## Himabindu Lakkaraju

Contact Information Science and Engineering Complex

150 Western Ave, Suite 6.220 Boston, MA 02134 E-mail: hlakkaraju@hbs.edu; hlakkaraju@seas.harvard.edu Webpage: http://himalakkaraju.github.io **Research Interests** Trustworthy Machine Learning (Explainability, Fairness, Robustness); Human-Al Interaction; Applications of Al/ML to Decision Making in Healthcare, Law, and Policy. Academic & **Harvard University** 01/2020 - Present **Professional** Assistant Professor with appointments in the Business School and the Department of Computer Science (Affiliate) **Experience** Faculty Affiliate, Harvard Data Science Initiative Fiddler Al 06/2021 - Present AI Research Fellow Simons Institute for the Theory of Computing, UC Berkeley Visiting Scientist, Summer Cluster on Interpretable Machine Learning 06/2022 - 08/2022 Visiting Graduate Student, Summer Cluster on Algorithmic Fairness 07/2018 - 08/2018 **Harvard University** 11/2018 - 12/2019 Postdoctoral Fellow, Business School & Department of Computer Science **Stanford University** 9/2012 - 9/2018 Research Assistant, Department of Computer Science Microsoft Research, Redmond Visiting Researcher 5/2017 - 6/2017 Research Intern 6/2016 - 9/2016 **University of Chicago** 6/2014 - 8/2014 Data Science for Social Good Fellow IBM Research - India, Bangalore 7/2010 - 7/2012 Research Engineer SAP Research, Bangalore 7/2009 - 3/2010 Visiting Researcher Adobe Systems Pvt. Ltd., Bangalore 7/2007 - 7/2008 Software Engineer **Education Stanford University** 9/2012 - 9/2018 Ph.D. in Computer Science Thesis: Human-Centric Machine Learning: Enabling Machine Learning for High-Stakes Decision Making Committee: Jure Leskovec (Advisor), Emma Brunskill, Eric Horvitz, Jon Kleinberg, Percy Liang, Cynthia Rudin **Stanford University** 9/2012 - 9/2015 Master of Science (MS) in Computer Science **Indian Institute of Science (IISc)** 8/2008 - 7/2010 Master of Engineering (MEng) in Computer Science & Automation Selected Honors & Best Paper Award, ICML Workshop on Interpretable ML in Healthcare 2022 **Achievements** Outstanding Paper Honorable Mention, 2022 **NeurIPS Workshop on Trustworthy and Socially Responsible Machine Learning** 

	JP Morgan Faculty Research Award	2022
	Kavli Fellow 2023, Kavli Frontiers of Science at the National Academy of Science	nces 2022
	Selected as one of the members of the <b>National AI Advisory Committee</b> instituted by the US government (could not serve due to citizenship status)	2022
	National Science Foundation (NSF) Amazon Fairness in Al Grant	2021
	Google AI for Social Good Research Award	2021
	Best Paper Runner Up, ICML Workshop on Algorithmic Recourse	2021
	Google Research Award	2020
	Amazon Research Award	2020
	Co-founded <b>Trustworthy ML Initiative</b> with the goal of enabling easy access to resources on trustworthy ML & to build a community of researchers/practitioner.	
	Hoopes Prize for undergraduate thesis mentoring, Harvard University	2020
	Named as one of the 35 Innovators Under 35 by MIT Tech Review	2019
	Named as one of the Innovators to Watch by Vanity Fair	2019
	Selected for the prestigious Cowles Fellowship by Yale University (declined)	2018
	INFORMS Data Mining Best Paper Award	2017
	Microsoft Research Dissertation Grant	2017
	Named as one of the Rising Stars in Computer Science	2016
	Outstanding Reviewer Award International World Wide Web Conference (WWW)	2016
	Google Anita Borg Fellowship in recognition of research and leadership	2015
	<b>Stanford Graduate Fellowship</b> for exceptional academic performance Awarded to top 3% of Stanford Ph.D. students	2013-17
	<b>Eminence and Excellence Award</b> for outstanding contributions to research IBM Research	2012
	<b>Research Division Award</b> recognizing research contributions IBM Research	2012
	Best Paper Award, SIAM International Conference on Data Mining (SDM)	2011
	<b>SPOT Award</b> for outstanding product contributions Adobe Systems Pvt. Ltd.	2009
	All India Rank 32 (99.82%ile) Graduate Aptitude Test in Engineering (GATE) Entrance examination for IISc & IITs in Computer Science & Engineering	2008
	University Rank 10, Bachelor of Engineering, Computer Science Out of 8000 students from 175 colleges	2007
Selected Grants	As Faculty	
& Fellowships	D'3 Institute at Harvard Grant (US\$600,000) – Sole PI  NSF-Amazon Fairness in AI (FAI) grant (US\$375,000) – co-PI  Amazon Faculty Research Award (US\$70,000) – Sole PI  Google AI for Social Good Research Award (US\$10,000) – Sole PI	2022 - 2024 2022 - 2025 2021 - 2024 2021 - 2024 2021 - 2022 2020 - 2024

