

Elena Leah Glassman

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Areas of specialization

Human-computer interaction • Programming education at scale • Program synthesis

Academic positions

| | | |
|--------------|--------------------------|---|
| 2016-present | Postdoctoral Scholar | Berkeley Institute of Design, EECS, UC Berkeley |
| 2012-2016 | Graduate researcher | User Interface Design Group, CS & AI Lab, MIT |
| 2010-2011 | Visiting researcher | Biomimetics & Dexterous Manipulation Lab, Stanford University |
| 2008-2011 | Graduate researcher | Robot Locomotion Group, CS & AI Lab, MIT |
| 2004-2008 | Undergraduate researcher | CS & AI Lab, MIT |
| 2003-2004 | Volunteer researcher | EEG Lab, Princeton University |

Industry positions

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| 2015 | User experience research intern | Search, Google |
| 2014 | Design research intern | neXus Research Team, Microsoft Research |

Education

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| 2016 | Ph.D. in Electrical Engineering & Computer Science | MIT |
| 2010 | M.Eng. in Electrical Engineering & Computer Science | MIT |
| 2008 | B.S. in Electrical Science & Engineering | MIT |

Selected fellowships and scholarships

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| 2014 | MIT Amar Bose Teaching Fellow, for developing innovative tools for teaching CS at scale |
| 2011-2014 | NSF Graduate Research Fellow (NSF GRFP) |
| 2008-2011 | National Defense Science and Engineering Graduate Fellow (NDSEG) |
| 2004 | IEEE President's Scholarship (\$10,000) |
| 2003 | Intel Foundation Young Scientist Award (\$50,000) <i>Awarded to the top 3 individual projects at Intel International Science & Engineering Fair</i> |

Selected honors & awards

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| 2016 | Audience Choice Award, MIT Can Talk speech competition |
| 2015 | Best of CHI Honorable Mention (top 5% of papers) |
| 2015 | Selected for an oral research presentation at MIT's Rising Stars workshop for aspiring CS faculty |
| 2009 | Masterworks Oral Thesis Presentation Award, MIT EECS |
| 2008 | Inducted into Eta Kappa Nu, EECS Honor Society |
| 2004 | Valedictorian & commencement speaker, Central Bucks High School West |
| 2004 | Inducted into the National Gallery for America's Young Inventors |
| 2003 | Intel International Science and Engineering Fair – Best of Category: Computer Science (\$5,000) |

Service

DEPARTMENT

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| 2006-2008 | MIT EECS Department Education Committee member |
| 2005 | MIT Council on Educational Technology member |

PROFESSION

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| 2017 | Program Committee member, Workshop on Evaluation and Usability of Programming Languages and Tools (PLATEAU) at SPLASH |
| 2017 | ACM UIST Registration Chair |
| 2015-present | ACM CHI, UIST, CSCW, and TOCHI reviewer |
| 2015, 2017 | ACM CHI session chair, "Social media & citizen science" and "All About Data" |
| 2015 | ACM CHI Works-in-Progress Program Committee member |

US GOVERNMENT

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| 2017 | DARPA/ISAT "Augmented Developers: Tools for Hybrid Human-Machine Software Engineering" workshop invited participant |
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Teaching

EXPERIENCE

| | | |
|-----------|---|-----------------------------|
| 2016 | Co-lecturer, User Interface Design & Implementation (≈ 175 students) | MIT EECS |
| 2013 | Co-lecturer, introductory python programming | MIT MEET, Jerusalem |
| 2013 | Educational video script writer, radio receiver technology | MIT Teaching & Learning Lab |
| 2012-2014 | Teaching assistant, Computation Structures | MIT EECS |
| 2011 | Teaching assistant, Introduction to EECS 1 | MIT EECS |
| 2006-2011 | Tutor, Signals, Systems, & Probabilistic Systems Analysis | MIT EECS Honor Society |

CERTIFICATIONS

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|------|---------------------------------------|-----------------------------|
| 2011 | Graduate Student Teaching Certificate | MIT Teaching & Learning Lab |
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Publications in Human-Computer Interaction and Learning at Scale

JOURNAL ARTICLES

- 2015 TOCHI **EL Glassman**, J Scott, R Singh, P Guo, RC Miller.
“OverCode: visualizing variation in student solutions to programming problems at scale.”
ACM Transactions on Computer-Human Interaction, 22 (2).

