
ELENA LEAH GLASSMAN

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- Interests** I work on systems for visualizing and exploring thousands of programming solutions to help teachers more quickly develop a high-level view of students' understanding and misconceptions, and to provide feedback that is relevant to more students.
- Keywords** Human-computer interaction, information visualization, learning sciences, educational technology, machine learning.
- Education**
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|---|---------------|
| Massachusetts Institute of Technology | Cambridge, MA |
| Ph.D., Electrical Engineering and Computer Science | Expected 2015 |
| 4.8/5.0 GPA (Cumulative Graduate GPA; includes Master's) | |
| Massachusetts Institute of Technology | Cambridge, MA |
| Master of Eng., Electrical Engineering and Computer Science | February 2010 |
| Massachusetts Institute of Technology | Cambridge, MA |
| B.S., Electrical Science and Engineering | June 2008 |
| 4.8/5.0 GPA | |
- Internships**
- Research Intern** May '14 - Aug. '14
neXus Research Team, Microsoft Research
Redmond, WA
- Conducting research at the intersection of human-computer interaction (HCI) and education, supervised by Merrie Ringel Morris and Anoop Gupta.
 - Focusing on interface for facilitating the production of high quality educational videos using PowerPoint plug-in Office Mix.
- Publications and Patent Applications**
- Elena L. Glassman, Jeremy Scott, Rishabh Singh, Philip J. Guo, and Robert C. Miller. OverCode: Visualizing Variation in Student Solutions to Programming Problems at Scale. **Submitted for publication** in the Online Learning at Scale Special Issue of the *ACM Transactions on Computer-Human Interaction* (ACM TOCHI).
- Elena L. Glassman, Ned Gulley, and Robert C. Miller. Toward Facilitating Assistance to Students Attempting Engineering Design Problems. In *Proceedings of the Ninth Annual ACM Conference on International Computing Education Research* (ICER '13). ACM, New York, NY, USA, pp. 41-46, Aug. 2013.
- Elena Glassman. Visualizing and Classifying Multiple Solutions to Engineering Design Problems. Extended Abstract. In *Proceedings of the Ninth Annual ACM Conference on International Computing Education Research* (ICER '13). ACM, New York, NY, USA, pp. 175-176, Aug. 2013.
- Elena Glassman, Alexis Lussier Desbiens, Mark Tobenkin, Mark Cutkosky, and Russ Tedrake. Region of Attraction Estimation for a Perching Aircraft: A Lyapunov Method Exploiting Barrier Certificates, In *Proceedings of the 2012 IEEE International Conference on Robotics and Automation* (ICRA '12), pp. 2235-2242, May 2012.
- Elena L. Glassman and Russ Tedrake. A quadratic regulator-based heuristic for rapidly exploring state space. In *Proceedings of the 2010 IEEE International Conference on*

Elena L. Glassman. A wavelet-like filter based on neuron action potentials for analysis of human scalp electroencephalographs. *IEEE Transactions on Biomedical Engineering* 52, no. 11 (2005).

Elena L. Glassman and John V. Guttag. Reducing the number of channels for an ambulatory patient-specific EEG-based epileptic seizure detector by applying recursive feature elimination. In *Proceedings of the 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society* (EMBS '06), pp. 2175-2178, 30 Aug. - 3 Sept. 2006.

Elena L. Glassman, John V. Guttag, Eugene I. Shih, and Ali Shoeb. Method and apparatus for reducing the number of channels in an EEG-based epileptic seizure detector. US Patent App. 12/196,690, 2008.

**Appearances in
Popular and
Scientific Media**

- Appeared in *Science*: “Rising Stars” (30 May 2003), *Science* 300 (5624), 1368d.
- Profiled on CNN’s *Lou Dobbs Tonight*, in a segment titled “America’s Bright Future” Fall 2003
- Guest on CNN’s *American Morning* May 2003

Teaching at MIT

- Recitation Instructor for Computation Structures (Undergraduate Lab) Spring '12 - Fall '13
- Created a short educational video on radio receiver technology for the Singapore University of Technology and Design, funded and produced by the MIT Teaching and Learning Lab Released Summer '13
- Teaching Assistant for Introduction to EECS 1 Fall '11
- Completed the MIT Teaching and Learning Lab’s Graduate Student Teaching Certificate Program
- Co-taught EECS Dept’s Review of Signals and Systems IAP '11, '12, '13
- Tutor for Signals and Systems and Probabilistic Systems Analysis through the MIT EECS/HKN tutoring service '06 - '11

Teaching Abroad

- Computer Science Instructor for the Middle East Education through Technology Program (MEET) Jerusalem, Summer '13
 - Taught the basics of programming and teamwork to Israeli and Palestinian gifted high school sophomores

Leadership

- Co-President of the MIT Middle East Education through Technology (MEET) student group, recruiting MIT students as summer instructors Fall '13 - present
- MIT EdTech Reading Group Co-Organizer Fall '12
- Vice-President, MIT Chapter of Eta Kappa Nu, an EECS honor society Apr. '08 - Apr. '09

**Professional
Activities and
Honors**

Fellowships

- Amar Bose Teaching Fellowship Jan. '14 - Dec '14
- NSF Graduate Research Fellowship Sept. '11 - Sept. '14
- National Defense Science and Engineering Graduate Fellowship Sept. '08 - Sept. '11

Selected Scholarships and Awards

- MIT EECS Dept. Masterworks Oral Thesis Presentation Award May 2009
- Intel Foundation Young Scientist Award, given to the top 3 out of 1300 projects at Intel International Science and Engineering Fair May 2003

Committee Memberships

- MIT Council on Educational Technology Spring 2005
- EECS Department Education Committee Dec. '06 - Fall '08

**Academic
Research
Positions**

Graduate Research Assistant

Feb '13 - present

User Interface Design Group, MIT Computer Science and Artificial Intelligence Lab
Cambridge, MA

- Building systems for visualizing and exploring thousands of programming solutions to help teachers more quickly develop a high-level view of students' understanding and misconceptions, and to provide feedback that is relevant to more students.

Visiting Researcher

Fall '10

Biomimetics and Dexterous Manipulation Lab, Stanford University
Stanford, CA

- As a representative of the MIT Robot Locomotion Group, I collaborated with Stanford University's Biomimetics and Dexterous Manipulation Lab, focusing on control algorithms for future dexterous autonomous aerial vehicles.

Graduate Research Assistant

June '08 - May '12

Robot Locomotion Group, MIT Computer Science and Artificial Intelligence Lab
Cambridge, MA

- Designed and published optimal control-based distance metrics for use in Rapidly-Exploring Random Trees (RRTs), which can increase the tractability of kinodynamic planning.

Undergraduate Researcher

Feb. '05 - June '06

Networks and Mobile Systems Group, MIT Computer Science and Artificial Intelligence Lab

Cambridge, MA

- Created a data-analysis algorithm for determining the smallest patient-specific subsets of electrodes that still allow an EEG-based epileptic seizure detector to perform at its most accurate level.