

# Ming Yin

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CONTACT INFORMATION	Lawson Computer Science Building 2142B 305 N. University Street West Lafayette, IN 47907, USA	<i>Phone:</i> (+1)765-496-9381 <i>Email:</i> <a href="mailto:mingyin@purdue.edu">mingyin@purdue.edu</a> <a href="http://www.mingyin.org">http://www.mingyin.org</a>
RESEARCH INTERESTS	Social computing, human computation and crowdsourcing, human-computer interaction, computational social science, applied artificial intelligence and machine learning, behavior economics.	
EDUCATION	<b>Harvard University</b> , Cambridge, MA, USA <i>Ph.D.</i> in Computer Science Thesis Title: Peeking into the On-Demand Economy: Crowd Behavior and Incentive Design (Nominated for ACM Doctoral Dissertation Award)	Sep 2011 – Jun 2017
	<b>City University of Hong Kong</b> , Hong Kong, China <i>Undergraduate Exchange Student</i> in Computer Science	Aug 2009 – Dec 2009
	<b>Tsinghua University</b> , Beijing, China <i>Bachelor of Engineering</i> in Computer Software	Aug 2007 – Jul 2011
APPOINTMENTS	<b>Assistant Professor</b> <i>Purdue University</i> , Department of Computer Science, West Lafayette, IN	Jul 2018 – present
	<b>Postdoctoral Researcher</b> <i>Microsoft Research</i> , Computational Social Science Group, New York, NY	Aug 2017 – Jun 2018
	<b>Research Intern</b> <i>Microsoft Research</i> , Social Media Collective, Cambridge, MA	Aug 2016 – Oct 2016
	<b>Research Intern</b> <i>Microsoft Research</i> , Computational Social Science Group, New York, NY	Jun 2015 – Aug 2015
	<b>Research Intern</b> <i>PARC</i> , Collective Intelligence and Service Computing Group, Webster, NY	Jun 2014 – Aug 2014
	<b>Research Intern</b> <i>Xerox Research</i> , Social and Web Technology Group, Webster, NY	Jun 2013 – Aug 2013
	<b>Research Intern</b> <i>Baidu Inc.</i> , Ads Research Team, Beijing, China	Mar 2011 – Jul 2011
HONORS AND AWARDS	Best Paper Award, CHI Best Paper Award, HCOMP Purdue Vertically Integrated Projects (VIP) Program Faculty Mentor Award Best Paper Honorable Mention, CHI Microsoft Research Faculty Fellowship Finalist ACM Doctoral Dissertation Award Nomination Siebel Scholar, the Siebel Foundation Chinese Government Award for Outstanding Students Abroad Best Paper Honorable Mention, CHI NSF Student Travel Award, AAMAS Certificate of Distinction in Teaching, Harvard University Graduate Student Fellowship, Harvard University Beijing Outstanding Graduate, Beijing Municipal Commission of Education Tsinghua University Outstanding Graduate, Tsinghua University	2022 2020 2020 2019 2019 2018 Class of 2017 2016 2016 2015 2013 2011 2011 2011

Tsinghua's Friend – Widjaja Scholarship, Tsinghua University	2009
National Southwest Associated University Scholarship, Tsinghua University	2008

PUBLICATIONS    In most cases, my collaborators and I choose to have students as first authors and then determine the authorship alphabetically.

### Refereed Conference and Journal Publications

Amy Rechkemmer, Ming Yin. When Confidence Meets Accuracy: Exploring the Effects of Multiple Performance Indicators on Trust in Machine Learning Models. In *Proc. of the 40th ACM Conference on Human Factors in Computing Systems (CHI)*, New Orleans, LA, April 30 – May 6, 2022. **(Best Paper Award)**

Xinru Wang, Zhuoran Lu, Ming Yin. Will You Accept the AI Recommendation? Predicting Human Behavior in AI-Assisted Decision Making. In *Proc. of the ACM Web Conference (WWW)*, Online, April 2022.

