Elena Leah Glassman

Assistant Professor of Computer Science at Harvard University Stanley A. Marks & William H. Marks Professor at the Radcliffe Institute for Advanced Study

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Areas of specialization

 $Human-Computer\ Interaction \bullet Programming\ Systems \bullet Data\ Science \bullet Human\ \mathring{\sigma}\ machine\ teaching$

Education

2016-2018	EECS Postdoctoral Scholar Funded by NSF Expeditions in Con and the Berkeley Institute of Data Supervised by Björn Hartmann, As	•
2012-2016	Graduate student PhD Thesis: <i>Clustering and Visuali</i> . Advised by Robert Miller, Distingu	User Interface Design Group, EECS Department, CSAIL, MIT zing Solution Variation in Massive Programming Classes ished Professor of CS
2008-2011	Graduate student M.Eng. Thesis: <i>A quadratic regulat</i> Advised by Russ Tedrake, Professo	Robot Locomotion Group, EECS Department, CSAIL, MIT or-based heuristic for rapidly exploring state space r of EECS
2010-2011 2006-2008 2004-2006 2003-2004	Visiting researcher Undergraduate researcher Undergraduate researcher Invited high school student research	omimetics & Dexterous Manipulation Lab, Stanford University Robot Locomotion Group, CSAIL, MIT Networks & Mobile Systems, CSAIL, MIT cher Pyschology Dept's EEG Lab, Princeton University

Research Internships

2015	User experience research intern	Search, Google
	Advised by Dan Russell, Senior Research Scientist	
2014	Design research intern	Microsoft Research
	Advised by M.R. Morris, Principal Researcher, and A. Monroy-Hernández	, Researcher

Selected fellowships and scholarships

2018-present	Radcliffe Assistant Professorship at the Radcliffe Institute for Advanced Study
2017-2018	Moore/Sloan Data Science Fellowship at the Berkeley Institute for Data Science (BIDS)
2014-2015	MIT Amar Bose Teaching Fellowship, 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)
	Awarded to the top 3 individual projects at the Intel International Science & Engineering Fair

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Publications

JOURNAL ARTICLES AND REFEREED CONFERENCE PAPERS

Top-tier ACM conferences in human-computer interaction, i.e., CHI, CSCW, & UIST, are highly selective venues for archival papers only, comparable to many IEEE journals in their selectivity, visibility, and impact. * indicates equal contribution.

CACM S Chasins, **EL Glassman**, J Sunshine.

PL and HCI: Better Together Communications of the ACM

Accepted, to be scheduled for publication

2021 CHI Best of CHI Honorable Mention (top 5%)

A Ross, N Chen, E Zhao Hang, EL Glassman, F Doshi-Velez

Evaluating the Interpretability of Generative Models by Interactive Reconstruction

ACM Conference on Human Factors in Computing Systems

23-25% acceptance rate

2021 CHI T Zhang, Z Chen, Y Zhu, P Vaithilingam, X Wang, EL Glassman

Interpretable Program Synthesis

ACM Conference on Human Factors in Computing Systems

23-25% acceptance rate

2021 CHI Best of CHI Honorable Mention (top 5%)

L Yan, EL Glassman, T Zhang

Visualizing Examples of Deep Neural Networks at Scale ACM Conference on Human Factors in Computing Systems

23-25% acceptance rate

2020 FSE C Barnaby, K Sen, T Zhang, **EL Glassman**, and S Chandra

Exempla Gratis (E.G.): Code Examples for Free

Industry Track of ACM Joint European Software Engineering Conference & Symposium on the Foun-

dations of Software Engineering

2020 UIST T Zhang, L Lowmanstone, X Wang, EL Glassman

Interactive Program Synthesis by Augmented Examples ACM Symposium on User Interface Software & Technology

