Elena Leah Glassman

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Areas of specialization

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

Academic positions

2017-present	Moore/Sloan Data Science Fellow	Berkeley Institute for Data Science, UC Berkeley
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

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

Education

2016 MIT	Ph.D., Electrical Engineering & Computer Science	Cambridge, MA
2010 MIT	M.Eng., Electrical Engineering & Computer Science	Cambridge, MA
2008 MIT	B.S., Electrical Science & Engineering	Cambridge, MA

Selected fellowships and scholarships

2017	Moore/Sloan Data Science Fellowship at the Berkeley Institute for Data Science (BIDS)
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	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	Vice President and member, Eta Kappa Nu, EECS Honor Society
2004	Valedictorian & commencement speaker, Central Bucks High School West
2004	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*

Invited Talks

2017	ACM KDD Workshop on Advancing Education with Data	Halifax, Nova Scotia
2017	Stanford HCI summer seminar	Stanford, CA
2017	MIT CSAIL Machine Learning Tea	Cambridge, MA
2016	Special Seminar for CS61a Staff, UC Berkeley's largest CS class	Berkeley, CA
2016	Berkeley Institute of Design	Berkeley, CA
2015	Harvard Berkman Center Cooperation Group	Cambridge, MA
2015	Duke Computer Science Department seminar	Durham, NC
2015	Stanford HCI summer seminar	Stanford, CA
2015	HarvardX	Cambridge, MA
2015	Wellesley Computer Science Department seminar	Wellesley, MA
2014	DUB Seminar on HCI & Design, University of Washington	Seattle, WA
2001 SDRC	Special Seminar, Schlumberger-Doll Research Center	Ridgefield, CT

Invitation-only workshops, seminars, and conferences

DARPA

2017	Speaker, Diverse Ways of Inferring Missions	Washington, D.C.
2017	Augmented Developers: Tools for Hybrid Human-Machine Software Eng.	Washington, D.C.

Schloss Dagstuhl – Leibniz Center for Informatics

2017	Speaker, "Approaches and Applications of Inductive Programming"	Wadern, Germany

NSF-funded groups

2017	Speaker, NSF ExCAPE PI Meeting	Philadelphia, PA
2017	"Community-building for data-intensive computer & computing science education infrastructure research" (SPLICE)	Pittsburgh, PA

Independent research organizations

2017	Y Conf hosted by Y Combinator Research	San Francisco
2016	Speaker, Tools for Thought, Recurse Center	NYC

Doctoral Consortiums

2015	ACM UIST, "Interacting with massive numbers of student solutions"	Honolulu, HI
2013	ACM ICER, "Visualizing & classifying multiple solutions to engineering design problems"	San Diego, CA

Service

Program committees

2017	ACM CHI, Engineering Interactive Systems and Technologies subcommittee
2017	ACM Learning at Scale (L@S)
2017	SPLASH Workshop on Evaluation and Usability of Programming Languages and Tools (PLATEAU)
2015	ACM CHI Works-in-Progress

Organizing chairs

2017	ACM UIST Registration Chair
2017	ACM UIST session chair, "Code/Education Session"
2015, 2017	ACM CHI session chair, "Social media & citizen science" and "All About Data"

Reviewing

2017	ACM Transactions on Computer-Human Interaction (TOCHI)
2015-present	ACM CHI, UIST, and CSCW

Department and institute committees

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

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).

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

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 VL/HCC Ryo Suzuki, Gustavo Soares, Andrew Head, **Elena Glassman**, Ruan Reis, Melina Mongiovi, Loris D'Antoni, and Bjoern Hartmann.
"TraceDiff: Debugging Unexpected Code Behavior Using Trace Divergences."
IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)

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 and demos

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 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 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.*

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 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.*

Leadership

Hackathons, Student Groups, and Reading Groups

2017	Co-organizer, Program Synthesis Hackathon	UC Berkeley
2013-2015	President, Middle East Education through Technology	MIT
2012	Co-organizer, edTech reading group	MIT

Research mentoring

2017	Kunal Chaudhary, EECS undergraduate	UC Berkeley
2017	Julie Deng, EECS & Cognitive Science undergraduate	UC Berkeley
2017	Orkun Duman, EECS undergraduate	UC Berkeley
2016-17	Hezheng Yin, EECS Ph.D. student	UC Berkeley
2016-17	Andrew Head, EECS Ph.D. student	UC Berkeley
2016-17	Eric Pai, EECS undergraduate and Master's student	UC Berkeley
	Project supervisor for OverCode deployment and Master's thesis	
2016-17	Sindy Tan, EECS undergraduate	Harvard
	Co-advised senior student research experience	
2015-16	Stacey Terman, EECS M.Eng. student	MIT
	Supervised Master's thesis	
2015	Aaron Lin, EECS undergraduate	MIT

Selected Outreach

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