Elena Leah Glassman

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Current position

Postdoctoral Scholar, Berkeley Institute of Design, UC Berkeley EECS

Areas of specialization

Human-computer interaction • Programming education at scale

Academic positions

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

2016	Consultant	Search, Google
2015	User experience research intern	Search, Google
2014	Design research intern	neXus Research Team, Microsoft Research

Education

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 honors & awards

2016	Audience Choice Award, MIT Can Talk speech competition
2014	MIT Amar Bose Teaching Fellowship, for developing innovative tools for teaching CS at scale
2011-2014	NSF Graduate Research Fellow

2009 Masterworks Oral Thesis Presentation Award, MIT EECS
2008-2011 National Defense Science and Engineering Graduate Fellow
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
2004 IEEE President's Scholarship ($10,000)
2003 Intel Foundation Young Scientist Award ($50,000), given to the top 3 projects at the Intel International Science and Engineering Fair
2003 Best of Category: Computer Science ($5,000), Intel International Science and Engineering Fair

Publications

Journal articles

Learning at scale

2015 **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 (TOCHI)*, 22 (2).

Biomedical signal processing

2005 **EL Glassman**. "A wavelet-like filter based on neuron action potentials for analysis of human scalp electroencephalographs." *IEEE Transactions on Biomedical Engineering (TBME)* 52 (11), 1851-1862.

Conference papers

Learning at scale

2016 A Head, **EL Glassman**, G Soares, R Suzuki, L Figueredo, L D'Antoni and B Hartmann. *(In submission, title and conference redacted.)*

2016 **EL Glassman**, DM Russell. "DocMatrix: Self-Teaching from Multiple Sources." ASIS&T Annual Meeting.

2016 **EL Glassman**, A Lin, CJ Cai, RC Miller. "Learnersourcing Personalized Hints." *ACM Computer-Supported Cooperative Work and Social Computing (CSCW).*

2015 **EL Glassman**, L Fischer, J Scott, RC Miller. "Foobaz: Variable Name Feedback for Student Code at Scale." *ACM Symposium on User Interface Software Technology (UIST).*

2015 **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 (CHI).* **Best of CHI Honorable Mention**.

2015 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 (CHI).*

2013 **EL Glassman**, N Gulley, RC Miller. "Toward Facilitating Assistance to Students Attempting Engineering Design Problems." *ACM International Computing Education Research (ICER).*

Underactuated robotics

2012 **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 (ICRA).*

2010 **EL Glassman**, R Tedrake. "A quadratic regulator-based heuristic for rapidly exploring state space." *IEEE International Conference on Robotics and Automation (ICRA).*

2006 **EL Glassman**, JV Guttag. "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 (EMBS).

Technology Reports

Interpretable Machine Learning

2015 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

Learning at scale

2016 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

Learning at scale

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

Underactuated robotics

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

Talks

Seminars

2016 Computer Science Deptartment, Brown University *(upcoming)*
2016 Berkeley Institute of Design, UC Berkeley
2016 Thesis Defense, MIT CSAIL
2015 Cooperation Group, Harvard Berkman Center
2015 Computer Science Department, Duke University
2015 Human-Computer Interaction, Stanford University
2015 HarvardX, Harvard University
2015 Computer Science Department, Wellesley College
2014 DUB Seminar, HCI & Design, University of Washington
2001 Schlumberger-Doll Research Center

Conference presentations

2016 DocMatrix: Self-Teaching from Multiple Sources.
ASIS&T Annual Meeting, Copenhagen.
2016 Learnersourcing Personalized Hints.
ACM CSCW, San Francisco.
2015 Foobaz: Variable Name Feedback for Student Code at Scale.
ACM UIST, Charlotte NC.
2015 Mudslide: A Spatially Anchored Census of Student Confusion for Online Lecture Videos.
ACM CHI, Seoul.

2015 OverCode: Visualizing variation in student solutions to programming problems at scale.
ACM CHI, Seoul.

2013 Toward Facilitating Assistance to Students Attempting Engineering Design Problems.
ACM ICER, San Diego.

2012 Region of attraction estimation for a perching aircraft: A Lyapunov method exploiting barrier certificates.
IEEE ICRA, St. Paul.

