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## ELENA LEAH GLASSMAN

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<b>Interests</b>	I create tools and user interfaces for teaching and learning online and at scale. My thesis work is focused on tools for teaching programming to thousands of students at once. <i>Human-computer interaction (HCI), learning at scale, computer science education.</i>	
<b>Education</b>	<b>Massachusetts Institute of Technology</b>	Cambridge, MA
	Ph.D., Electrical Engineering and Computer Science 4.8/5.0 GPA Advisor: Robert C. Miller	May 2016 (Expected)
	<b>Massachusetts Institute of Technology</b>	Cambridge, MA
	Master of Eng., Electrical Engineering and Computer Science Advisor: Russ Tedrake. Thesis: “A quadratic regulator-based heuristic for rapidly exploring state space.”	Feb. 2010
	<b>Massachusetts Institute of Technology</b>	Cambridge, MA
	B.S., Electrical Science and Engineering 4.8/5.0 GPA	June 2008
<b>Research Positions</b>	<b>MIT CSAIL</b> User Interface Design Group <i>Ph.D. Candidate</i>	Feb. '13 - present Cambridge, MA
	<b>Google</b> Knowledge Graph <i>User Experience Research Intern</i> <ul style="list-style-type: none"><li>• Prototyping interfaces that help people learn.</li><li>• Mentored by Dan Russell.</li></ul>	May '15 - Aug. '15 Mountain View, CA
	<b>Microsoft Research</b> neXus Research Team <i>Research Intern</i> <ul style="list-style-type: none"><li>• Created, studied, and published Mudslide, a novel system for flipped classrooms.</li><li>• Mentored by Merrie Ringel Morris, Andres Monroy-Hernandez, and Anoop Gupta.</li></ul>	May '14 - Aug. '14 Redmond, WA
	<b>Stanford University</b> Biomimetics & Dexterous Manipulation Lab <i>Visiting Researcher</i> <ul style="list-style-type: none"><li>• Led an MIT-Stanford collaboration on agile autonomous aerial vehicles, resulting in a publication and a funded grant.</li></ul>	Oct. '10 - Jan. '11
	<b>MIT CSAIL</b> Robot Locomotion Group <i>Graduate Research Assistant</i>	June '08 - May '12 Cambridge, MA
	<b>MIT CSAIL</b> Networks & Mobile Systems Group <i>Undergraduate Researcher</i> <ul style="list-style-type: none"><li>• Created and published a novel algorithm for processing EEGs, and later helped file a patent application on the technology.</li></ul>	Feb. '05 - June '06 Cambridge, MA
	<b>Princeton University</b> EEG Lab <i>Independent Researcher, invited by the EEG Lab director</i>	Mar. '04 - Aug. '04 Princeton, NJ

<b>Journal Articles</b>	<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.  <i>ACM Transactions on Computer-Human Interaction (TOCHI)</i> 22, no. 2 (2015).</p> <ul style="list-style-type: none"> <li>• Online Learning at Scale Special Issue</li> </ul>
	<p>A wavelet-like filter based on neuron action potentials for analysis of human scalp electroencephalographs.  <b>Elena L. Glassman</b>  <i>IEEE Transactions on Biomedical Engineering</i> 52, no. 11 (2005).</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>
<b>Conference Papers</b>	<p>Mudslide: A spatially anchored census of student confusion for online lecture videos.  <b>Elena L. Glassman</b>, Juho Kim, Andres Monroy-Hernandez, Meredith Ringel Morris.          CHI 2015: ACM Conference on Human Factors in Computing Systems.  <i>Honorable Mention Award (top 5%)(23% acceptance rate, 10 pages)</i></p>
	<p>RIMES: Embedding interactive multimedia exercises in lecture videos.          Juho Kim, <b>Elena L. Glassman</b>, Andres Monroy-Hernandez, Meredith Ringel Morris.          CHI 2015: ACM Conference on Human Factors in Computing Systems.  <i>(23% acceptance rate, 10 pages)</i></p>
	<p>Toward facilitating assistance to students attempting engineering design problems.  <b>Elena L. Glassman</b>, Ned Gulley, Robert C. Miller.          ICER 2013: ACM Conference on International Computing Education Research.  <i>(31% acceptance rate, 6 pages)</i></p>
	<p>Region of attraction estimation for a perching aircraft: a lyapunov method exploiting barrier certificates.  <b>Elena L. Glassman</b>, Alexis Lussier Desbiens, Mark Tobenkin, Mark Cutkosky, Russ Tedrake.          ICRA 2012: IEEE International Conference on Robotics and Automation.  <i>(40% acceptance rate, 8 pages)</i></p>
	<p>A quadratic regulator-based heuristic for rapidly exploring state space.  <b>Elena L. Glassman</b>, Russ Tedrake.          ICRA 2010: IEEE International Conference on Robotics and Automation.  <i>(41% acceptance rate, 8 pages)</i></p>
	<p>iBCM: Interactive Bayesian Case Model Empowering Humans via Intuitive Interaction.          Been Kim, <b>Elena Glassman</b>, Brittney Johnson, and Julie Shah.          MIT CSAIL TR-2015-010, April 1, 2015.</p>
<b>Technical Reports</b>	
<b>Posters, Workshops, and Doctoral Consortium Papers</b>	<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>Using and Designing Platforms for In Vivo Educational Experiments.          Joseph Jay Williams, Korinn Ostrow, Xi Xiong, <b>Elena Glasman</b>, Juho Kim, Samuel Maldonado, Justin Reich, Neil Heffernan.          L@S 2015: ACM Learning at Scale Conference.</p>
	<p>OverCode: visualizing variation in student solutions to programming problems at scale.</p>

**Elena L. Glassman**, Jeremy Scott, Rishabh Singh, Philip J. Guo, Robert C. Miller.  
MIT Big Data Initiative, Nov. 2014.

