ELENA LEAH GLASSMAN

550 Memorial Dr., Apt. 11B-1
Cambridge, MA 02139

ELG@MIT.edu
(215) 694-9631

Interests

My current research focuses on improving the assistance available to students working on computer-based engineering challenges. This work involves both providing supplemental information to teachers supervising large numbers of engineering solution submissions, facilitating effective peer-pairing, and automating certain types of debugging assistance for students.

Keywords

Learning sciences, human-machine systems, educational technology, online education, machine learning.

Education

Massachusetts Institute of Technology — Cambridge, MA
Ph.D., Electrical Engineering and Computer Science — Expected 2015
4.9/5.0 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

Publications and Patent Applications

- Elena L. Glassman, Ned Gulley, and Robert C. Miller. "Toward Facilitating Assistance to Students Attempting Engineering Design Problems." Accepted for publication in the *Proceedings of the Tenth Annual International Conference on International Computing Education Research*, ICER '13. ACM.
- Elena L. Glassman. "Visualizing and Classifying Multiple Solutions to Engineering Design Problems." Extended Abstract. Accepted for publication as part of the Doctoral Consortium of the *Tenth Annual International Computing Education Research Conference*, ICER '13. ACM.
- Elena L. 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)*, 2012.
- Elena L. Glassman and Russ Tedrake. "A quadratic regulator-based heuristic for rapidly exploring state space." In *Proceedings of the International Conference on Robotics and Automation (ICRA)*, 2010.
- 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." *Proceedings of the 28th Annual International Conference of the IEEE Engineering in Medicine and Biology Society* (EMBS). Aug. 30 - Sept. 3, 2006. New York City, USA.
- John V. Guttag, Ali Shoeb, Elena L. Glassman, Eugene I. Shih. USPTO Applicaton Number: 20090082689 "Method and apparatus for reducing the number of channels in an eeg-based epileptic seizure detector."

Teaching Cerifications and Experience

- Computer Science Instructor for Middle East Education through Technology (MEET), teaching Israeli and Palestinian high school students Summer '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
- Recitation Instructor for 6.004: Computation Structures Spring '12 - present
- Teaching Assistant for 6.01: Introduction to EECS 1 Fall '11
- Completed the MIT Teaching and Learning Lab's Graduate Student Teaching Certificate Program
- Co-taught EECS Department's Review of Signals and Systems IAP '11, '12, '13
- Tutor for 6.003: Signals and Systems and 6.041: Probabilistic Systems Analysis through the MIT EECS/HKN tutoring service '06 - '11

Leadership

- 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 Sept. '13 - May '14
- NSF Graduate Research Fellowship Sept. '11 - Sept. '14
- National Defense Science and Engineering Graduate Fellowship Sept. '08 - Sept. '11

Selected Scholarships and Awards

- EECS 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

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

Selected Research Experiences

Graduate Research Assistant Feb '13 - present
User Interface Design Group, MIT Computer Science and Artificial Intelligence Lab
Cambridge, MA

- Developing human-machine systems to support teachers supervising computer-based engineering challenges.
- Developing automated assistance tools for students tackling computer-based engineering challenges.

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.