NSF IIS: Robust Intelligence (RI) Small (US\$450,000) – Harvard PI Bayer Trust in Science Award (US\$100,000) – PI	2020 - 2023 2020 - 2021
As Student	
Microsoft Research Dissertation Grant (US\$20,000)	2017
Stanford Graduate Fellowship (tuition + US\$41,700 p.a.)	2013 - 2017
Google Anita Borg Scholarship (US\$10,000)	2015
Facebook Graduate Fellowship Finalist (US\$500)	2013
Indian Institute of Science Graduate Scholarship	2008 - 2010
(tuition + Rs.96,000 p.a.)	
SAP India Research Grant (Rs.150,000)	2009 - 2010

#### **Research Articles**

#### **Total Citations: 4778**

(\* below indicates equal contribution)

#### **Book Chapters**

[59] Analyzing Human Decisions and Machine Predictions in Bail Decision Making Jon Kleinberg, Himabindu Lakkaraju, Jure Leskovec, Jens Ludwig, Sendhil Mullainathan (author names are ordered alphabetically)

The Inequality Reader: Contemporary and Foundational Readings in Race, Class, and Gender; Third Edition, 2022.

#### **Articles in Peer-Reviewed Journals**

- [58] Evaluating Explainability for Graph Neural Networks Chirag Agarwal, Owen Queen, Himabindu Lakkaraju, Marinka Zitnik Nature Scientific Data - 2023.
- [57] Human Decisions and Machine Predictions
  Jon Kleinberg, Himabindu Lakkaraju, Jure Leskovec, Jens Ludwig, Sendhil Mullainathan
  QJE Quarterly Journal of Economics, 2018.
  (author names are ordered alphabetically)

  Featured in MIT Technology Poview, Harvard Rusiness Poview, The New York Times
  - Featured in MIT Technology Review, Harvard Business Review, The New York Times, and as Research Spotlight on National Bureau of Economics front page
- [56] Mining Digital Footprints to Extract Patterns and Predict Real-Life Outcomes Michal Kosinski, Yilun Wang, Himabindu Lakkaraju, Jure Leskovec *Psychological Methods* 2016.

#### **Articles in Peer-Reviewed Conference Proceedings**

- [55] Which Explanation Should I Choose? A Function Approximation Perspective to Characterizing Post hoc Explanations
   Tessa Han, Suraj Srinivas, Himabindu Lakkaraju
   NeurIPS Advances in Neural Information Processing Systems (NeurIPS), 2022.
   Best Paper Award, ICML Workshop on Interpretable ML in Healthcare, 2022.
- [54] Flatten the Curve: Efficiently Training Low-Curvature Neural Networks Suraj Srinivas, Kyle Matoba, Himabindu Lakkaraju, Francois Fleuret NeurIPS Advances in Neural Information Processing Systems (NeurIPS), 2022.
- [53] OpenXAI: Towards a Transparent Evaluation of Model Explanations Chirag Agarwal, Satyapriya Krishna, Eshika Saxena, Martin Pawelczyk, Nari Johnson, Isha Puri, Marinka Zitnik, Himabindu Lakkaraju NeurIPS - Advances in Neural Information Processing Systems (NeurIPS), 2022.
- [52] Data Poisoning Attacks on Off-Policy Evaluation Methods Elita Lobo, Harvineet Singh, Marek Petrik, Cynthia Rudin, Himabindu Lakkaraju UAI - Conference on Uncertainty in Artificial Intelligence, 2022. Oral Presentation (Top 5%)