2020 CHI T Zhang, B Hartmann, M Kim, **EL Glassman**

Enabling Data-Driven API Design with Community Usage Data: A Need-Finding Study

ACM Conference on Human Factors in Computing Systems

2020 IUI Best Paper Award

Z Bucinca*, P Lin*, K Gajos, EL Glassman

Proxy Tasks and Subjective Measures Can Be Misleading in Evaluating XAI Systems

ACM Intelligent User Interfaces

2019 VL/HCC J Cambronero, J Shen, J Cito, EL Glassman, M Rinard

Characterizing developer use of automatically generated patches

IEEE Symposium on Visual Languages and Human-Centric Computing

31-33% acceptance rate

2018 CHI EL Glassman*, T Zhang*, B Hartmann, and M Kim

Visualizing API Usage Examples at Scale

ACM Conference on Human Factors in Computing Systems

25.8% acceptance rate

2018 CHI Best of CHI Honorable Mention (top 5%)

A Head, **EL Glassman**, B Hartmann, and M Hearst Interactive Extraction of Examples from Existing Code ACM Conference on Human Factors in Computing Systems 25.8% acceptance rate

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 13% acceptance rate

2017 VL/HCC R Suzuki, G Soares, A Head, EL Glassman, R Reis, M Mongiovi, L D'Antoni, and B Hartmann

TraceDiff: Debugging Unexpected Code Behavior Using Trace Divergences

IEEE Symposium on Visual Languages and Human-Centric Computing

29% acceptance rate

2016 CSCW EL Glassman, A Lin, C Cai, R Miller

Learnersourcing Personalized Hints

ACM Computer-Supported Cooperative Work and Social Computing

25% acceptance rate

2016 ASIST EL Glassman, D Russell

DocMatrix: Self-Teaching from Multiple Sources

ASIS&T Annual Meeting 40% acceptance rate

2015 UIST EL Glassman, L Fischer, J Scott, R Miller

Foobaz: Variable Name Feedback for Student Code at Scale ACM Symposium on User Interface Software & Technology

23.6% acceptance rate

2015 CHI Best of CHI Honorable Mention (top 5%)

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

23% acceptance rate

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

23% acceptance rate

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), April 2015.

2013 ICER EL Glassman, N Gulley, RC Miller

Toward Facilitating Assistance to Students Attempting Engineering Design Problems

ACM International Computing Education Research

33% acceptance rate

Region of attraction estimation for a perching aircraft: A Lyapunov method exploiting barrier cer-

tificates

IEEE International Conference on Robotics and Automation

40% acceptance rate

2010 ICRA EL Glassman and R Tedrake

A quadratic regulator-based heuristic for rapidly exploring state space

IEEE International Conference on Robotics and Automation

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, Nov. 2005.

MIT TECHNOLOGY REPORTS

2015 CSAIL B Kim, EL Glassman, B Johnson, J Shah

iBCM: Interactive Bayesian Case Model Empowering Humans via Intuitive Interaction

MIT CSAIL TR-2015-010, April 2015.

BOOK CHAPTERS

2016 JJ Williams, J Kim, EL Glassman, A Rafferty, W Lasecki

"Making Static Lessons Adaptive through Crowdsourcing & Machine Learning" Design Recommendations for Intelligent Tutoring Systems: Domain Modeling Vol. 4, US Army Research Laboratory, July 2016.

POSTERS, DEMOS, AND WORKSHOP PAPERS

2020 C+J EL Glassman, Janet Sung, Katherine Qian, Yuri Vishnevsky, Amy Zhang

"Triangulating the News: Visualizing Commonality and Variation Across Many News Stories on the Same Event"

Computation + Journalism Symposium

2019 PLATEAURebecca Hao and EL Glassman

"Approaching polyglot programming: what can we learn from bilingualism studies?" Workshop on Evaluation and Usability of Programming Languages and Tools Co-located with ACM User Interface Software and Technology

2017 KDD S Tan, F Doshi-Velez, J Quiroz, **EL Glassman**

"Clustering LaTeX Solutions to Machine Learning Assignments for Rapid Assessment"

Machine Learning for Education Workshop

ACM Conference on Knowledge Discourse and Data Mining

ACM Conference on Knowledge Discovery and Data Mining

2017 CHI R Suzuki, G Soares, **EL Glassman**, A Head, L D'Antoni, and B Hartmann

"Exploring the Design Space of Automatically Synthesized Hints for Introductory Programming Assignments"

ACM 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 NEML EL Glassman

"Learning Latent Student Design Decisions in Massive Python Programming Classes"

New England Machine Learning Day

2016 CSCW EL Glassman and R 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 Computer-Supported Cooperative Work and Social Computing

2015 L@S EL Glassman, C Terman, R 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, R Miller

"Feature Engineering for Clustering Student Solutions"

