including algorithms and machine learning.

Code for Good, Founder 2014-2017

Founded MIT student group that brings together students and local nonprofits to work on technical projects. Projects have ranged from volunteer matching to data visualization. Now, in the program's fifth year, hundreds of MIT students have done projects with 40+ nonprofits through a full-time IAP course (6.S187) and a semester consulting program.

Society of Women Engineers, Board Member 2014-2017

Developed and taught #HelloWorld, an MIT Society of Women Engineers effort inspiring middle school girls to pursue computer science. Now in its 7th semester, the 7-week program teaches HTML, CSS, and JavaScript and culminates with students presenting their own websites to parents and mentors.

Intro to EECS (6.01), Student Lab Assistant Spring 2014

Assisted students with 6.01 labs on topics ranging from probability to PID control on real robots.

Tools

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

Honors and Awards

Cisco Undergraduate Research and Innovation Scholar	2015-2016
2nd place presenter at NIPS ML 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

Outside Interests

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