- [51] Exploring Counterfactual Explanations Through the Lens of Adversarial Examples: A Theoretical and Empirical Analysis
  - Martin Pawelczyk, Chirag Agarwal, Shalmali Joshi, Sohini Upadhyay, Himabindu Lakkaraju
  - AISTATS International Conference on Artificial Intelligence and Statistics, 2022.
- [50] Probing GNN Explainers: A Rigorous Theoretical and Empirical Analysis of GNN **Explanation Methods** 
  - Chirag Agarwal, Marinka Zitnik\*, Himabindu Lakkaraiu\*
  - AISTATS International Conference on Artificial Intelligence and Statistics, 2022.
- [49] Fairness via Explanation Quality: Evaluating Disparities in the Quality of Post hoc **Explanations** 
  - Jessica Dai, Sohini Upadhyay, Ulrich Aivodji, Stephen Bach, Himabindu Lakkaraju AIES - AAAI/ACM Conference on AI, Ethics, and Society, 2022.
- [48] Towards Robust Off-Policy Evaluation via Human Inputs Harvineet Singh, Shalmali Joshi, Finale Doshi-Velez, Himabindu Lakkaraju AIES - AAAI/ACM Conference on AI, Ethics, and Society, 2022.
- [47] A Human-Centric Perspective on Model Monitoring Murtuza N Shergadwala, Himabindu Lakkaraju, Krishnaram Kenthapadi HCOMP - AAAI Conference on Human Computation and Crowdsourcing, 2022.
- [46] Towards Robust and Reliable Algorithmic Recourse Sohini Upadhyay\*, Shalmali Joshi\*, Himabindu Lakkaraju NeurIPS - Advances in Neural Information Processing Systems (NeurIPS), 2021. Best Paper Runner Up, ICML Workshop on Algorithmic Recourse, 2021.
- [45] Reliable Post hoc Explanations: Modeling Uncertainty in Explainability Dylan Slack, Sophie Hilgard, Sameer Singh, Himabindu Lakkaraju NeurIPS - Advances in Neural Information Processing Systems, 2021.
- [44] Counterfactual Explanations Can Be Manipulated Dylan Slack, Sophie Hilgard, Himabindu Lakkaraju, Sameer Singh NeurIPS - Advances in Neural Information Processing Systems, 2021.
- [43] Learning Models for Algorithmic Recourse Alexis Ross, Himabindu Lakkaraju, Osbert Bastani NeurIPS - Advances in Neural Information Processing Systems, 2021.
- [42] Towards the Unification and Robustness of Perturbation and Gradient Based Explanations
  - Sushant Agarwal, Shahin Jabbari, Chirag Agarwal\*, Sohini Upadhyay\*, Steven Wu, Himabindu Lakkaraju
  - ICML International Conference on Machine Learning, 2021.
  - Shorter version presented at Foundations of Responsible Computing (FORC), 2022.
- [41] Towards a Unified Framework for Fair and Stable Graph Representation Learning Chirag Agarwal, Himabindu Lakkaraju\*, Marinka Zitnik\* UAI - Conference on Uncertainty in Artificial Intelligence, 2021. **Oral Presentation (Top 5%)**
- [40] Does Fair Ranking Improve Minority Outcomes? Understanding the Interplay of Human and Algorithmic Biases in Online Hiring Tom Suhr, Sophie Hilgard, Himabindu Lakkaraju AIES - AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society, 2021.
- [39] Fair influence maximization: A welfare optimization approach Aida Rahmattalabi, Shahin Jabbari, Himabindu Lakkaraju, Phebe Vayanos, Eric Rice, Milind Tambe AAAI - AAAI International Conference on Artificial Intelligence, 2021.
- [38] Beyond Individualized Recourse: Interpretable and Interactive Summaries of Actionable Recourses
  - Kaivalya Rawal, Himabindu Lakkaraju
  - NeurIPS Advances in Neural Information Processing Systems, 2020.

[37] Incorporating Interpretable Output Constraints in Bayesian Neural Networks Wanqian Yang, Lars Lorch, Moritz Gaule, Himabindu Lakkaraju, Finale Doshi-Velez NeurIPS - Advances in Neural Information Processing Systems, 2020.
SpotMight Procentation (Top 3%)

**Spotlight Presentation (Top 3%)** 

[36] Robust and Stable Black Box Explanations Himabindu Lakkaraju, Nino Arsov, Osbert Bastani ICML - International Conference on Machine Learning, 2020

[35] How do I fool you?: Manipulating User Trust via Misleading Black Box Explanations Himabindu Lakkaraju, Osbert Bastani

AIES - AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society, 2020.

