

---

## ELENA LEAH GLASSMAN

---

32 Vassar Street, Rm 32-G707  
Cambridge, MA 02139

ELG@MIT.edu  
(215) 694-9631

- Interests** I create tools and user interfaces for teaching and learning online and at scale. I am currently working on tools for teaching programming to thousands of students at once. *Human-computer interaction (HCI), learning at scale, computer science education.*
- Education**
- Massachusetts Institute of Technology** Cambridge, MA  
Ph.D., Electrical Engineering and Computer Science May 2016  
4.8/5.0 GPA (Expected)  
Advisor: Robert C. Miller
- Massachusetts Institute of Technology** Cambridge, MA  
Master of Eng., Electrical Engineering and Computer Science Feb. 2010  
Advisor: Russ Tedrake. Thesis: “A quadratic regulator-based heuristic for rapidly exploring state space.”
- Massachusetts Institute of Technology** Cambridge, MA  
B.S., Electrical Science and Engineering June 2008  
4.8/5.0 GPA
- Research Positions**
- User Interface Design Group, MIT CSAIL** Feb '13 - present  
*Ph.D. Candidate* Cambridge, MA
- Microsoft Research** May '14 - Aug. '14  
*Research Intern, neXus Research Team* Redmond, WA
- Created, studied, and published Mudslide, a novel system for flipped classrooms.
  - Mentored by Merrie Ringel Morris, Andres Monroy-Hernandez, and Anoop Gupta.
- Stanford University** Oct. '10 - Jan. '11  
*Visiting Researcher, Biomimetics and Dexterous Manipulation Lab* Stanford, CA
- Led an MIT-Stanford collaboration on agile autonomous aerial vehicles, resulting in a publication and a funded grant.
- Robot Locomotion Group, MIT CSAIL** June '08 - May '12  
*Graduate Research Assistant* Cambridge, MA
- Networks & Mobile Systems Group, MIT CSAIL** Feb. '05 - June '06  
*Undergraduate Researcher* Cambridge, MA
- Created and published a novel algorithm for processing EEGs, and later helped file a patent application on the technology.
- EEG Lab, Princeton University** Mar. '04 - Aug. '04  
*Independent Researcher, invited by the EEG Lab director* Princeton, NJ
- Journal Articles** OverCode: Visualizing variation in student solutions to programming problems at scale. **Elena L. Glassman**, Jeremy Scott, Rishabh Singh, Philip J. Guo, Robert C. Miller. *ACM Transactions on Computer-Human Interaction (TOCHI)* 22, no. 2 (2015).
- Online Learning at Scale Special Issue

---

A wavelet-like filter based on neuron action potentials for analysis of human scalp electroencephalographs.

**Elena L. Glassman**

*IEEE Transactions on Biomedical Engineering* 52, no. 11 (2005).

- A single-author IEEE journal article on the signal processing of EEGs based on my Intel ISEF project, which shared the top award with 2/1300 other projects.

## Conference Papers

Mudslide: A spatially anchored census of student confusion for online lecture videos.

**Elena L. Glassman**, Juho Kim, Andres Monroy-Hernandez, Meredith Ringel Morris.

CHI 2015: ACM Conference on Human Factors in Computing Systems.

**Honorable Mention Award (top 5%)** (23% acceptance rate, 10 pages)

RIMES: Embedding interactive multimedia exercises in lecture videos.

Juho Kim, **Elena L. Glassman**, Andres Monroy-Hernandez, Meredith Ringel Morris.

CHI 2015: ACM Conference on Human Factors in Computing Systems.

(23% acceptance rate, 10 pages)

Toward facilitating assistance to students attempting engineering design problems.

**Elena L. Glassman**, Ned Gulley, Robert C. Miller.

ICER 2013: ACM Conference on International Computing Education Research.

(31% acceptance rate, 6 pages)

Region of attraction estimation for a perching aircraft: a lyapunov method exploiting barrier certificates.