Interacting with massive numbers of student solutions.  
(Poster and Doctoral Consortium)

**Elena L. Glassman**.

UIST 2014: ACM User Interface Software and Technology Symposium.

Feature engineering for clustering student solutions.

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

CHI 2014: Learning Innovations at Scale Workshop.

Feature engineering for clustering student solutions.

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

L@S 2014: ACM Learning at Scale Conference.

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.

## 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

- **MIT News**: "Reviewing online homework at scale" March '15  
Chosen as the MIT homepage Spotlight story
- **The New York Times**: "Not Too Young for a Patent" Feb. '04
- **Science**: "Rising Stars" (30 May 2003), *Science* 300 (5624), 1368d.

Profiles, Interviews, and Op-Eds	• <b>Reddit's Upvoted podcast</b> Feb. '15 Interviewed with Jean Yang and Neha Narula. Chosen as one of the A.V. Club's best podcasts of the week.
	• <b>WIRED</b> opinion piece: "MIT Computer Scientists Demonstrate the Hard Way That Gender Still Matters" with Jean Yang and Neha Narula Dec. '14
	• Profiled in the <b>MIT EECS Department Newsletter</b> Fall '10
	• <b>CNN's Lou Dobbs Tonight</b> Fall '03 Profiled in the segment "America's Bright Future"
	• <b>CNN's American Morning</b> , Guest May '03
Seminars and Invited Talks	• <b>HarvardX</b> May '15 "User Interfaces for Teaching Online and at Scale"
	• <b>Wellesley HCI</b> March '15 "User Interfaces for Teaching Online and at Scale"
	• <b>DUB Seminar, HCI &amp; Design, U. of Washington</b> July '14 "OverCode: Visualizing variation in student solutions to programming problems at scale."
	• <b>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.
Public Speaking	• Panelist, Women Techmaker's Summit at Google Cambridge March '15
	• Invited speaker, MIT CSAIL's <b>Hour of Code</b> event Dec. '14
	• Panelist, MIT EECS Teaching Assistant Orientation Feb. '13
	• Invited speaker, MIT Women's Technology Program July '08, '11
	• Invited speaker, MIT CSAIL Campus Preview Weekend Apr. '08
Teaching	• <b>Teaching Assistant, Computation Structures, MIT</b> 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.
	• <b>Instructor, Software Carpentry, NYU</b> Mar. '14 Worked with a team of instructors to teach a workshop covering Python and git.
	• <b>Instructor, Middle East Education through Technology (MEET)</b> Summer '13 Taught the basics of programming and teamwork to Israeli and Palestinian gifted high school sophomores in Jerusalem.
	• <b>Educational video creator, MIT Teaching and Learning Lab</b> Spring '13 Produced for the Singapore University of Technology and Design, explained radio receiver technology.
	• <b>Instructor, Review of Signals &amp; Systems, MIT</b> Jan. '11, '12, '13
	• <b>Teaching Assistant, Introduction to EECS 1, MIT</b> Fall '11
	• <b>Tutor, Signals, Systems, &amp; Probabilistic Systems Analysis, MIT</b> '06 - '11
Research Mentoring	• Stacey Terman, MIT undergraduate Master's thesis proposal
	• Aaron Lin, MIT undergraduate Built and deployed Dear Beta, a platform for crowdsourcing hints in a large undergraduate computer architecture course

<b>Training</b>	<ul style="list-style-type: none"> <li>• <b>Graduate Student Teaching Certificate Program, MIT</b> May '11 A year-long seminar in state-of-the-art teaching techniques.</li> </ul>
<b>Service and Leadership</b>	<ul style="list-style-type: none"> <li>• <b>Reviewer, <i>User Interface Software and Technology</i> (UIST)</b> May '15</li> <li>• <b>Session Chair <i>ACM Computer-Human Interaction</i> (CHI)</b> Apr. '15 Social Media &amp; Citizen Science</li> <li>• <b>Works-in-Progress Program Committee <i>ACM Computer-Human Interaction</i> (CHI)</b> Jan. '15</li> <li>• <b>President, <i>Middle East Education through Technology's student group at MIT</i></b> Recruiting and coordinating MIT students as summer instructors. Fall '13 - present</li> <li>• <b>MIT EdTech Reading Group Co-Organizer</b> 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.</li> <li>• <b>Eta Kappa Nu Vice-President, <i>MIT Chapter</i></b> Spring '08 - '09 MIT's EECS honor society</li> <li>• <b>MIT EECS Department Education Committee</b> Dec. '06 - Fall '08 Served as a student representative during a significant department-wide curriculum redesign.</li> <li>• <b>MIT Council on Educational Technology</b> Spring '05</li> </ul>
<b>Outreach</b>	<ul style="list-style-type: none"> <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>Harvard Women in CS's "Women Engineers Code Hackathon", Mentor</b> Dec. '13</li> <li>• <b>Cambridge Science Festival, Robotics representative</b> Nov. '11</li> <li>• <b>NH TechFest, Robotics representative</b> May '11</li> </ul>
<b>Other activities</b>	<b>Wrestling</b> <ul style="list-style-type: none"> <li>• Team Member, MIT's NCAA Div. III Varsity Wrestling Team Winter '08 - '09</li> <li>• Competitor, US and Canada in regional &amp; national women's tournaments '09 - '12</li> <li>• Two-time Training Camp participant, US Olympic Training Center in Colorado Springs, CO Aug. '10, Sept. '12</li> </ul>