JINGYAN WANG

312 Groseclose Building, 755 Ferst Drive NW, Atlanta, GA 30332
Web: https://jingyanw.github.io/ *Email:* jingyanw@gatech.edu

RESEARCH OVERVIEW

My research interests are in *statistical machine learning* and *fairness*. I study the foundations of high-stakes decision making, such as in hiring, admissions and peer review. I draw inspiration from psychology to model real-world phenomena, develop algorithms with provable theoretical guarantees using tools from statistics and computer science, conduct crowdsourcing experiments, and implement policy changes that have made practical impact. My research is interdisciplinary, and has been published in the fields of statistics, machine learning, economics and computation, human computation, and artificial intelligence.

PROFESSIONAL EXPERIENCE

Georgia Institute of Technology 2021 – present
President's and Algorithms and Randomness Center (ARC) Postdoctoral Fellow
H. Milton Stewart School of Industrial and Systems Engineering
Hosts: Ashwin Pananjady, Juba Ziani

Simons Laufer Mathematical Sciences Institute (SLMath) 10-12.2023
Research member
Program: Algorithms, Fairness, and Equity

Simons Institute for the Theory of Computing 11.2021
Visiting postdoctoral fellow
Program: Computational Complexity of Statistical Inference

EDUCATION

Carnegie Mellon University 2015 – 2021
Ph.D., School of Computer Science
Thesis: Towards Understanding and Mitigating Biases
Advisor: Nihar B. Shah

University of California, Berkeley 2011 – 2015
Bachelor of Science, Electrical Engineering and Computer Sciences
Minor in Mathematics
Graduated with Highest Honors

AWARDS

Rising Stars in EECS Workshop 2023
Rising Stars in Data Science Workshop, University of Chicago 2022
Best Lightning Talk from College of Engineering, Fall 2022 Georgia Tech Postdoc Research Symposium 2022
Best Research Talk from College of Engineering, Spring 2022 Georgia Tech Postdoc Research Symposium 2022
Ronald J. and Carol T. Beerman President's Postdoctoral Fellowship, Georgia Tech 2021
ARC (Algorithms & Randomness Center) Fellowship, Georgia Tech 2021
Best Paper Award Nomination, AAMAS 2019
Best Student Paper Award, AAMAS 2019

Travel scholarship, AAAI 2020, AAMAS 2019, WiML and HCML workshops at NeurIPS 2019

Departmental Citation, UC Berkeley 2015
Recognition of outstanding undergraduate achievement within the department awarded to one graduating senior annually

James H. Eaton Memorial Scholarship, UC Berkeley 2015
For a keen sense of creativity and inventiveness

Kevin K. Gong Memorial Scholarship for Bright Minds and Big Hearts, UC Berkeley 2015
For passion about using technology to better the world

Arthur M. Hopkin Award, UC Berkeley 2014
For seriousness of purpose and high academic achievement

Berkeley Club of Hong Kong Undergraduate Scholarship, UC Berkeley 2014

Edward Frank Kraft Award for Freshmen, UC Berkeley 2012

Dean's honors list, UC Berkeley Fall 2011 – Spring 2015

JOURNAL PUBLICATIONS AND UNDER REVIEW

- **Jingyan Wang**, Ashwin Pananjady
  Modeling and Correcting Bias in Sequential Evaluation
  Under major revision in Operations Research, 2023.

- **Jingyan Wang**, Ivan Stelmakh, Yuting Wei, Nihar B. Shah
  Debiasing Evaluations That Are Biased by Evaluations
  Accepted with minor revision in Journal of Machine Learning Research (JMLR), 2023.

- Lei Tian, **Jingyan Wang**, Laura Waller
  3D Differential Phase-Contrast Microscopy with Computational Illumination Using an LED Array
  Optics Letters 39 (1326-1329), 2014.