**Elena L. Glassman**, Alexis Lussier Desbiens, Mark Tobenkin, Mark Cutkosky, Russ Tedrake.

ICRA 2012: IEEE International Conference on Robotics and Automation.

(40% acceptance rate, 8 pages)

A quadratic regulator-based heuristic for rapidly exploring state space.

**Elena L. Glassman**, Russ Tedrake.

ICRA 2010: IEEE International Conference on Robotics and Automation.

(41% acceptance rate, 8 pages)

## Awards and Honors

- **Honorable Mention Award** Apr. '15  
CHI 2015. Among the top 5% of all submissions.
- **Amar Bose Teaching Fellowship** Jan. '14 - Dec. '14  
Awarded to 3 nominated teaching assistants across MIT.
- **NSF Graduate Research Fellowship** Sept. '11 - Sept. '14
- **National Defense Science and Engineering Graduate (NDSEG) Fellowship** Sept. '08 - Sept. '11
- **MIT EECS Dept. Masterworks Oral Thesis Presentation Award** May '09
- **Eta Kappa Nu**, an EECS honor society '08
- **National Gallery for America's Young Inventors Induction** Feb. '04
- Selected awards from the **Intel International Science and Engineering Fair**
  - **Intel Foundation Young Scientist Award** (\$50,000) May '03  
Given to the top 3 out of 1300 projects at Intel International Science and Engineering Fair.
  - **IEEE President's Scholarship** (\$10,000) May '04
  - **Best of Category: Computer Science** (\$5,000) May '03

Selected Press	<ul style="list-style-type: none"> <li>• <b>The New York Times</b>: “Not Too Young for a Patent” Feb. '04</li> <li>• <b>Science</b>: “Rising Stars” (30 May 2003), <i>Science</i> 300 (5624), 1368d.</li> </ul>
Profiles and Interviews	<ul style="list-style-type: none"> <li>• <b>Reddit’s Upvoted podcast</b> Feb. '15 Chosen as one of the A.V. Club’s best podcasts of the week.</li> <li>• <b>WIRED</b> opinion piece: “MIT Computer Scientists Demonstrate the Hard Way That Gender Still Matters” with Jean Yang and Neha Narula Dec. '14</li> <li>• <b>Reddit AMA</b> on gender, CS, and academia with Jean Yang and Neha Nerula Received 4763 comments, rose to the top 5 stories on the Reddit homepage, and was covered by Business Insider, Gigaom, and BostInno among others. Dec. '14</li> <li>• <b>CNN’s Lou Dobbs Tonight</b> Fall '03 Profiled in the segment “America’s Bright Future”</li> <li>• <b>CNN’s American Morning</b>, Guest May '03</li> </ul>
Seminars	<ul style="list-style-type: none"> <li>• <b>Invited Talk, Wellesley HCI</b> March '15 “User Interfaces for Teaching Online and at Scale”</li> <li>• <b>DUB Seminar, HCI &amp; Design, U. of Washington</b> July '14 “OverCode: Visualizing variation in student solutions to programming problems at scale.”</li> <li>• <b>Invited Talk, Schlumberger-Doll Research Center</b> Oct. '01 “Signal Dissection by Repetitive Smoothing and Extraction.” Talk given as part of receiving the Schlumberger Excellence in Educational Development award at Intel ISEF 2001.</li> </ul>
Public Speaking	<ul style="list-style-type: none"> <li>• Invited speaker, MIT CSAIL’s <b>Hour of Code</b> event Dec. '14</li> <li>• Panel, MIT EECS Teaching Assistant Orientation Feb. '13</li> <li>• Invited speaker, MIT Women’s Technology Program July '08, '11</li> <li>• Invited speaker, MIT CSAIL Campus Preview Weekend Apr. '08</li> </ul>
Posters, Workshops, and Doctoral Consortium Papers	<p>Learner-Sourcing in an Engineering Class at Scale. <b>Elena L. Glassman</b>, Christopher J. Terman, Robert C. Miller. L@S 2015: ACM Learning at Scale Conference.</p> <p>OverCode: visualizing variation in student solutions to programming problems at scale. <b>Elena L. Glassman</b>, Jeremy Scott, Rishabh Singh, Philip J. Guo, Robert C. Miller. MIT Big Data Initiative, Nov. 2014.</p> <p>Interacting with massive numbers of student solutions. (Poster and Doctoral Consortium) <b>Elena L. Glassman</b>. UIST 2014: ACM User Interface Software and Technology Symposium.</p> <p>Feature engineering for clustering student solutions. <b>Elena L. Glassman</b>, Rishabh Singh, Ned Gulley, Robert C. Miller. CHI 2014: Learning Innovations at Scale Workshop.</p> <p>Feature engineering for clustering student solutions. <b>Elena L. Glassman</b>, Rishabh Singh, Robert C. Miller. L@S 2014: ACM Learning at Scale Conference.</p>