Xiaoni Duan, Chien-Ju Ho, Ming Yin. The Influences of Task Design on Crowdsourced Judgment: A Case Study of Recidivism Risk Evaluation. In *Proc. of the ACM Web Conference (WWW)*, Online, April 2022.

Guoyang Zhou, Vaneet Aggarwal, Ming Yin, Denny Yu. A Computer Vision Approach for Estimating Lifting Load Contributors to Injury Risk. *IEEE Transactions on Human-Machine Systems (THMS)*, 52(2), April 2022.

Chun-Wei Chiang, Ming Yin. Exploring the Effects of Machine Learning Literacy Interventions on Laypeople's Reliance on Machine Learning Models. In *Proc. of the 27th ACM International Conference on Intelligent User Interfaces (IUI)*, Online, March 2022.

Guoyang Zhou, Vaneet Aggarwal, Ming Yin, Denny Yu. Video-based AI Decision Support System for Lifting Risk Assessment. In *Proc. of the IEEE International Conference on Systems, Man, and Cybernetics (SMC)*, Online, October 2021.

Abdullah Almaatouq, Mohammed Alsobay, Ming Yin, Duncan J. Watts. Task Complexity Moderates Group Synergy. *Proceedings of the National Academy of Sciences (PNAS)*, 118(36), September 2021.

Meric Altug Gemalmaz, Ming Yin. Accounting for Confirmation Bias in Crowdsourced Label Aggregation. In *Proc. of the 30th International Joint Conference on Artificial Intelligence (IJCAI)*, Online, August 2021.

Chun-Wei Chiang, Ming Yin. You'd Better Stop! Understanding Human Reliance on Machine Learning Models under Covariate Shift. In *Proc. of the 13th ACM Web Science Conference (WebSci)*, Online, June 2021.

Zhuoran Lu, Ming Yin. Human Reliance on Machine Learning Models When Performance Feedback is Limited: Heuristics and Risks. In *Proc. of the 39th ACM Conference on Human Factors in Computing Systems (CHI)*, Online, May 2021.

Xinru Wang, Ming Yin. Are Explanations Helpful? A Comparative Study of the Effects of Explanations in AI-Assisted Decision-Making. In *Proc. of the 26th ACM International Conference on Intelligent User Interfaces (IUI)*, Online, April 2021.

Amy Rechkemmer, Ming Yin. Motivating Novice Crowd Workers Through Goal Setting: An Investigation into the Effects on Complex Crowdsourcing Task Training. In *Proc. of the 8th AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Hilversum, Nether-

lands, October 2020. **(Best Paper Award)**

Xiaoni Duan, Chien-Ju Ho, Ming Yin. Does Exposure to Diverse Perspectives Mitigate Biases in Crowdsourcing? An Explorative Study. In *Proc. of the 8th AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Hilversum, Netherlands, October 2020.

Xiao Hu, Haobo Wang, Anirudh Vegesana, Somesh Dube, Kaiwen Yu, Gore Kao, Shuo-Han Chen, Yung-Hsiang Lu, George Thiruvathukal, Ming Yin. Crowdsourcing Detection of Sampling Biases in Image Datasets. In *Proc. of the Web Conference (WWW)*, Taipei, April 2020.

Keman Huang, Jinhui Yao, Ming Yin. Understanding the Skill Provision in Gig Economy from a Network Perspective: A Case Study of Fiverr. In *Proc. of the ACM on Human-Computer Interaction: Computer-Supported Cooperative Work and Social Computing (CSCW)*, Austin, TX, November 2019.

Wei Tang, Chien-Ju Ho, Ming Yin. Leveraging Peer Communication to Enhance Crowdsourcing. In *Proc. of the Web Conference (WWW)*, San Francisco, CA, May 2019.

Ming Yin, Jennifer Wortman Vaughan, Hanna Wallach. Understanding the Effect of Accuracy on Trust in Machine Learning Models. In *Proc. of the 37th ACM Conference on Human Factors in Computing Systems (CHI)*, Glasgow, UK, May 2019. **(Best Paper Honorable Mention)**

Ming Yin, Siddharth Suri, Mary Gray. Running Out of Time: The Impact and Value of Flexibility in On-Demand Crowdsourcing. In *Proc. of the 36th ACM Conference on Human Factors in Computing Systems (CHI)*, Montreal, Canada, April 2018.