Oral Presentation (Top 16.6%)

[34] Fooling LIME and SHAP: Adversarial Attacks on Post hoc Explanation Methods Dylan Slack, Sophie Hilgard, Emily Jia, Sameer Singh, Himabindu Lakkaraju AIES - AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society, 2020. Featured in Harvard Business Review and deeplearning.ai Best Paper (Non-Archival) at AAAI Workshop on Safe AI, 2020 Oral Presentation (Top 16.6%)

[33] Faithful and Customizable Explanations of Black Box Models
Himabindu Lakkaraju, Ece Kamar, Rich Caruana, Jure Leskovec
AIES - AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society, 2019.

Oral Presentation (Top 10%)

[32] The Selective Labels Problem: Evaluating Algorithmic Predictions in the Presence of Unobservables
Himabindu Lakkaraju, Jon Kleinberg, Jure Leskovec, Jens Ludwig, Sendhil Mullainathan KDD - ACM SIGKDD Conference on Knowledge Discovery and Data Mining, 2017.

Oral Presentation (Top 8.5%)

[31] Learning Cost-Effective and Interpretable Treatment Regimes
Himabindu Lakkaraju, Cynthia Rudin
AISTATS - International Conference on Artificial Intelligence and Statistics, 2017.
INFORMS Data Mining Best Paper Award, 2017

[30] Identifying Unknown-Unknowns in the Open World: Representations and Policies for Guided Exploration Himabindu Lakkaraju, Ece Kamar, Rich Caruana, Eric Horvitz

AAAI - AAAI International Conference on Artificial Intelligence, 2017.

**Featured in Bloomberg Technology** 

[29] Confusions over Time: An Interpretable Bayesian Model for Characterizing Trends in Decision Making

Himabindu Lakkaraju, Jure Leskovec

NIPS - Advances in Neural Information Processing Systems, 2016.

[28] Interpretable Decision Sets: A Joint Framework for Description and Prediction Himabindu Lakkaraju, Stephen Bach, Jure Leskovec KDD - ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2016.

[27] A Machine Learning Framework to Identify Students at Risk of Adverse Academic Outcomes

Himabindu Lakkaraju, Everaldo Aguiar, Carl Shan, David Miller, Nasir Bhanpuri, Rayid Ghani, Kecia Addison

KDD - ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, 2015.

**Oral Presentation (Top 8.2%)** 

[26] A Bayesian Framework for Modeling Human Evaluations Himabindu Lakkaraju, Jure Leskovec, Jon Kleinberg, Sendhil Mullainathan SDM - SIAM International Conference on Data Mining, 2015.

**Oral Presentation (Top 5%)** 

- [25] Who, When, and Why: A Machine Learning Approach to Prioritizing Students at Risk of not Graduating High School on Time Everaldo Aguiar, Himabindu Lakkaraju, Nasir Bhanpuri, David Miller, Ben Yuhas, Kecia Addison, Shihching Liu, Marilyn Powell and Rayid Ghani LAK - Learning Analytics and Knowledge Conference, 2015.
- [24] What's in a name? Understanding the Interplay between Titles, Content, and Communities in Social Media Himabindu Lakkaraju, Julian McAuley, Jure Leskovec ICWSM - International AAAI Conference on Weblogs and Social Media, 2013.

Featured in Time, Forbes, Phys.Org, Business Insider, New Scientist Oral Presentation (Top 3%)

[23] Dynamic Multi-Relational Chinese Restaurant Process for Analyzing Influences on Users in Social Media

Himabindu Lakkaraju, Indrajit Bhattacharya, Chiranjib Bhattacharyya *ICDM - IEEE International Conference on Data Mining*, 2012.

#### **Oral Presentation (Top 8.6%)**

- [22] Attention prediction on social media brand pages
  Himabindu Lakkaraju, Jitendra Ajmera
  CIKM ACM Conference on Information and Knowledge Management, 2011.
- [21] Exploiting Coherence for the Simultaneous Discovery of Latent Facets and associated Sentiments

Himabindu Lakkaraju, Chiranjib Bhattacharyya, Indrajit Bhattacharya, Srujana Merugu SDM - SIAM International Conference on Data Mining, 2011.

**Best Paper Award** 

- [20] TEM: A novel perspective to modeling content on microblogs Himabindu Lakkaraju, Hyung-Il-Ahn WWW International World Wide Web Conference, 2011.
- [19] Smart news feeds for social networks using scalable joint latent factor models Himabindu Lakkaraju, Angshu Rai, Srujana Merugu WWW - International World Wide Web Conference, 2011.

