

Deborah Hanus

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Education

Harvard University , Cambridge, MA Ph.D. Computer Science, GPA: 3.8/4.0 <i>Advisor: Finale Doshi</i>	May 2018 (Expected)
Massachusetts Institute of Technology , Cambridge, MA M.Eng. Electrical Engineering and Computer Science, GPA: 5.0/5.0 S.B. Computer Science & Engineering; Brain and Cognitive Sciences, GPA: 4.2/5.0	February 2013

Graduate Courses: Big Data Systems, Advanced Machine Learning, Data Science, Computational Cognitive Science, Advanced Topics in Computer Vision, The Human Intelligence Enterprise, Computer System Security, Distributed Computer Systems Engineering, Operating Systems, Innovation Strategy, Launching Technology Ventures, Entrepreneurship Lab.

Awards & Honors

Women in Machine Learning Workshop Organizer	2016
Harvard Courtlandt S. Gross Memorial Scholarship	2015
Facebook Grace Hopper Celebration Scholarship	2015
Women in Machine Learning Workshop Travel Award	2014
Fulbright Student Fellowship	2013
National Science Foundation Graduate Research Fellowship	2013
National Defense Science & Engineering Graduate Fellowship (Declined)	2013
University California, San Diego \$40K Dean's Fellowship (Declined)	2013
MIT Kelly-Douglas Travel Award	2011
MIT Public Service Center Fellowship	2011
IEEE Engineering & Research Travel Award	2009, 2011

Publications

- Hanus, D.** & Vul, E. (2013) "Quantifying error distributions in crowding." *Journal of Vision*. 13(4):17, 1 – 27.
- Vul, E., **Hanus, D.**, & Kanwisher, N. (2009) "Attention as inference: Selection is probabilistic and graded, Conscious access is sampled and discrete." *Journal of Experimental Psychology: General*. 138(4), 546 – 60.
- Vul, E., **Hanus, D.**, & Kanwisher, N. (2008) "Delay of selection in the attentional blink." *Vision Research*. 48(18), 1902 – 9.

Presentations

- Hanus, D.** & Doshi, F. "Predicting effective HIV treatment in the presence of sparse data" *Poster at Machine Learning Summer School, Cadiz, Spain, May 2016*
- Hanus, D.**, Killian, T., & Doshi, F. "Predicting effective HIV treatment in the presence of sparse data" *Poster at New England Machine Learning Day, Cambridge, MA May 2016*
- Hanus, D.** & Doshi, F. "Using reinforcement learning to predict the effectiveness of HIV treatment in the presence of sparse data & high variance." *Poster at Women in Machine Learning Workshop, Montreal, CA, December 2015*
- Hanus, D.**, Vul, E., & Kanwisher, N. "Attention as Inference: Selection is probabilistic and graded, Conscious access is sampled and discrete." *Poster at Women in Machine Learning Workshop, Montreal, CA, December 2014*

Hanus, D. & Vul, E. "Quantifying Error Distributions in Crowding." *Talk at Vision Science Society Meeting, Naples, FL, May 2013.*

Hanus, D. & Wingate D. "Smart Scheduling: Optimizing Tiler's Scheduling via Reinforcement Learning." *Poster at MIT Computer Science & Artificial Intelligence Laboratory Student Workshop. Cambridge, MA. September 2012.*

Hanus, D., & Ho, P. "Structure of Sensation in the Cortical Network of the Macaque Brain." *Poster at IBM India Research Labs Symposium, New Delhi, India, July 2010.*

Hanus, D., Vul, E., & Kanwisher, N. "Measuring spatial uncertainty in perceptual crowding." *Poster at MIT Undergraduate Research Symposium, Cambridge, MA, April 2009.*

Hanus, D., Vul, E., & Kanwisher, N. "Measuring spatial uncertainty in perceptual crowding." *Poster at Boston Undergraduate Research Symposium, Harvard University, Cambridge, MA, April 2009.*