Ming Yin, Yiling Chen. Predicting Crowd Work Quality under Monetary Interventions. In *Proc. of the 4th AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Austin, TX, October 30 – November 3, 2016.

Edith Law, Ming Yin, Joslin Goh, Kevin Chen, Michael Terry, Krzysztof Z. Gajos. Curiosity Killed the Cat, but Makes Crowdsourcing Better. In *Proc. of the 34th ACM Conference on Human Factors in Computing Systems (CHI)*, San Jose, CA, May 2016. **(Best Paper Honorable Mention)**

Ming Yin, Mary Gray, Siddharth Suri, Jennifer Wortman Vaughan. The Communication Network Within the Crowd. In *Proc. of the 25th International World Wide Web Conference (WWW)*, Montreal, Canada, April 2016.

Ming Yin, Yiling Chen. Bonus or Not? Learn to Reward in Crowdsourcing. In *Proc. of the 24th International Joint Conference on Artificial Intelligence (IJCAI)*, Buenos Aires, Argentina, July 2015.

Ming Yin, Yu-An Sun. Human Behavior Models for Virtual Agents in Repeated Decision Making under Uncertainty. In *Proc. of the 14th International Conference on Autonomous Agents & Multiagent Systems (AAMAS)*, Istanbul, Turkey, May 2015.

Ming Yin, Yiling Chen, Yu-An Sun. Monetary Interventions in Crowdsourcing Task Switching. In *Proc. of the 2nd AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Pittsburgh, PA, November 2014.

Ming Yin, Yiling Chen, Yu-An Sun. The Effects of Performance-Contingent Financial Incentives in Online Labor Markets. In *Proc. of the 27th Conference on Artificial Intelligence (AAAI)*, Bellevue, WA, July 2013.

Yang Sun, Yunhong Zhou, Ming Yin, Xiaotie Deng. On the Convergence and Robustness of Reserve Pricing in Keyword Auctions. In *Proc. of the 14th International Conference on Electronic Commerce (ICEC)*, Singapore, August 2012.

Ming Yin, Peibei Shi, Wangshu Zhang, Rui Jiang. Optimizing Subnetwork Markers for the Classification of Breast Cancer Metastases: A Simulated Annealing Strategy. In *Proc. of 2011 International Conference on Medical Information and Bioengineering (ICMIB)*, Chengdu, China, January 2011.

Xiaotie Deng, Yang Sun, Ming Yin, Yunhong Zhou. Mechanism Design for Multi-slot Ads Auction in Sponsored Search Markets. In *Proc. of the 4th International Frontiers in Algorithms Workshop (FAW)*, Wuhan, China, August 2010.

### **Workshop Papers, Posters and Extended Abstracts**

Chien-Ju Ho, Ming Yin. Designing and Optimizing Cognitive Debiasing Strategies for Crowdsourcing Annotation. In *the CSCW Workshop on Investigating and Mitigating Biases in Crowdsourced Data (BCD)*, Online, October 2021

Amy Rechkemmer, Ming Yin. Exploring the Effects of Goal Setting When Training for Complex Crowdsourcing Tasks. In *the 30th International Joint Conference on Artificial Intelligence (IJCAI)*, Online, August 2021 (Sister Conferences Track)

Xiao Hu, Haobo Wang, Somesh Dube, Anirudh Vegesana, Kaiwen Yu, Yung-Hsiang Lu, Ming Yin. Discovering Biases in Image Datasets with the Crowd. In *the 7th AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Skamania Lodge, WA, October 2019. (Work in progress track)

Ming Yin, Duncan Watts. Human Complex Problem Solving: The Case of Constraint Satisfaction Optimization Problems. In *the 5th International Conference on Computational Social Science (IC2S2)*, Amsterdam, Netherlands, July 2019.