#### **Preprints and Workshop Articles**

- [18] The Disagreement Problem in Explainable Machine Learning: A Practitioner's Perspective [PDF] (under review)
  Satyapriya Krishna, Tessa Han, Alex Gu, Shahin Jabbari, Steven Wu, Himabindu Lakkaraju
  Preliminary version presented at CHI Workshop on Trust and Reliance in Human-AI Teams, 2022; Featured in Fortune Magazine
- [17] Rethinking Explainability as a Dialogue: A Practitioner's Perspective [PDF] (under review)
  Himabindu Lakkaraju, Dylan Slack, Yuxin Chen, Chenhao Tan, Sameer Singh Preliminary version presented at NeurIPS Workshop on Human-Centered AI, 2022
- [16] TalkToModel: Explaining Machine Learning Models with Interactive Natural Language Conversations [PDF] (under review)
  Dylan Slack, Satyapriya Krishna, Himabindu Lakkaraju\*, Sameer Singh\*
  Outstanding Paper Honorable Mention, NeurlPS Workshop on Trustworthy and Socially Responsible Machine Learning, 2022.
- [15] Probabilistically Robust Recourse: Navigating the Trade-offs between Costs and Robustness in Algorithmic Recourse [PDF] (under review)
  Martin Pawelczyk, Teresa Datta, Johannes van den Heuvel, Gjergji Kasneci, Himabindu Lakkaraju
  Preliminary version presented at ICLR PAIR2Struct Workshop, 2022
- [14] On the Impact of Adversarially Robust Models on Algorithmic Recourse [PDF] (under review)

- Satyapriya Krishna, Chirag Agarwal, Himabindu Lakkaraju Preliminary version presented at NeurIPS Workshop on Trustworthy and Socially Responsible ML, 2022
- [13] Rethinking Stability for Attribution-Based Explanations [PDF] (under review) Chirag Agarwal, Nari Johnson, Martin Pawelczyk, Satyapriya Krishna, Eshika Saxena, Marinka Zitnik, Himabindu Lakkaraju Preliminary version presented at ICLR PAIR2Struct Workshop, 2022
- [12] When Does Uncertainty Matter?: Understanding the Impact of Predictive Uncertainty in ML Assisted Decision Making [PDF] (under review)

  Sean McGrath, Parth Mehta, Alexandra Zytek, Isaac Lage, Himabindu Lakkaraju

  Featured in VentureBeat
- [11] On the Privacy Risks of Algorithmic Recourse [PDF] (under review) Martin Pawelczyk, Himabindu Lakkaraju\*, Seth Neel\*
- [10] Analyzing and Addressing Long-Term Impacts of Algorithmic Recourse on Social Seggregation [PDF] (under review) Ruijiang Gao, Himabindu Lakkaraju
- [9] When Algorithms Explain Themselves: Al Adoption and Accuracy of Experts' Decisions [PDF] (under review) Himabindu Lakkaraju, Chiara Farronato
- [8] Can Model Explanations Help Reduce Biases in Real-World Decision Making? [PDF] (under review) Himabindu Lakkaraju, Sarah Tan
- [7] On the Incompatibility between the Right to Explanation and the Right to Be Forgotten [PDF] (working paper)
  Paul Hamilton, Davor Ljubenkov, Himabindu Lakkaraju
- [6] Evaluating the Disagreement between Local Explanations and Natural Language Rationales of Large Language Models [PDF] (working paper) Satyapriya Krishna, Jiaqi Ma, Dylan Slack, Sameer Singh, Himabindu Lakkaraju
- [5] Evaluating Causal Reasoning Capabilities of Language Models [PDF] (working paper) Isha Puri, Eric Horvitz, Himabindu Lakkaraju
- [4] An Empirical Study of the Trade-offs between Interpretability and Fairness [PDF] Shahin Jabbari, Han-Ching Ou, Himabindu Lakkaraju, Milind Tambe ICML Workshop on Human Interpretability in Machine Learning, 2020
- [3] Aspect Specific Sentiment Analysis using Hierarchical Deep Learning [PDF] Himabindu Lakkaraju, Richard Socher, Christopher Manning NIPS Workshop on Deep Learning and Representation Learning, 2014

#### **Patents**

- [2] Extraction and Grouping of Feature Words Chiranjib Bhattacharyya, Himabindu Lakkaraju, Sunil Aravindam, Kaushik Nath US8484228 B2
- [1] Enhancing knowledge bases using rich social media Jitendra Ajmera, Shantanu Godbole, Himabindu Lakkaraju, Ashish Verma US20130224714 A1