ACM Learning at Scale Conference

2009 NIPS EL Glassman

"A quadratic regulator-based heuristic for rapidly exploring state space"

Women in Machine Learning Workshop (WIML)

Neural Information Processing Systems

2006 EMBS EL Glassman and J 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

Fundraising

NSF

2021-25 Co-PI, Collaborative Research: FMitF: Track I: Usable Synthesis-based End-User Programming

with Rich Interaction Modalities

2021-24 Co-PI, FAI: Foundations of Fair AI in Medicine: Ensuring the Fair Use of Patient Attributes

2020-24 Lead PI, Collaborative Research: CHS: Medium: Code demography: Addressing information needs

at scale for programming interface users and designers

2020-23 Co-PI, Robust Intelligence (RI): Small: Human Validation in Batch Reinforcement Learning

2019-22 PI, WORKSHOP: Student Innovation Challenge at User Interface Software and Technology 2019

Industry

2019 Facebook

University

2021 Harvard Data Science Initiative Trust in Science Award

Service

	Founding Co-Organizer
2020 2020 2017 2012	PL+HCI Summer School CambridgeCHI, a regional virtual symposium of accepted CHI talks Program Synthesis Hackathon at UC Berkeley MIT edTech reading group
	External Advisory Boards
2021	Semantic Scholar, Allen Institute for Artificial Intelligence
	Conference program committees
2022 2021 2020, 2021 2019, 2021 2017, '19-'21 2017-2019 2015	ACM CHI Computational Interactions subcommittee ACM DIS ACM CSCW ACM UIST ACM CHI Engineering Interactive Systems and Technologies subcommittee ACM Learning at Scale (L@S) ACM CHI Works-in-Progress subcommittee
	Workshop program committees
2020 2019, 2020 2019-21 2018, 2019 2017, 2018	Human Aspects of Types and Reasoning Assistants Workshop on Knowledge Representation & Reasoning Meets Machine Learning Workshop on Intelligent Textbooks (iTextbooks) LIVE Programming Workshop, for improving the usability of programming Workshop on Evaluation and Usability of Programming Languages and Tools SPLASH
	Organizing Committees
2020 2019, 2021 2017-2018	ACM UIST Publicity Co-Chair ACM UIST Doctoral Consortium Co-Chair ACM UIST Registration Chair
2017, 2019 2015, 2017	Session chairing ACM UIST "Code/Education Session" and "Software and Hardware Development" ACM CHI "Social Media & Citizen Science" and "All About Data"
2020 2019, 2020 2017	Workshops LIVE Steering Committee, for improving the usability of programming SPLASH Workshop on Evaluation and Usability of Programming Languages and Tools UIST, SPLASH Text Across Domains (TextXD) Workshop Berkeley Institute of Data Science
	Institute and University committees
2022-2023 2020 2005	(Deferred) Institute of Applied Computational Science (IACS) program committee Enrollment Working Group member, planning for Harvard's reopening Council on Educational Technology member MIT

DEPARTMENT AND SCHOOL COMMITTEES

2020-2021	Committee on Higher Degrees (CHD)	CS, Harvard
2018-2019	PhD Diversity Admissions Committee member	SEAS, Harvard
2018-2019	Junior Faculty Search Committee member	CS, Harvard
2018-2019	Graduate Admissions Committee member	SEAS, Harvard
2018	Joint Degree Programs Committee member	CS, Harvard
2006-2008	Education Committee member	EECS, MIT

EXTERNAL REVIEWING

Grants

NSF 2019

Journals

2018

Empirical Software Engineering (EMSE)
ACM Transactions on Computer-Human Interaction (TOCHI) 2017

Mentoring and Advising

Postdoctoral	Scholars

2019-2021	Postdoctoral Scholars Tianyi Zhang	Harvard CS
2020-present 2020-present	Doctoral Students Tyler Holloway Priyan Vaithilingam	Harvard CS Harvard CS
2021 2021 2021 2020 2020	PhD Thesis Committees Oscar Alvarado Felix Gonda Andrew Ross Minsuk Chang Hendrik Heuer	KU Leuven CS Harvard CS Harvard CS KAIST CS University of Bremen CS
2021 2021 2020 2019 2019 2019 2019	Quals Committees Edwin Chng Jamelle Watson-Daniels Andrew Ross Sophie Hilgard Hsiang Hsu Juntao Wang Eric Lu	HGSE Harvard CS
2021 2019	Masters Theses Litao Yan Janet Sung	Computational Science & Engineering Design Engineering
2021 2021 2021 2021 2021 2020	Senior Theses Wassim Marrakchi Cole Bateman Ahan Malhotra George Moe Katherine Qian	Harvard CS Harvard CS Harvard CS Harvard CS Harvard CS

