
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. <i>Human-computer interaction (HCI), learning at scale, computer science education.</i>	
Education	Massachusetts Institute of Technology	Cambridge, MA
	Ph.D., Electrical Engineering and Computer Science	May 2016
	4.8/5.0 GPA	(Expected)
	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
	<i>Ph.D. Candidate</i>	Cambridge, MA
	Google	May '15 - Aug. '15
	<i>User Experience Research Intern</i>	Mountain View, CA
	<ul style="list-style-type: none">• Prototyping interfaces that help people learn.• Mentored by Dan Russell.	
	Microsoft Research neXus Research Team	May '14 - Aug. '14
	<i>Research Intern</i>	Redmond, WA
	<ul style="list-style-type: none">• 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	
	<i>Visiting Researcher</i>	Oct. '10 - Jan. '11
	<ul style="list-style-type: none">• 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
	<i>Graduate Research Assistant</i>	Cambridge, MA
	MIT CSAIL Networks & Mobile Systems Group	Feb. '05 - June '06
	<i>Undergraduate Researcher</i>	Cambridge, MA
	<ul style="list-style-type: none">• 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
	<i>Independent Researcher, invited by the EEG Lab director</i>	Princeton, NJ

Journal Articles	<p>OverCode: Visualizing variation in student solutions to programming problems at scale. Elena L. Glassman, 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"> • Online Learning at Scale Special Issue
	<p>A wavelet-like filter based on neuron action potentials for analysis of human scalp electroencephalographs. Elena L. Glassman <i>IEEE Transactions on Biomedical Engineering</i> 52, no. 11 (2005).</p> <ul style="list-style-type: none"> • 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	<p>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. <i>Honorable Mention Award (top 5%)(23% acceptance rate, 10 pages)</i></p>
	<p>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. <i>(23% acceptance rate, 10 pages)</i></p>
	<p>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. <i>(31% acceptance rate, 6 pages)</i></p>
	<p>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. <i>(40% acceptance rate, 8 pages)</i></p>
	<p>A quadratic regulator-based heuristic for rapidly exploring state space. Elena L. Glassman, Russ Tedrake. ICRA 2010: IEEE International Conference on Robotics and Automation. <i>(41% acceptance rate, 8 pages)</i></p>
Technical Reports	<p>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.</p>
Posters, Workshops, and Doctoral Consortium Papers	<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>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	• Reddit’s Upvoted podcast Feb. '15 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 Dec. '14
	• Profiled in the MIT EECS Department Newsletter Fall '10
	• CNN’s Lou Dobbs Tonight Fall '03 Profiled in the segment “America’s Bright Future”
	• CNN’s American Morning , Guest May '03
Seminars and Invited Talks	• HarvardX May '15 “User Interfaces for Teaching Online and at Scale”
	• Wellesley HCI March '15 “User Interfaces for Teaching Online and at Scale”
	• DUB Seminar, HCI & Design, U. of Washington July '14 “OverCode: Visualizing variation in student solutions to programming problems at scale.”
	• Schlumberger-Doll Research Center 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 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
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
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

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>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
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	Wrestling <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 Colorado Springs, CO Aug. '10, Sept. '12