# Advising & Mentoring

#### **Current Advisees:**

Jiaqi Ma, Postdoctoral Fellow, Harvard University	2022 - Present
Suraj Srinivas, Postdoctoral Fellow, Harvard University	2022 - Present
Tessa Han, PhD Student, Harvard University	2020 - Present
Satyapriya Krishna, PhD Student, Harvard University	2021 - Present
Dan Ley, PhD Student, Harvard University	2022 - Present
Alex Oesterling, PhD Student, Harvard University	2022 - Present

	Usha Bhalla, PhD Student, Harvard University Dylan Slack, PhD Student, UC Irvine Martin Pawelczyk, PhD Student, University of Tubingen Isha Puri, Undergrad, Harvard University	2022 - Present 2019 - Present 2021 - Present 2022 - Present
	Eshika Saxena, Undergrad, Harvard University	2021 - Present
	Davor Ljubenkov, Fullbright Scholar, Harvard University	2022 - Present
	Past Advisees, Visitors, and Interns:	
	Chirag Agarwal, Postdoctoral Fellow, Harvard University	2020 - 2022
	Shahin Jabbari, Postdoctoral Fellow, Harvard University	2019 - 2021
	Umang Bhatt, PhD Student, University of Cambridge	2022
	Anna Meyer, PhD Student, University of Wisconsin Madison	2022
	Ruijiang Gao, PhD Student, Universtiy of Texas at Austin	2022
	Vishwali Mhasawade, PhD Student, New York University	2022
	Sophie Hilgard, PhD Student, Harvard University	2019 - 2021
	Elita Lobo, PhD Student, University of Massachussetts, Amherst	2020 - 2021
	Harvineet Singh, PhD Student, New York University	2020 - 2021
	Kaivalya Rawal, MS Student, Harvard University	2019 - 2021
	Aditya Karan, MS Student, Harvard University Tom Suhr, MS Student, University of Tubingen	2019 - 2020 2020 - 2022
	Javin Pombra, Undergrad, Harvard University	2020 - 2022
	Ethan Kim, Undergrad, Harvard University	2021 - 2022
	Alexis Ross, Undergrad, Harvard University	2019 - 2021
	Jorma Gorns, Undergrad, Harvard University	2019 - 2020
	Emily Jia, Undergrad, Harvard University	2019 - 2020
	Nino Arsov, Visiting Researcher, Stanford University	2016, 2019 - 2020
	Rishabh Bhargava, MS Student, Stanford University	2015
	Yilun Wang, MS Student, Stanford University	2014 - 2015
Teaching Experience	Instructor, Interpretability and Explainability in ML Department of Computer Science, Harvard University First ever course on this emerging topic	2019 - 2023
	A Short Course on Explainable Machine Learning Stanford Center for Al Safety	2022
	Instructor, Technology and Operations Management Harvard Business School	2020 - 2022
	Instructor, Introduction to ML for Social Scientists Harvard Business School	Spring 2020
	Instructor, Explainable and Accurate AI for High-Stakes Decision Makin Harvard Business Analytics Program (HBAP)	ng 2020 - 2022
	Guest Lecture, Evaluating ML Models in the Presence of Unobservable Stanford University: Counterfactuals: The Science of What Ifs?	s Spring 2021
	Guest Lecture, Explainable Machine Learning Harvard University: Al for Social Impact Course	Spring 2021
	Guest Lecture, Explainable Machine Learning Carnegie Mellon University: Advanced Introduction to Machine Learn	Autumn 2020 ing Course
	Guest Lecture, Explainable Machine Learning in Practice Carnegie Mellon University: Human-Al Interaction Course	Autumn 2020
	Guest Lecture, Introduction to Data Science, Stanford Law School	Spring 2016
	Co-instructor, Probability with Mathemagics, Stanford University: Splash Initiative for High School Students	Spring 2016
	Guest Lecture, Algorithms for Submodular Optimization	Winter 2016