2020	Jake Cui	Harvard CS ♂ Linguistics
2020	Rebecca Hao	Harvard CS & Linguistics
2019	Sam Oh	Harvard CS & Philosophy
	Summer Researchers	
2019, 2020	Cole Bateman	Harvard CS
2019	Phoebe Lin	Harvard Graduate School of Design
2019	Jamie Lee	High School Student
	Academic Advising	
2019-2021	First year advisor to 3 to 4 freshman women with interest in	CS
	Extracurricular Enrichment	
2013	Mentor, Harvard Women in CS "Women Engineers Code Had	ckathon"

Teaching

Experience

2021	Lecturer, CS179 Design of Useful & Usable Interactive Systems (\approx 115 studes	nts) Harvard CS
2020	Lecturer, CS279r Research Topics in HCI: Human-AI Interaction ($pprox$ 35 stude	nts) Harvard CS
2020	Lecturer, CS179 Design of Useful & Usable Interactive Systems (\approx 75 studen	ts) Harvard CS
2019	Co-lecturer, CS279r PL/HCI Graduate Seminar (≈ 30 students)	Harvard CS
2019	Co-lecturer, CS179 Design of Useful & Usable Interactive Systems (\approx 75 stud	lents) Harvard CS
2016	Co-lecturer, 6.831 User Interface Design & Implementation (≈ 175 students)	MIT EECS
2013	Instructor, introductory Python programming	MIT MEET, Jerusalem
2013	Video script writer $\dot{\sigma}$ presenter, radio receiver technology MIT Teach	ching & Learning Lab
2012-2014	Teaching assistant, 6.004 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

TEACHING COURSES AND CERTIFICATIONS

2020	Course Planning Workshop	Harvard OUE and Bok Center
2011	Graduate Student Teaching Certificate	MIT Teaching & Learning Lab

Invited Keynote Talks

2020 ACM SIGPLAN conference on Systems, Programming, Languages, and Applications: Software for Humanity

Invited Panelist

2021	Doctoral Consortium panelist/mentor	ACM UIST
2018, 2021	Rising Stars workshop for aspiring female EECS professors	MIT EECS
2021	Panel on the Future of the Unix shell	HotOS
2021	Tech for Social Good Mid-Term Presentations	Harvard
2020	Academic Job Search Seminar	MIT EECS
2020	Path to the Professorship	MIT
2020	Celebrating IUI's 25th anniversary, canceled due to COVID-19	ACM IUI
2019	MIT GW6 (Graduate Women in EECS) Research Summit conference	MIT EECS