CONFERENCE PAPERS

- 2017 L@S A Head, **EL Glassman**, G Soares, R Suzuki, L Figueredo, L D’Antoni and B Hartmann.
“Writing Reusable Code Feedback at Scale with Mixed-Initiative Program Synthesis.”
ACM Learning at Scale.
- 2016 ASIST **EL Glassman**, DM Russell.
“DocMatrix: Self-Teaching from Multiple Sources.”
ASIS&T Annual Meeting.
- 2016 CSCW **EL Glassman**, A Lin, CJ Cai, RC Miller.
“Learnersourcing Personalized Hints.”
ACM Computer-Supported Cooperative Work and Social Computing.
- 2015 UIST **EL Glassman**, L Fischer, J Scott, RC Miller.
“Foobaz: Variable Name Feedback for Student Code at Scale.”
ACM Symposium on User Interface Software & Technology.
- 2015 CHI **EL Glassman**, J Kim, A Monroy-Hernández, MR Morris.
“Mudslide: A Spatially Anchored Census of Student Confusion for Online Lecture Videos.”
ACM Conference on Human Factors in Computing Systems.
- 2015 CHI J Kim, **EL Glassman**, A Monroy-Hernández, MR Morris.
“RIMES: Embedding Interactive Multimedia Exercises in Lecture Videos.”
ACM Conference on Human Factors in Computing Systems.
- 2013 ICER **EL Glassman**, N Gulley, RC Miller.
“Toward Facilitating Assistance to Students Attempting Engineering Design Problems.”
ACM International Computing Education Research.

TECHNOLOGY REPORTS

- 2015 MIT B Kim, **EL Glassman**, B Johnson, J Shah.
“iBCM: Interactive Bayesian Case Model Empowering Humans via Intuitive Interaction.”
MIT CSAIL TR-2015-010.

BOOK CHAPTERS

- 2016 US Army JJ Williams, J Kim, **EL Glassman**, A Rafferty, W Lasecki.
“Making Static Lessons Adaptive through Crowdsourcing & Machine Learning.”
Volume 4 of Design Recommendations for Intelligent Tutoring Systems.
US Army Research Laboratory.

THESES

- 2016 MIT **EL Glassman**.
“Clustering and Visualizing Solution Variation in Massive Programming Classes.”
MIT EECS Ph.D. Thesis.

POSTERS, DEMOS, AND WORKSHOP PRESENTATIONS

- 2017 CHI R Suzuki, G Soares, **EL Glassman**, A Head, L D’Antoni, B Hartmann. “Exploring the Design Space of Automatically Synthesized Hints for Introductory Programming Assignments.” *ACM CHI Conference on Human Factors in Computing Systems*.
- 2017 L@S A Ju, **EL Glassman**, A Fox. “Teamscope: Scalable Team Evaluation via Automated Metric Mining for Communication, Organization, Execution, and Evolution.” *ACM Learning at Scale Conference*.
- 2016 ICML **EL Glassman**. “Learning Latent Student Design Decisions in Python Programming Classes.” Workshop on Machine Learning for Digital Education and Assessment Systems, *International Conference on Machine Learning*.
- 2016 MSR **EL Glassman**. “Learning Latent Student Design Decisions in Massive Python Programming Classes.” *New England Machine Learning Day*.
- 2016 RC Tools for Thought, Recurse Center, NYC.
- 2016 CSCW **EL Glassman**, RC Miller. “Leveraging Learners for Teaching Programming and Hardware Design at Scale.” *ACM Computer-Supported Cooperative Work and Social Computing*.
- 2016 CSCW **EL Glassman**, B Kim, J Shah. “Scaling Up Qualitative Data Analysis With Interfaces Powered by Interpretable Machine Learning.” Human Centered Data Science Workshop, *ACM Symposium on User Interface Software & Technology*.
- 2015 UIST **EL Glassman**. “Interacting with massive numbers of student solutions.” Doctoral consortium, *ACM Symposium on User Interface Software & Technology*.
- 2015 MIT **EL Glassman**. Rising Stars Workshop for aspiring CS faculty, MIT.
- 2015 L@S **EL Glassman**, CJ Terman, RC Miller. “Learner-Sourcing in an Engineering Class at Scale.” *ACM Learning at Scale Conference*.
- 2014 UIST **EL Glassman**. “Interacting with massive numbers of student solutions.” *ACM Symposium on User Interface Software & Technology*.
- 2014 L@S **EL Glassman**, R Singh, RC Miller. “Feature engineering for clustering student solutions.” *ACM Learning at Scale Conference*.
- 2013 ICER **EL Glassman**. “Visualizing and classifying multiple solutions to engineering design problems.” Doctoral consortium, *ACM International Computing Education Research*.