	Stanford University: Mining Massive Data Sets Course		
	Co-instructor, Introduction to Python Programming Stanford University: Girls Teaching Girls to Code (GTGTC) Initiative	Spring	2015
	Mathematics and Science Tutor DreamCatchers Nonprofit Organization, Palo Alto	Winter	2015
	Teaching Assistant for Stanford University: Mining Massive Data Sets Course Stanford University: Social & Information Network Analysis Course Indian Institute of Science: Machine Learning Course	Winter Autumn Autumn	2014
Tutorials	Model Monitoring in Practice: Lessons Learned and Open Challenges KI	DD, FAccT	2022
	Explaining Machine Learning Predictions: State-of-the-art, Challenges, and Opportunities	AAAI	2021
	Explainable ML in the Wild: When Not to Trust Your Explanations	FAccT	2021
	Explainable ML: Understanding the Limits and Pushing the Boundaries Invited Tutorial	CHIL	2021
	Explaining Machine Learning Predictions: State-of-the-art, Challenges, and Opportunities	NeurlPS	2020
Invited Talks	NeurIPS Workshop on Women in Machine Learning (WiML)		2022
& Panel Discussions	NeurIPS Workshop on Machine Learning for Health (ML4H)		2022
	ICLR Workshop on Privacy, Accountability, Interpretability, Robustness, Reasoning on Structured Data		2022
	CVPR Workshop on Explainable AI for Computer Vision		2022
	<b>Keynote</b> at WWW Workshop on Explainable AI in Health		2022
	ECCV Workshop on Adversarial Robustness in the Real World		2022
	Panel Discussion on AI and the Economy, Jointly Organized by		2022
	U.S. Department of Commerce, NIST, Stanford HAI, and the FinRegLab		
	Simons Institute (Berkeley) Workshop on Societal Considerations and App	lications	2022
	Stanford Center for Al Safety Workshop on Explainable Al		2022
	Stanford Human-Centered Artificial Intelligence (HAI) Conference		2022
	Stanford Digital Econ Seminar		2022
	MIT Initiative on the Digital Economy (IDE) Seminar Series Harvard Data Science Initiative's Annual Conference		<ul><li>2022</li><li>2022</li></ul>
	Berkman Klein Center, Harvard University		2022
	Amazon Alexa Rising Star Speaker Series		2022
	University of Southern California		2022
	Fireside Chat on Explainability, Fiddler Al		2022
	INFORMS Annual Meeting	2016 -	
	<b>Keynote</b> at ACM CIKM Conference		2021
	NIST AI Risk Management Framework Workshop		2021
	Pinterest Distinguished Lecture		2021
	NeurIPS Workshop on Algorithmic Fairness through the Lens of		2021
	Causality and Robustness  NeurIPS Workshop on Explainable AI Approaches for Debugging and Dia	anosis	2021
	NeurIPS Workshop on Human and Machine Decisions	gnosis	2021
	<b>Keynote</b> at ICML Workshop on Interpretable ML in Healthcare		2021
	<b>Keynote</b> at KDD Workshop on ML in finance		2021
	Al for Good Summit organized by International Telecommunications Union the United Nations	on &	2021
	Keynote at CVPR Workshop on Responsible Computer Vision		2021
	Keynote at ICLR Workshop on Responsible Al		2021
	<b>Keynote</b> at ASPLOS Workshop on Systems Architecture for Robust, Safe, and Reciliant Saftware		2021
	and Resilient Software		

Keynote at MLSys Workshop on Personalized Recommender Systems & Algorithm University of Cambridge Neurosym Webinar Series, Jointly Organized by UPenn, MIT, Caltech, and Stanfo Voices of Data Science, UMass Amherst Max Planck Symposium on Computing and Society Keynote at CVPR Workshop on Fair, Data-Efficient and Trusted Computer Vision Keynote at MICCAI Workshop on Interpretability in Medical Imaging	2021
ETH - Center for Law and Economics, Zurich University of Michigan, Ann Arbor	2020 2019
Harvard CRCS Seminar, Cambridge	2019
Al World Conference & Expo, Cambridge EmTech MIT Conference, Cambridge	2019 2019
Google DeepMind Annual Summit, Cambridge	2019
Women in Machine Learning Workshop, Boston	2019
ICLR Workshop on Safe Machine Learning, New Orleans	2019
Harvard Data Science Conference, Cambridge	2018
South Park Commons, San Francisco	2018
Computer Science Departmental Seminars at Carnegie Mellon University, UIUC, Harvard University, Georgia Tech, Yale University, UC San Diego, USC, UCLA, UC Irvine, Duke University, Brown University, University of Michigan, University of Maryland	
Machine Learning Departmental Seminar at Carnegie Mellon University	2018
Operations Research Departmental Seminars at Columbia University, Cornell University, Princeton University	2018
NYU Stern School of Business, New York	2018
MIT Sloan School of Management, Cambridge	2018
Harvard Business School, Boston	2018
UC Berkeley School of Public Health, San Francisco	2018
	01 <i>7</i> , 2018 201 <i>7</i>
IBM Thomas J. Watson Research Center, New York Machine Learning Seminar at Duke University, Durham	2017
<b>Keynote</b> at ICML Workshop on Automatic Machine Learning, Sydney, Australia	2017
Stanford Biomedical Data Science Lecture Series, Palo Alto	2017
Stanford Symbolic Systems Coffee Chat Series, Palo Alto	2017
Stanford Data Science Workshop, Palo Alto	2017
Rising Stars Workshop in EECS, Pittsburgh	2016
CodeX Center, Stanford Law School, Palo Alto	2016
KDD Workshop on Data Science for Social Good, New York	2014
University of Chicago Computation Institute, Chicago	2014
Grace Hopper India Chapter, Bangalore, India	2011
Co-Founder & Chair: Trustworthy ML Initiative  We launched this initiative to enable easy access to resources on trustworthy ML, to showcase and promote the work of researchers from underrepresented groups and to build a community of researchers and practitioners working on the topic.	
Advisory Board Member: 2020 Computational Antitrust Project, CODEX, The Stanford Center for Legal Information	- Present cs
Panelist and Reviewer: 2020	- Present
4 National Science Foundation (NSF) Review Panels, Directorate for Computer and Information Science and Engineering (CISE)	
Co-Chair:	
KDD Trustworthy AI Day	2022
ICML Workshop on New Frontiers in Adversarial Machine Learning	2022
KDD Deep Learning Day	2021
ICML Workshop on Algorithmic Recourse	2021
ELLIS Human-Centric Machine Learning Workshop	2021
Session on Trustworthy Machine Learning at INFORMS	2020

