JINGYAN WANG

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RESEARCH OVERVIEW

My research interests are in *statistical machine learning* and *fairness*. Specifically, my research studies the foundations of high-stakes decision-making and evaluation processes, such as hiring, admissions and peer review. I consider three components that play critical roles in such processes — algorithms, people, and policies. I draw inspirations from psychology to model real-world phenomena, develop theoretical guarantees using tools from statistics and computer science, conduct crowdsourcing experiments, and implement policy changes that make practical impacts.

PROFESSIONAL EXPERIENCE

Georgia Institute of Technology 2021 – present
Ronald J. and Carol T. Beerman President's Postdoctoral Fellow
H. Milton Stewart School of Industrial and Systems Engineering
Host: Ashwin Pananjady

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

EDUCATION

Carnegie Mellon University 2015 – 2021
Ph.D. in Robotics
Master of Science in Robotics
Thesis: "Towards Understanding and Mitigating Biases"
Advisor: Nihar B. Shah

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

PUBLICATIONS AND PREPRINTS (* indicates authors in alphabetical order)

- Jingyan Wang, Ashwin Pananjady
  Modeling and Correcting Bias in Sequential Evaluation
  arXiv preprint 2205.01607
  Under review at Operations Research, 2022.

- Gregory Kehne*, Ariel D. Procaccia*, Jingyan Wang*
  Recruitment Strategies That Take a Chance
  The 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
  The 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.
  Accepted with minor revisions at Journal of Machine Learning Research (JMLR), 2022.

- 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
  Appeared as "Ranking and Rating Rankings and Ratings" at AAAI 2020 Sister Conference Track.

- 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

- Lei Tian, Jingyan Wang, Laura Waller
  3D differential phase-contrast microscopy with computational illumination using an LED array
  Optics Letters 39, 1326-1329, 2014.

TALKS

- *Understanding and Improving Evaluation: People, Algorithms, and Design*
  Peking University 2023
  Carnegie Mellon University 2022

- *Modeling and Correcting Bias in Sequential Evaluation*
  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*
  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

AWARDS

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

SERVICE

Reviewer: FAccT (2023), Journal of Artificial Intelligence Research (2022), Annals of Statistics (2020), ISIT (2021), AAAI (2021, 2022, 2023), STOC (2020), WiML NeurIPS (2019)

Program committee member: HCOMP (2022), Learning with Strategic Agents workshop, AAMAS (2022)

Qualifier committee member: Subhodeep Mitra (MS in Robotics, 2019)

Undergraduate student mentoring: Komal Dhull, Carmel Baharav

High school student mentoring: Charlotte Zhou (Bronx High School of Science, NY)

Admissions committee member: Robotics Institute Summer Scholars (2019)

Student volunteer: AAAI (2020), AAMAS (2019), ICML (2016)

OUTREACH

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 in the summer camp to learn about industrial engineering research

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, Robitics 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

TEACHING EXPERIENCE

Guest lecturer, PIC 16B (Python with Applications II), UCLA Winter 2023

Guest lecturer, 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

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

PERSONAL INTERESTS

Atlanta Community Symphony Orchestra 2023 – present
Second Violin