2016	SuperUROP (Undergraduate Research) Seminar	MIT EECS
2015	Women Techmaker's Summit	Google Cambridge

Invited Seminar Talks

2021	Radcliffe Dean's Advisory Board	Harvard
2021	IrisX	Cairo CHI
2021	Advanced Leadership Initiative Technology Innovation Deep Dive	Harvard
2021	BostonCHI	Cambridge, MA
2020	Workshop on Computer-Assisted Programming	NeurIPS
2020	PurPL Seminar Series	Purdue
2019	Josh Tenenbaum's research group meeting	MIT
2019	Sumit Gulwani's research group meeting	MSR
2019	Real Colegio Complutense lecture	Harvard
2018	Computer Science Department seminar	UBC
2018	iSchool seminar	UWashington
2018	Computer Science & Engineering Department seminar	UMich
2018	Computer Science & Engineering Department seminar	UCSD
2018	Computer Science Department seminar	UIUC
2018	Computer Science Department seminar	UMaryland
2018	Human-Computer Interaction Institute	CMU
2018	Electrical Engineering & Computer Science Department seminar	UC Berkeley
2018	Computer Science Department seminar	Stanford
2018	Computer Science Department seminar	ETH Zürich
2018	Computer Science Department seminar	Brown
2018	Computing and Information Science Department seminar	Cornell
2018	School of Computer and Communication Sciences seminar	EPFL
2018	Computer Science Department seminar	Harvard
2018	Computer Science Department seminar	Princeton
2018	Computer Science Department seminar	UW-Madison
2018	Computer Science Department seminar	UChicago
2018	Computer Science Department seminar	UToronto
2018	Dan Schwartz and Carl Wieman's lab Stanford Graduate	School of Education
2017	NSF Expeditions in Computer Augmented Program Engineering (ExCAPE) F	PI Meeting UPenn
2017	Stanford HCI summer seminar	Stanford
2017	MIT CSAIL Machine Learning Tea	MIT CSAIL
2016	Special Seminar for CS61a Staff, UC Berkeley's largest CS class	UC Berkeley
2016	Berkeley Institute of Design	UC Berkeley
2015	Harvard Berkman Center Cooperation Group	Harvard
2015	Computer Science Department seminar	Duke
2015	HCI summer seminar	Stanford
2015	Lunch seminar	HarvardX
2015	Computer Science Department seminar	Wellesley
2014	DUB Seminar on HCI & Design,	UWashington
2001		Doll Research Center

Workshops Presentations

ACADEMIC CONFERENCES

2020	SE ₄ ML - Software Engineering for AI-ML-based Systems	Schloss Dagstuhl
2017, 2019	Approaches and Applications of Inductive Programming	Schloss Dagstuhl
2017	Workshop on Advancing Education with Data	ACM KDD
2017	Diverse Ways of Inferring Missions	DARPA
2017	Augmented Developers: Tools for Hybrid Human-Machine Software Eng.	DARPA

Doctoral Consortiums

2015	Interacting with massive numbers of student solutions	ACM UIST
2013	Visualizing $\dot{\sigma}$ classifying multiple solutions to engineering design problems	ACM ICER

Selected honors $\dot{\sigma}$ awards

2016	Audience Choice Award, MIT Can Talk speech competition
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

Selected Outreach

2020	Panelist, Branson High School	
2020	Keynote speaker, Harvard WECode's inaugural 2020 High School Conference	
2020	Creator, Podcast "Design of Useful and Usable Interactive Systems"	
2018	Invited lecturer, Google software engineering course of underrepresented college students	
2016	Invited speaker, Bucknell HCI course	
2015	Invited speaker, GirlTechPower summer camp for girls	
2014, 2015	Invited speaker, MIT CSAIL Hour of Code event for local schools	
2008, 2011	Invited speaker, MIT Women's Technology Program	
2008	Invited speaker, MIT CSAIL Campus Preview Weekend	

Selected press

2020 2020	Scenes from the socially distant, teaching profile Bringing additional expertise to class via remote instruction, teaching	The Harvard Gazette ing profile Harvard SEAS
2015	Reviewing online homework at scale, research profile	MIT News Homepage Spotlight
2015	It takes a network, quoted	MIT News
2015	Guest on Upvoted podcast	Reddit
2004	Not Too Young for a Patent, profile	New York Times
2003	America's Bright Future on Lou Dobbs Tonight, profile	CNN
2003	Guest on American Morning	CNN
2003	Rising Stars Vol. 300. Issue 5624, p. 1368, profile	Science

Athletics Program Involvement

2020-present Faculty sponsor of the Harvard Women's Wrestling Club Harvard 2019-present Active participant in the Harvard Running community, e.g., Harvard on the Move Harvard US Olympic Wrestling Training Camp participant Colorado Springs, CO 2010, 2012 2009-2012 Competitor, regional & national women's wrestling tournaments US & Canada 2010 All-American Wrestler, National Collegiate Wrestling Association Hampton, VA Team Member, NCAA Div. III Varsity Wrestling Team MIT 2008

References

Robert Miller

Distinguished Professor of Computer Science *MIT CSAIL*

Björn Hartmann

Associate Professor of Electrical Engineering & Computer Science
University of California, Berkeley

Dan Russell

Senior Research Scientist *Google*

Scott Klemmer

Professor of Cognitive Science and Computer Science & Engineering University of California, San Diego

Miryung Kim

Professor of Computer Science University of California, Los Angeles