# Victoria Dean

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## Education

***Massachusetts Institute of Technology*** 2013-2017

- Working towards BS in Computer Science and Engineering (GPA: 4.6/5.0)
- Current coursework: Machine Learning for Healthcare (6.S897) | Design and Analysis of Algorithms (6.046)
- Completed coursework: Advanced Natural Language Processing (6.806) | Advances in Computer Vision (6.819) Autonomous Vehicles (2.166) | Seminar in Advanced Undergraduate Research (6.UAR) Performance Engineering of Software Systems (6.172) | Computer Systems Engineering (6.033) | Introduction to Inference (6.008) Software Construction (6.005) | Computation Structures (6.004) | Introduction to Algorithms (6.006)

## Teaching

- Lecturer and Co-chair for Intro to Deep Learning (6.S191) IAP 2017
- Student Lab Assistant for Intro to Electrical Engineering and Computer Science (6.01) Spring 2014
- Co-developed and taught new Code for Good course (6.S187), a course for students to develop software for nonprofits 2014-2017
- Developed and taught #HelloWorld, an MIT Society of Women Engineers effort to teach coding to middle school girls 2015-2016
- MIT Global Teaching Labs: taught computer science to 4th and 5th year students at technical school in Prato, Italy IAP 2016
- Teaching Assistant at Khan Academy's Discovery Lab Summer 2012

## Experience and Relevant Projects

***MIT Computer Vision Research Group,*** Cisco Undergraduate Research and Innovation Scholar 2015-2017

- Trained CNN-based generative models for objects in unlabeled videos
- Built CNNs to learn character personality traits in Hollywood films
- Developed CNN-based models for predicting speech from instructional videos on YouTube

***Deep Genomics,*** Research Intern 2016 Summer

- Designed a CNN model for predicting branch site selection in RNA splicing using TensorFlow
- Accepted to Women in ML (WiML) and selected for oral presentation at ML in Computation Biology (MLCB) at NIPS 2016

***Counsyl,*** Software Engineering Intern 2015 Summer

- Worked with the computational biology and research teams on developing analysis pipeline for a new test
- Used statistics and signal processing to reduce sequencer and polymerase noise by 1000 fold

***Google,*** Software Engineering Intern 2014 Summer

- Designed and implemented distributed image analysis system for finding coherent animated clips in YouTube videos (C++)
- Added special effects features to YouTube video editor (youtube.com/editor)

***Coursera*****,** Software Engineering Intern 2013 Summer

- Created architecture for internationalization of Coursera's home pages and shortened page load time by 10-20%

***FIRST Robotics*** Castilleja Gatorbotics Team 1700, Programming Lead (2011-2013), Mentor (2014) 2009-2014

- Code for 2012 season included use of multiple PID controllers and image tracking to identify and automatically aim at basketball hoops (Java). See https://github.com/gatorbotics1700/FRC-2012
- Led programming workshops to teach programming techniques to other team members

***UC Santa Cruz Astronomy Research Internship*** 2011 & 2012 Summers

- Worked with Prof. Raja Guhathakurta to develop pattern matching software to search spectra for distant galaxies
- Wrote research paper and presented poster at the 2013 American Astronomical Society meeting

## Skills

- *Programming Languages/Frameworks*: (proficient) Python, Java, C, C++, TensorFlow; (familiar) MATLAB, Torch, Caffe, ROS
- *Languages*: English (native), Mandarin Chinese (conversational), Spanish (beginner)

## 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://adsabs.harvard.edu/abs/2013AAS...22114742D)

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://adsabs.harvard.edu/abs/2012AAS...21934004M#)

## Honors and Awards

- Voted 2nd place presenter at NIPS Machine Learning for Computational Biology Workshop 2016
- Dropbox 1st place award at Stanford TreeHacks 2015
- Winner of MIT Education DesignShop 2014
- Intel Science Talent Search Semifinalist 2013 (one of 300)
- National Merit Finalist and AP Scholar with Distinction 2013