---

Mining student-generated alternative implementations.

**Elena L. Glassman**, Robert C. Miller.

Quanta Workshop and Education Symposium, Taiwan, Jan. 2014.

Visualizing and classifying multiple solutions to engineering design problems.

**Elena L. Glassman**.

ICER 2013: ACM Conference on International Computing Education Research.

Reducing the number of channels for an ambulatory patient-specific EEG-based epileptic seizure detector by applying recursive feature elimination.

**Elena L. Glassman**, John V. Guttag.

EMBS 2006: IEEE Engineering in Medicine and Biology Society.

## Teaching

- **Teaching Assistant, Computation Structures, MIT**  
Undergraduate lab course on computer architecture. Spring '12 - Fall '13, Fall '14  
Ran twice-weekly recitations, created new tools to support students, and assisted students in the course lab space.
- **Instructor, Software Carpentry, NYU** Mar. '14  
Worked with a team of instructors to teach a workshop covering Python and git.
- **Instructor, Middle East Education through Technology (MEET)** Summer '13  
Taught the basics of programming and teamwork to Israeli and Palestinian gifted high school sophomores in Jerusalem.
- **Educational video creator, MIT Teaching and Learning Lab** Spring '13  
Produced for the Singapore University of Technology and Design, explained radio receiver technology.
- **Instructor, Review of Signals & Systems, MIT** Jan. '11, '12, '13
- **Teaching Assistant, Introduction to EECS 1, MIT** Fall '11
- **Tutor, Signals, Systems, & Probabilistic Systems Analysis, MIT** '06 - '11

## Training

- **Graduate Student Teaching Certificate Program, MIT** May '11  
A year-long seminar in state-of-the-art teaching techniques.

## Professional Service

- **Session Chair ACM Computer-Human Interaction (CHI)** Apr. '15  
Social Media & Citizen Science
- **Works-in-Progress Program Committee ACM Computer-Human Interaction (CHI)** Jan. '15
- **President, Middle East Education through Technology's student group at MIT**  
Recruiting and coordinating MIT students as summer instructors. Fall '13 - present
- **MIT EdTech Reading Group Co-Organizer** Fall '12  
Formed a reading group for MIT students, faculty, and staff to discuss papers relevant to the growing interest in technology in education and education at scale.
- **Eta Kappa Nu Vice-President, MIT Chapter** Spring '08 - '09  
MIT's EECS honor society
- **MIT EECS Department Education Committee** Dec. '06 - Fall '08  
Served as a student representative during a significant department-wide curriculum redesign.
- **MIT Council on Educational Technology** Spring '05

<b>Outreach</b>	<hr/>	
	• Mentor, Harvard Women in CS's "Women Engineers Code Hackathon"	Dec. '13
	• Agile robotics representative, Cambridge Science Festival	Nov. '11
	• Agile robotics representative, NH TechFest	May '11
<b>Other activities</b>	<b>Wrestling</b>	
	• Team Member, MIT's NCAA Div. III Varsity Wrestling Team	Winter '08 - '09
	• Competitor, US and Canada in regional & national women's tournaments	'09 - '12
	• Two-time Training Camp participant, US Olympic Training Center in Colorado Springs, CO	Aug. '10, Sept. '12