

ELENA LEAH GLASSMAN

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- Interests** 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.
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**
- MIT CSAIL** User Interface Design Group Feb. '13 - present
Ph.D. Candidate Cambridge, MA
- Google** May '15 - Aug. '15
User Experience Research Intern Mountain View, CA
- Prototyping interfaces that help people learn.
 - Mentored by Dan Russell.
- Microsoft Research** neXus Research Team May '14 - Aug. '14
Research Intern 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** Biomimetics & Dexterous Manipulation Lab
Visiting Researcher Oct. '10 - Jan. '11
- Led an MIT-Stanford collaboration on agile autonomous aerial vehicles, resulting in a publication and a funded grant.
- MIT CSAIL** Robot Locomotion Group June '08 - May '12
Graduate Research Assistant Cambridge, MA
- MIT CSAIL** Networks & Mobile Systems Group 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.
- Princeton University** EEG Lab 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

Learnersourcing Personalized Hints.

Elena L. Glassman, Aaron Lin, Carrie J. Cai, and Robert C. Miller.

To appear in the ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) '16.

Foobaz: Variable Name Feedback for Student Code at Scale.

Elena L. Glassman, Lyla Fischer, Jeremy Scott, and Robert C. Miller.

To appear in the ACM Symposium on User Interface Software and Technology (UIST) '15.

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)

Technical Reports

iBCM: Interactive Bayesian Case Model Empowering Humans via Intuitive Interaction.

Been Kim, **Elena Glassman**, Brittney Johnson, and Julie Shah.

MIT CSAIL TR-2015-010, April 1, 2015.

Conference Posters, Workshops, and Doctoral Consortium Papers	<hr/> <p>Learner-Sourcing in an Engineering Class at Scale. Elena L. Glassman, 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, Elena Glasman, Juho Kim, Samuel Maldonado, Justin Reich, Neil Heffernan. L@S 2015: ACM Learning at Scale Conference.</p> <p>Interacting with massive numbers of student solutions. (Poster and Doctoral Consortium) Elena L. Glassman. UIST 2014: ACM User Interface Software and Technology Symposium.</p> <p>Feature engineering for clustering student solutions. Elena L. Glassman, Rishabh Singh, Ned Gulley, Robert C. Miller. CHI 2014: Learning Innovations at Scale Workshop.</p> <p>Feature engineering for clustering student solutions. Elena L. Glassman, Rishabh Singh, Robert C. Miller. L@S 2014: ACM Learning at Scale Conference.</p> <p>Visualizing and classifying multiple solutions to engineering design problems. Elena L. Glassman. ICER 2013: ACM Conference on International Computing Education Research.</p> <p>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.</p>
Patent Application	<p>Method and apparatus for reducing the number of channels in an EEG-based epileptic seizure detector. US Patent App. 12/196,690. John V. Guttag, Ali Shoeb, Elena L. Glassman, Eugene I. Shih. Cited by 25 other patents, patent applications, and papers. Filed Aug. 2008, published May 2010, denied Aug. 2014.</p>
Awards and Honors	<ul style="list-style-type: none"> • Invited to participate in Rising Stars program for aspiring CS faculty. June '15 • 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 <ul style="list-style-type: none"> – 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"> • MIT News: “Reviewing online homework at scale” Chosen as the MIT homepage Spotlight story • The New York Times: “Not Too Young for a Patent” • Science: “Rising Stars” (30 May 2003), <i>Science</i> 300 (5624), 1368d. 	<p>March '15</p> <p>Feb. '04</p>
Profiles, Interviews, and Op-Eds	<ul style="list-style-type: none"> • Reddit’s Upvoted podcast Interviewed with Jean Yang and Neha Narula. Chosen as one of the A.V. Club’s best podcasts of the week. • WIRED opinion piece: “MIT Computer Scientists Demonstrate the Hard Way That Gender Still Matters” with Jean Yang and Neha Narula • Profiled in the MIT EECS Department Newsletter • CNN’s Lou Dobbs Tonight • Profiled in the segment “America’s Bright Future” • CNN’s American Morning, Guest 	<p>Feb. '15</p> <p>Dec. '14</p> <p>Fall '10</p> <p>Fall '03</p> <p>May '03</p>
Seminars and Invited Talks	<ul style="list-style-type: none"> • Stanford HCI “Learnersourcing Personalized Hints” • HarvardX “User Interfaces for Teaching Online and at Scale” • Wellesley HCI “User Interfaces for Teaching Online and at Scale” • DUB Seminar, HCI & Design, U. of Washington • “OverCode: Visualizing variation in student solutions to programming problems at scale.” • Schlumberger-Doll Research Center • “Signal Dissection by Repetitive Smoothing and Extraction.” Talk given as part of receiving the Schlumberger Excellence in Educational Development award at Intel ISEF 2001. 	<p>July '15</p> <p>May '15</p> <p>March '15</p> <p>July '14</p> <p>Oct. '01</p>
Teaching	<ul style="list-style-type: none"> • 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 • Worked with a team of instructors to teach a workshop covering Python and git. • Instructor, Middle East Education through Technology (MEET) • 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 • Produced for the Singapore University of Technology and Design, explained radio receiver technology. • Instructor, Review of Signals & Systems, MIT • Teaching Assistant, Introduction to EECS 1, MIT • Tutor, Signals, Systems, & Probabilistic Systems Analysis, MIT 	<p>Spring '12 - Fall '13, Fall '14</p> <p>Mar. '14</p> <p>Summer '13</p> <p>Spring '13</p> <p>Jan. '11, '12, '13</p> <p>Fall '11</p> <p>'06 - '11</p>

Research Mentoring	<ul style="list-style-type: none"> • Stacey Terman, MIT Master's of Engineering student Spring '15 - present • Aaron Lin, MIT undergraduate Spring '15 - present Built and deployed Dear Beta, a platform for crowdsourcing hints in a large undergraduate computer architecture course
Training	<ul style="list-style-type: none"> • Graduate Student Teaching Certificate Program, MIT May '11 A year-long seminar in state-of-the-art teaching techniques.
Service and Leadership	<ul style="list-style-type: none"> • Reviewer, <i>ACM Computer-Human Interaction</i> (CHI) Oct '15 • Reviewer, <i>User Interface Software and Technology</i> (UIST) May '15 • Session Chair <i>ACM Computer-Human Interaction</i> (CHI) Apr. '15 Social Media & Citizen Science • Works-in-Progress Program Committee <i>ACM Computer-Human Interaction</i> (CHI) Jan. '15 • President, <i>Middle East Education through Technology's student group at MIT</i> 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, <i>MIT Chapter</i> 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
Public Speaking	<ul style="list-style-type: none"> • Invited speaker, GirlTechPower summer camp for girls Aug. '15 • Panelist, Women Techmaker's Summit at Google Cambridge March '15 • Invited speaker, MIT CSAIL's Hour of Code 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
Outreach	<ul style="list-style-type: none"> • Reddit AMA 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 • Harvard Women in CS's "Women Engineers Code Hackathon", Mentor Dec. '13 • Cambridge Science Festival, Robotics representative Nov. '11 • NH TechFest, Robotics representative May '11
Other activities	<p>Wrestling</p> <ul style="list-style-type: none"> • 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 Colorago Springs, CO Aug. '10, Sept. '12