Abdullah Almaatouq, Ming Yin, Duncan Watts. Optimal Team Construction for a Complex Task. In *the 5th International Conference on Computational Social Science (IC2S2)*, Amsterdam, Netherlands, July 2019.

Ming Yin, Emma Heikensten, Yiling Chen. Is Time Our Friend or Enemy? The Impact of Timing on Online Experimentation. In *the 2018 Conference on Digital Experimentation (CODE)*, Cambridge, MA, October 2018.

Ming Yin, Jennifer Wortman Vaughan, Hanna Wallach. Does Stated Accuracy Affect Trust in Machine Learning Algorithms? In *the 3rd ICML Workshop on Human Interpretability in Machine Learning (WHI)*, Stockholm, Sweden, July 2018.

Ming Yin, Siddharth Suri, Mary L. Gray. The Impact and Value of Flexibility in On-Demand Work. In *the 2017 Conference on Digital Experimentation (CODE)*, Cambridge, MA, October 2017.

Edith Law, Ming Yin, Joslin Goh, Kevin Chen, Michael Terry, Krzysztof Z. Gajos. Curiosity Killed the Cat, but Makes Crowdsourcing Better. In *the 2016 Conference on Digital Experimentation (CODE)*, Cambridge, MA, October 2016.

Mary Gray, Siddharth Suri, Ming Yin, Jennifer Wortman Vaughan, Syed Shoaib Ali, Deepti Kulkarni. The Collaboration and Communication Networks within the Crowd. In *the 2nd International Conference on Computational Social Science (IC2S2)*, Evanston, IL, June 2016.

Ming Yin, Yiling Chen, Yu-An Sun. Task Sequence Design: Evidence on Price and Difficulty. In *the 1st AAAI Conference on Human Computation and Crowdsourcing (HCOMP)*, Palm Springs, CA, November 2013. (Work in progress track)

## Other Publications

Ming Yin. Peeking into the On-Demand Economy: Crowd Behavior and Incentive Design. *Ph.D. Dissertation*, School of Engineering and Applied Sciences, Harvard University, June 2017.

PATENTS Method and Apparatus for Recommending a Selection between a Reseller and a Multi-sided Platform, with Yu-An Sun, US Patent Application Number 14/161393.

TEACHING **Instructor**, Purdue University

- CS 573 (Data Mining) Spring 2019, Fall 2019, Fall 2020, Fall 2021
- CS 490 – HCI (Human-Computer Interaction) Spring 2021
- CS 590 – HCC (Human-Centered Computing) Spring 2020
- CS 590 – CSC (Crowdsourcing and Social Computing) Fall 2018

**Guest Lecturer**, Harvard University

- CS 280r (Advanced Topics in Artificial Intelligence) Spring 2015, Spring 2017

**Teaching Fellow**, Harvard University

- CS 182 (Intelligent Machines: Reasoning, Actions and Plans) Fall 2013, Fall 2014
- AM 121 (Introduction to Optimization: Models and Methods) Spring 2013

SELECTED **Mitigating Biases in Crowdsourcing Data Annotation.**  
 INVITED TALKS *The 3rd Symposium on Biases in Human Computation and Crowdsourcing*, Keynote, Delft, Netherlands (Online). Nov 2021

**Are Explanations Helpful? A Comparative Study of the Effects of Explanations in AI-Assisted Decision Making.**  
*Human-AI Lab*, University of Chicago. Mar 2021

**Making Better Use of the Crowd to Enhance AI.**  
*Computer Science Seminar*, University of Notre Dame. Oct 2020

**Understanding Human Trust in Machine Learning through Behavioral Experiments.**  
*Computational Social Science Satellite*, Keynote, Conference on Complex Systems. Dec 2020  
*Mathematical and Computational Psychology Colloquium*, Purdue University. Jan 2020  
*Computer Science Colloquium*. Northwestern University. Oct 2019