Publications in Other Fields

UNDERACTUATED ROBOTICS

Conference publications

- 2012 ICRA **EL Glassman**, AL Desbiens, M Tobenkin, M Cutkosky, R Tedrake. “Region of attraction estimation for a perching aircraft: A Lyapunov method exploiting barrier certificates.” *IEEE International Conference on Robotics and Automation*.
- 2010 ICRA **EL Glassman**, R Tedrake. “A quadratic regulator-based heuristic for rapidly exploring state space.” *IEEE International Conference on Robotics and Automation*.

Posters

- 2009 NIPS **EL Glassman**. Women in Machine Learning Workshop, *Neural Information Processing Systems*.

Theses

- 2010 MIT **EL Glassman**. “A quadratic regulator-based heuristic for rapidly exploring state space.” MIT EECS M.Eng. Thesis.

BIOMEDICAL SIGNAL PROCESSING

Journal articles

- 2005 TBME **EL Glassman**. “A wavelet-like filter based on neuron action potentials for analysis of human scalp

electroencephalographs.” *IEEE Transactions on Biomedical Engineering* 52 (11), 1851-1862.

Conference publications

2006 EMBS **EL Glassman**, JV Gutttag. “Reducing the number of channels for an ambulatory patient-specific EEG-based epileptic seizure detector by applying recursive feature elimination.” *IEEE Engineering in Medicine and Biology Society*.

Seminar Talks

2017 UPenn NSF ExCAPE PI Meeting
2017 MIT Machine Learning Tea, CSAIL
2016 UCB Special Seminar for CS61a Staff, UC Berkeley’s largest CS class
2016 UCB Berkeley Institute of Design
2015 Harvard Cooperation Group, Harvard Berkman Center
2015 Duke Computer Science Department
2015 Stanford Human-Computer Interaction summer lunch talk
2015 Harvard HarvardX
2015 Wellesley Computer Science Department
2014 UW DUB Seminar, HCI & Design
2001 SDRC Special Seminar, Schlumberger-Doll Research Center

Selected Press

2015 MIT *MIT News Homepage Spotlight*, “Reviewing online homework at scale” (research profile).
2015 Reddit *Reddit’s Upvoted podcast* guest.
2014 WIRED *WIRED* opinion piece, “MIT Computer Scientists Demonstrate the Hard Way That Gender Still Matters” co-author.
2004 NYT *New York Times*, “Not Too Young for a Patent” (personal profile).
2003 CNN *CNN* Lou Dobbs Tonight, “America’s Bright Future” (personal profile).
2003 CNN *CNN* American Morning guest.
2003 Science *Science* “Rising Stars” Vol. 300. Issue 5624, pp. 1368 (personal profile).

Leadership

WORKSHOPS AND READING GROUPS

2017 Co-organizer, Program Synthesis Hackathon, UC Berkeley
2012 Co-organizer, edTech reading group, MIT

RESEARCH MENTORING

| | | |
|---------|----------------|--------------------------------|
| 2017 | Orkun Duman | UC Berkeley EECS undergraduate |
| 2017 | Emily Pedersen | UC Berkeley EECS undergraduate |
| 2016-17 | Hezheng Yin | UC Berkeley EECS Ph.D. student |
| 2016-17 | Andrew Head | UC Berkeley EECS Ph.D. student |
| 2016-17 | Eric Pai | UC Berkeley EECS undergraduate |
| 2016-17 | Sindy Tan | Harvard EECS undergraduate |
| 2015-16 | Stacey Terman | MIT EECS M.Eng. student |
| 2015 | Aaron Lin | MIT EECS undergraduate |

MIT STUDENT GROUPS

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|-----------|----------------|--|
| 2013-2015 | President | Middle East Education through Technology |
| 2008-2009 | Vice-President | Eta Kappa Nu EECS honor society |

SELECTED OUTREACH

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| 2016 | Panelist, MIT EECS SuperUROP (Undergraduate Research) Seminar |
| 2016 | Virtual guest speaker, Bucknell HCI course |
| 2015 | Invited speaker, GirlTechPower summer camp for girls |
| 2015 | Panelist, Women Techmaker's Summit at Google Cambridge |
| 2014-2015 | Invited speaker, MIT CSAIL Hour of Code event for local schools |
| 2014 | Reddit AMA on gender, CS, and academia with Jean Yang and Neha Nerula |
| 2013 | Mentor, Harvard Women in CS "Women Engineers Code Hackathon" |
| 2013 | Panelist, MIT EECS Teaching Assistant Orientation |
| 2011 | MIT Robot Locomotion Group representative, Cambridge Science Festival and New Hampshire TechFest |
| 2008, 2011 | Invited speaker, MIT Women's Technology Program |
| 2008 | Invited speaker, MIT CSAIL Campus Preview Weekend |