Hanus, D., Vul, E., & Kanwisher, N. "Delay of selective attention during the attentional blink." *Poster at Vision Sciences Society Meeting, Naples, FL, May 2008.*

Vul, E., **Hanus, D.,** & Kanwisher, N. "Selective attention and uncertainty." *Poster at Vision Science Society Meeting, Naples, FL, May 2008.*

Experience

Harvard University

Cambridge, MA

NSF Graduate Research Fellow

2015 – Present

- Developed models of missing data to enable more realistic predictions of effective HIV treatments, while completing coursework in advanced machine learning, data analysis, and data visualization.
- Developed a model to predict what makes a movie successful (def: Oscars, box office hits), using data from IMDbpy, the-numbers, and box-office-mojo. [oscarpredictor.github.io](https://github.com/oscarpredictor/oscarpredictor)

Lead Genius

Berkeley, CA

Full Stack Software Engineer

2014 – 2015

- Used Django, Python, HTML, CSS, Javascript, and JQuery to build onboarding system used by 100+ clients.
- First full-time hire of the company's team of four responsible for the company's sole product.

U.S. Department of State

Phnom Penh, Cambodia

Fulbright Scholar

2013 – 2014

- Investigated how education can stimulate job creation, alleviating Cambodian underemployment.

Vecna Technologies, Inc

Cambridge, MA

Software Engineering Intern

Summer 2013

- Worked in Humanist Design Studio, supervised by the User Interface Director to develop and refine user interfaces to be more accessible for individuals with blindness, deafness, and brain injury.

MIT Computer Science & Artificial Intelligence Lab

Cambridge, MA

Graduate Research Assistant

2011 – 2013

M.Eng. Thesis: "Smart Scheduling: Optimizing Tiler's Process Scheduling via Reinforcement Learning."

- Implemented Python library of reinforcement learning algorithms to efficiently navigate a maze.
- Integrated reinforcement learning into Tiler's scheduling using C, optimizing efficiency.

MIT McGovern Institute for Brain Research

Cambridge, MA

Undergraduate Research Assistant

2007 – 2010

- Collected and managed data of 200+ subjects for 4-10 simultaneous projects.
- Collaboratively developed and coded experiments and corresponding analyses in Python and MATLAB, resulting in 3 peer-reviewed journal articles (1 first author) and 4 posters.

IBM – India Research Labs

Research Intern

Delhi, India

Summer 2010

- Led a team of two interns to design and execute investigation of important cortical areas, using Python and culminating in a poster and internal project write-up.

Teaching Experience

Boston Python Workshop

Teaching Assistant, Project-driven Python

Cambridge, MA

2011 – 2013

- Collaborated in development and instruction of programming exercises aimed at increasing numbers of women who contribute to open source, resulting in 200+ women joining the Boston Python user community and workshops being run in 6+ major cities internationally.

Harpwell Foundation: Dorm & Leadership Center

Leadership Resident & Instructor

Phnom Penh, Cambodia

January 2012

- Taught Intermediate & Advanced English and Critical Thinking lessons to Cambodian undergraduates.
- Obtained \$4K in grants and fellowships from MIT Public Service Center, Kelly-Douglas Fund, and IEEE.

MIT Teaching and Learning Lab

Teaching Certificate

Cambridge, MA

Summer 2011

- Selected for intensive program to investigate education theory and develop teaching skills.

MIT Department of Electrical Engineering & Computer Science

Teaching Assistant, 6.004 – Computation Structures

Cambridge, MA

Spring 2011

- Taught two recitation sections (20 students each) twice weekly and assisted students in bi-weekly labs in JSim & Bsim, which culminated in each student building a beta processor.

Skills & Certifications

Programming: Python, Django, HTML/CSS, Javascript, SQL, MATLAB, C/C++, Java, LaTeX

Certifications: National Registry Certified Emergency Medical Technician (EMT-B Inactive); Licensed Private Pilot

Languages: English (Native), Khmer (Working proficiency), Arabic (Basic)