**Community Service** 

Session on Fairness in Machine Learning at INFORMS ICLR Workshop on Debugging Machine Learning Models Workshop for spreading awareness about STEM fields among middle school stanford's Girls Teaching Girls To Code (GTGTC) Grace Hopper India Conference	girls	2019 2019 2016 2015 2011
<b>Sponsorship Chair:</b> FAccT - ACM Conference on Fairness, Accountability, and Transparency		2023
Area Chair: NeurIPS - Advances in Neural Information Processing Systems ICLR - International Conference on Learning Representations AISTATS - International Conference on Artificial Intelligence and Statistics ICML - International Conference on Machine Learning	2019 - 2020 - 2021 - 2019 -	2023
Program Committee:  AISTATS - International Conference on Artificial Intelligence and Statistics FACCT - ACM Conference on Fairness, Accountability, and Transparency AAAI - AAAI International Conference on Artificial Intelligence ICML - International Conference on Machine Learning ICLR - International Conference on Learning Representations IJCAI - International Joint Conference on Artificial Intelligence WWW - International World Wide Web Conference NIPS - Advances in Neural Information Processing Systems KDD - ACM SIGKDD Conference on Knowledge Discovery and Data Mining CIKM - ACM Conference on Information and Knowledge Management SDM - SIAM International Conference on Data Mining UAI - Conference on Uncertainty in Artificial Intelligence AAAI - AAAI conference on Artificial Intelligence		2020 2019 2018 2019 2019 2019 2018
Journal Reviewing and Editing: Frontiers in Big Data (Associate Editor) JMLR - Journal of Machine Learning Research MS - Management Science OR - Operations Research TWEB - ACM Transactions on the Web PLOS ONE - Public Library of Science ONE TKDD - ACM Transactions on Knowledge Discovery from Data TKDE - IEEE Transactions on Knowledge and Data Engineering	2021 - 2020 - 2021 - 2021 -	2022
Other:  Member, Faculty Hiring Committee, Harvard University Member, Ph.D. Student Selection Committee, Harvard University Member, Ph.D. Student Selection Committee, Stanford University	2020 - 2020 -	
Fortune: Explainable AI & The Disagreement Problem Harvard Business Review: The AI transparency paradox MIT Technology Review: How to upgrade judges with machine learning Harvard Business Review: Solving social problems with machine learning The New York Times: Even Imperfect Algorithms Can Improve the Criminal J VentureBeat: Confidence, uncertainty, and trust in AI affect how humans ma Wired: This Agency Wants to Figure Out Exactly How Much You Trust AI Bloomberg Technology: Researchers combat gender and racial bias in AI Forbes: How to craft the perfect Reddit posting Time: How to succeed on Reddit		

### Selected Media Coverage

Time: How to succeed on Reddit

Business Insider: How to execute the perfect Reddit submission Phys.org: Stanford Trio explore success formula for Reddit posts

International Business Times: The secret to what makes something go viral

New Scientist: Things that make a meme explode

The Verge: The math behind successful Reddit submissions

ACM TechNews: Stanford trio explore success formula for Reddit posts