2010 A quadratic regulator-based heuristic for rapidly exploring state space.
IEEE ICRA, Anchorage.

2006 Reducing the number of channels for an ambulatory patient-specific EEG-based epileptic seizure detector by applying recursive feature elimination.
IEEE EMBS, New York City.

Workshop presentations

2016 "Learning Latent Student Design Decisions in Python Programming Classes." Workshop on Machine Learning for Digital Education and Assessment Systems, *International Conference on Machine Learning (ICML)*.

2015 Rising Stars Workshop for aspiring CS faculty, MIT.

2015 "Interacting with massive numbers of student solutions." Doctoral consortium, *ACM Symposium on User Interface Software & Technology (UIST)*.

2013 "Visualizing and classifying multiple solutions to engineering design problems." Doctoral consortium, *ACM International Computing Education Research (ICER)*.

Poster and demo presentations

2016 **EL Glassman**. "Learning Latent Student Design Decisions in Massive Python Programming Classes." *New England Machine Learning Day*.

2016 **EL Glassman**, RC Miller. "Leveraging Learners for Teaching Programming and Hardware Design at Scale." *ACM Computer-Supported Cooperative Work and Social Computing (CSCW)*.

2015 **EL Glassman**, CJ Terman, RC Miller. "Learner-Sourcing in an Engineering Class at Scale." *ACM Learning at Scale Conference (L@S)*.

2014 **EL Glassman**. "Interacting with massive numbers of student solutions." *ACM Symposium on User Interface Software & Technology (UIST)*.

2014 **EL Glassman**, R Singh, RC Miller. "Feature engineering for clustering student solutions." *ACM Learning at Scale Conference (L@S)*.

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

Selected Press

2015 *MIT News Homepage Spotlight*, "Reviewing online homework at scale" (research profile)

2015 *Reddit's Upvoted podcast* guest

2014 *WIRED* opinion piece, "MIT Computer Scientists Demonstrate the Hard Way That Gender Still Matters" co-author

2004 *New York Times*, "Not Too Young for a Patent" (personal profile)

2003 *CNN* Lou Dobbs Tonight, "America's Bright Future" (personal profile)

2003 *CNN* American Morning guest

2003 *Science* "Rising Stars" Vol. 300. Issue 5624, pp. 1368 (personal profile)

Teaching

2016	Co-lecturer, User Interface Design & Implementation, (~175 students)	MIT EECS
2013	Co-lecturer, introductory python programming	MIT MEET, Jerusalem
2013	Video creator, radio receiver technology	MIT Teaching & Learning Lab
2012-2014	Teaching assistant, Computation Structures	MIT EECS
2011	Teaching assistant, Introduction to EECS 1	MIT EECS
2011	Graduate Student Teaching Certificate	MIT Teaching & Learning Lab
2006-2011	Tutor, Signals, Systems, & Probabilistic Systems Analysis	MIT EECS Honor Society

Leadership

Student groups

2013-2015 President, Middle East Education through Technology (MIT student group)
2008-2009 Vice-President, MIT EECS honor society (Eta Kappa Nu)

Research mentoring

2016 Eric Pai, UC Berkeley EECS undergraduate
2016 Michelle Tian, UC Berkeley EECS undergraduate
2016 Daniel Nguyen, UC Berkeley EECS undergraduate
2016 Andrew Head, UC Berkeley EECS Ph.D. student
2016 Sindy Tan, Harvard EECS undergraduate
2015-2016 Stacey Terman, MIT EECS M.Eng. student
2015 Aaron Lin, MIT EECS undergraduate

Outreach

2016 Panelist, MIT EECS SuperUROP (Undergraduate Research) Seminar
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
2011 MIT Robot Locomotion Group representative, New Hampshire TechFest
2008, 2011 Invited speaker, MIT Women's Technology Program
2008 Invited speaker, MIT CSAIL Campus Preview Weekend

Service

Department

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

Profession

2017	ACM UIST Registration Chair
2015-present	ACM CHI, UIST, CSCW reviewer
2015	ACM CHI session chair, social media & citizen science
2015	ACM CHI Works-in-Progress Program Committee member