**Towards Effective Human-AI Partnership.**  
*Statistics Colloquium*, Purdue University. Dec 2019

**Peeking into the On-Demand Economy.**  
*Marketing Seminar*, Yale University. Nov 2018  
*ACM New York City Meetup*, New York, NY. Jun 2018  
*Data Science Seminar*, University of Massachusetts at Amherst. Mar 2017  
*Computer Science Seminar*, Boston College. Mar 2017  
*Computer Science Colloquium*, Simon Fraser University. Mar 2017  
*Information Science Colloquium*, Cornell University. Feb 2017  
*Microsoft Research*. New York, NY. Feb 2017  
*Computer Science Colloquium*, Purdue University. Feb 2017  
*Computer Science Colloquium*, University of Waterloo. Feb 2017

	<b>Designing Incentives for Humans in the Loop.</b> <i>Image and Video Computing Seminar</i> , Boston University.	Nov 2016
MEDIA COVERAGE	The shape of work to come, <i>Nature News Feature</i> .	Oct 2017
LEADERSHIP AND SERVICE	<b>Program Committee Chair/Co-Chairs</b> The 10th AAAI Conference on Human Computation and Crowdsourcing (HCOMP); 2022  <b>Organizing Committees</b> AAAI Conference on Human Computation and Crowdsourcing (HCOMP) <ul style="list-style-type: none"> <li>• Doctoral symposium Co-chair; 2019</li> <li>• CrowdCamp Co-chair; 2018</li> <li>• Website Co-Chair; 2017</li> </ul> ACM Conference on Human Factors in Computing Systems (CHI) <ul style="list-style-type: none"> <li>• Co-organizer; Designing for Curiosity: An Interdisciplinary Workshop, 2017</li> </ul> <b>Senior Program Committees/Associate Chairs</b> AAAI Conference on Artificial Intelligence (AAAI): 2022 ACM Conference on Human Factors in Computing Systems (CHI): 2020, 2021, 2022 AAAI Conference on Human Computation and Crowdsourcing (HCOMP): 2020  <b>Program Committees</b> AAAI Conference on Artificial Intelligence (AAAI): 2019, 2020, 2021 International Joint Conference on Artificial Intelligence (IJCAI): 2019, 2020, 2021, 2022 – 2024 (PC Board) The Web Conference (WWW): 2018, 2019, 2021, 2022 ACM Conference on Economics and Computation (EC): 2019, 2020 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM): 2019 The Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD): 2017, 2018 The Workshop on Trust and Reliance in AI-Human Teams (@CHI): 2022 The Workshop on Behavioral Economics and Computation (@EC): 2019, 2020 The Workshop on Human-in-the-loop Methods and Human Machine Collaboration in Big Data (@IEEE BigData): 2019 The Workshop on Human Computation for Image and Video Analysis (@HCOMP): 2017  <b>Conference Reviewer</b> ACM Conference on Human Factors in Computing Systems (CHI): 2014, 2017, 2018, 2019 ACM Conference on Computer-Supported Cooperative Work (CSCW): 2015, 2018, 2019, 2021 ACM Symposium on User Interface Software and Technology (UIST): 2019, 2020 The Conference on Neural Information Processing Systems (NeurIPS): 2021 ACM Conference on Economics and Computation (EC): 2016 The Conference on Web and Internet Economics (WINE): 2012 International World Wide Web Conference (WWW): 2011 The International Colloquium on Automata, Languages and Programming (ICALP): 2010  <b>Journal Reviewer</b> Artificial Intelligence Journal (AIJ) Journal of Artificial Intelligence Research (JAIR) Science Advances ACM Transactions on Computer-Human Interaction (TOCHI) ACM Transactions on Social Computing (TSC) ACM Transactions on Intelligent Systems and Technology (TIST) IEEE Transactions on Knowledge and Data Engineering (TKDE) International Journal of Human-Computer Interaction (IJHCI)	

**Student Organizer**

Harvard EconCS Seminar

2013 – 2014

**Graduate Student Mentor**

SEAS Connect Program, Harvard University

2013 – 2014

GSAS Host Student Program, Harvard University

2012 – 2013

**President**

Student Association of Science and Technology (SAST), School of Software, Tsinghua University  
2010 – 2011