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

2016	Research scientist (contractor)	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 fellowships and scholarships

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)

Selected honors & awards

2016	Audience Choice Award, MIT Can Talk speech competition
2015	Accepted into 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)
2003	Intel Foundation Young Scientist Award ($50,000) *Awarded to the top 3 individual projects at Intel International Science & Engineering Fair*

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

2011	Graduate Student Teaching Certificate	MIT Teaching & Learning Lab

Human-Computer Interaction Publications

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

Poster and demo presentations

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

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

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.*

Prior Publications

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 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.

Talks

Seminars

2016 UCB Special Seminar for CS61a Staff, UC Berkeley's largest CS class
2016 UCB Berkeley Institute of Design, UC Berkeley
2016 MIT Thesis Defense, MIT CSAIL
2015 Harvard Cooperation Group, Harvard Berkman Center
2015 Duke Computer Science Department, Duke University
2015 Stanford Human-Computer Interaction summer lunch talk, Stanford University
2015 Harvard HarvardX, Harvard University
2015 Wellesley Computer Science Department, Wellesley College
2014 UW DUB Seminar, HCI *&* Design, University of Washington
2001 SDRC Special Seminar, Schlumberger-Doll Research Center

Conference presentations

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

Seoul.

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

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

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

2006 EMBS 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.

Workshops

2016 ICML "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 RC Tools for Thought, Recurse Center, NYC.

2015 MIT Rising Stars Workshop for aspiring CS faculty, MIT.

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

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

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)

Leadership

Workshops

2017 Co-Organizer. "Program Synthesis Hackathon" with the Microsoft Program Synthesis using Examples SDK (PROSE), UC Berkeley.

Research mentoring

2016	Hezheng Yin	UC Berkeley EECS Ph.D. student
2016	Andrew Head	UC Berkeley EECS Ph.D. student
2016	Eric Pai	UC Berkeley EECS undergraduate
2016	Michelle Tian	UC Berkeley EECS undergraduate
2016	Daniel Nguyen	UC Berkeley EECS undergraduate
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

MIT student groups

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

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