PEER-REVIEWED CONFERENCE PUBLICATIONS (* indicates alphabetical order)

- Austin Xu, Andrew D. McRae, **Jingyan Wang**, Mark A. Davenport, Ashwin Pananjady
  Perceptual Adjustment Queries and an Inverted Measurement Paradigm for Low-Rank Metric Learning
  Conference on Neural Information Processing Systems (NeurIPS), 2023.

- **Jingyan Wang**, Ashwin Pananjady
  Modeling and Correcting Bias in Sequential Evaluation
  ACM Conference on Economics and Computation (EC), 2023.

- Gregory Kehne*, Ariel D. Procaccia*, **Jingyan Wang***
  Recruitment Strategies That Take a Chance
  Conference on Neural Information Processing Systems (NeurIPS), 2022.

- **Jingyan Wang**, Carmel Baharav, Nihar B. Shah, Anita Williams Woolley, R. Ravi
  Allocation Schemes in Analytic Evaluation: Applicant-Centric Holistic or Attribute-Centric Segmented?
  AAAI Conference on Human Computation and Crowdsourcing (HCOMP), 2022.

- Komal Dhull, **Jingyan Wang**, Nihar B. Shah, Yuanzhi Li, R. Ravi
  A Heuristic for Statistical Seriation
  Conference on Uncertainty in Artificial Intelligence (UAI), 2021.

- **Jingyan Wang**, Ivan Stelmakh, Yuting Wei, Nihar B. Shah
  Debiasing Evaluations That Are Biased by Evaluations
  AAAI Conference on Artificial Intelligence (AAAI), 2021.

- **Jingyan Wang**, Nihar B. Shah, R. Ravi
  Stretching the Effectiveness of MLE from Accuracy to Bias for Pairwise Comparisons
  International Conference on Artificial Intelligence and Statistics (AISTATS), 2020.

- **Jingyan Wang**, Nihar B. Shah
  Your 2 is My 1, Your 3 is My 9: Handling Arbitrary Miscalibrations in Ratings
  International Conference on Autonomous Agents and Multiagent Systems (AAMAS), 2019.
  Best Student Paper Award
  Nomination for Best Paper Award
  Appeared as invited paper "Ranking and Rating Rankings and Ratings" in Sister Conference Track at AAAI Conference on Artificial Intelligence (AAAI), 2020.

- **Jingyan Wang**, Olga Russakovsky, Deva Ramanan
  The More You Look, the More You See: towards General Object Understanding through Recursive Refinement
  Winter Conference on Applications of Computer Vision (WACV), 2018.

- KV Rashmi, Preetum Nakkiran, **Jingyan Wang**, Nihar B. Shah, Kannan Ramchandran
  Having Your Cake and Eating It Too: Jointly Optimal Codes for I/O, Storage and Network-bandwidth in Distributed Storage Systems
  Conference on File and Storage Technologies (FAST), 2015.
  Picked as the Best Paper by StorageMojo

- Steve Yadlowsky, Preetum Nakkiran, **Jingyan Wang**, Rishi Sharma, Laurent El Ghaoui.
  Iterative Hard Thresholding for Keyword Extraction from Large Text Corpora
  International Conference on Machine Learning and Applications (ICMLA), 2014.

INVITED TALKS

- *Understanding and Improving Evaluation: People, Algorithms, and Design*
  EECS Special Seminar, Massachusetts Institute of Technology 2023
  IDEAL Institute, Northwestern University 2023
  Ethics & Algorithms Seminar, University of California, Santa Cruz 2023
  Peking University 2023
  Carnegie Mellon University 2022

- *Modeling and Correcting Bias in Sequential Evaluation*
  BLISS Seminar, UC Berkeley 2023
  Algorithms, Combinatorics and Optimization Research Network (ACORN) Meeting 2023
  Rising Stars in Data Science Workshop, University of Chicago 2022
  INFORMS Annual Meeting 2022
  Information Theory and Applications Workshop (ITA) 2022

- *Debiasing Evaluations That Are Biased by Evaluations*
  INFORMS Annual Meeting 2023
  Women in EconCS, International Joint Conference on Theoretical Computer Science (IJTCS) 2021

- *Towards Understanding and Mitigating Biases*
  Georgia Institute of Technology 2021
  Harvard University 2021
  Nanyang Technological University 2021
  Peking University 2019

- *Understanding Biases in Assessment Problems*
  The Auton Lab, Carnegie Mellon University 2019

- *The More You Look, the More You See: Towards General Object Understanding through Recursive Refinement*
  National Robotics Engineering Center (NREC) 2017

TEACHING EXPERIENCE

- Co-Instructor:
  ISYE 8813 (Algorithmic Foundations of Ethical Machine Learning), Georgia Tech Fall 2023
- Guest Lecturer:
  IST402 (Crowdsourcing and Crowd-AI Systems), Penn State Spring 2023
  PIC 16B (Python with Applications II), UCLA Winter 2023
  ISYE 6740 (Computational Data Analysis), Georgia Tech Fall 2022
- Teaching Assistant: 16-720 (Computer Vision), CMU Fall 2017
- Lab Assistant: EE 20N (Signals and Systems), UC Berkeley Fall 2013

PROFESSIONAL SERVICE

- Journal reviewer: Annals of Statistics (2020), Journal of Artificial Intelligence Research (2022, 2023)
- Conference reviewer: ICLR (2024), CHI (2024), WWW (2024), NeurIPS (2023), AAAI (2021, 2022, 2023, 2024), ISIT (2021), STOC (2020), WiML NeurIPS (2019)
- Program committee member: FAccT (2023), WINE (2023), HCOMP (2022, 2023), Learning with Strategic Agents workshop, AAMAS (2022)
- Admissions committee member: Robotics Institute Summer Scholars (2019)
- Student volunteer: AAAI (2020), AAMAS (2019), ICML (2016)

OUTREACH ACTIVITIES

Speaker, Seminar on Diversity, Equity, Inclusion (DEI) and Bias, GT INFORMS Student Chapter 2022

Presenter, Mission Possible Summer Camp, Georgia Tech 2022
Led activities for high-school students to learn about crowdsourcing through storytelling the DARPA Red Balloon Challenge

Grand award judge, Regeneron International Science and Engineering Fair (ISEF) 2022

Panelist, Tea with Summer Undergraduates, CMU 2019

Interview participant, the Girls Who Code 2019
Featured in the article https://womenincs.github.io/future.html

Student volunteer, PhD student open house, CMU 2019, 2021

Graduate student mentor, Robotics Institute Summer Scholars (RISS), CMU 2018
Mentored undergraduate students through the graduate school application process and provided suggestions on the writing material

Outreach officer and webmaster, Society of Women Engineers (SWE) 2011 – 2015
Organized middle and high school outreach events and designed the chapter's website

Member, Eta Kappa Nu Honor Society (HKN) 2013 – 2015

INDUSTRIAL EXPERIENCE

Facebook Inc. 6.2014 – 8.2014
Software Engineering Intern, Privacy Infrastructure Team

EMC Corporation 6.2013 – 8.2013
Software Engineering Intern, Advanced Storage Division

REFERENCES

- Nihar B. Shah (nihars@cs.cmu.edu)
  Associate Professor
  Machine Learning Department; Computer Science Department
  Carnegie Mellon University

- R. Ravi (ravi@andrew.cmu.edu)
  Professor
  Tepper School of Business
  Carnegie Mellon University

- Ashwin Pananjady (ashwinpm@gatech.edu)
  Assistant Professor
  School of Industrial and Systems Engineering; School of Electrical and Computer Engineering
  Georgia Institute of Technology

- Juba Ziani (jziani3@gatech.edu)
  Assistant Professor
  School of Industrial and Systems Engineering
  Georgia Institute of Technology

- Yuting Wei (ytwei@wharton.upenn.edu)
  Assistant Professor
  Department of Statistics and Data Science
  The Wharton School
  University of Pennsylvania

- Ariel Procaccia (arielpro@seas.harvard.edu)
  Professor
  Computer Science, School of Engineering and Applied Sciences
  Harvard University