Angelina Wang

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Education and Training

2024-2025 **Postdoctoral Fellow**, Stanford University
Advisors: Sanmi Koyejo, Daniel E. Ho
Affiliations: HAI

2019-2024 **Ph.D. Computer Science**, Princeton University
M.A. Computer Science
Committee: Olga Russakovsky (advisor), Arvind Narayanan, Solon Barocas, Janet Vertesi, Aleksandra Korolova
Research Interests: machine learning fairness, algorithmic bias

2015-2019 **B.S. Electrical Engineering and Computer Science**, *Philosophy minor*, UC Berkeley
Advisors: Pieter Abbeel, Aviv Tamar
Major GPA: 3.96/4.00

Awards

Microsoft AI & Society Fellowship Sociotechnical Approaches to Measuring Harms Caused by AI Systems

Siebel Scholar Class of 2024 (Awarded annually for academic excellence and demonstrated leadership to over 80 top students from the world's leading graduate schools)

EECS Rising Stars 2023 (Intensive academic career workshop hosted at Georgia Tech)

National Science Foundation Graduate Research Fellowship Program (NSF GRFP)

National Defense Science and Engineering Graduate Fellowship Program (NDSEG) (declined)

Mark D. Weiser Excellence in Computing Scholarship (Merit-based award for 1-2 students in Berkeley EECS)

Regents and Chancellors' Scholar (top 2% of incoming class at UC Berkeley)

Berkeley EECS Honors Program, concentration in Philosophy

Phi Beta Kappa (Academic Honor Society)

Eta Kappa Nu (Electrical and Computer Engineering Honors Society)

Tau Beta Pi (Engineering Honors Society)

Journal and Conference Publications

A. Wang, X. Bai, S. Barocas, S. L. Blodgett. Measuring Machine Learning Harms from Stereotypes Requires Understanding Who is Being Harmed by Which Errors in What Ways. *ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (**EAAMO**) 2023*

A. Wang, O. Russakovsky. Overwriting Pretrained Bias with Finetuning Data. *International Conference on Computer Vision (**ICCV**) 2023 - Oral presentation* (152/8068, 2% acceptance for oral; 2160/8068 accepted overall)

N. Meister*, D. Zhao*, A. Wang, V. Ramaswamy, R. Fong, O. Russakovsky. Gender Artifacts in Visual Datasets. *International Conference on Computer Vision (**ICCV**) 2023* (2160/8068, 27% acceptance)

A. Wang*, S. Kapoor*, S. Barocas, A. Narayanan. Against Predictive Optimization: On the Legitimacy of Decision-Making Algorithms that Optimize Predictive Accuracy. *Journal of Responsible Computing* (**JRC**) 2023. Also at *ACM Conference on Fairness, Accountability and Transparency (**FAccT**) 2023* (150/608, 25% acceptance)

J. Katzman*, A. Wang*, M. Scheuerman, S. L. Blodgett, K. Laird, H. Wallach, S. Barocas. Taxonomizing and Measuring Representational Harms: A Look at Image Tagging. *AAAI Conference on Artificial Intelligence (**AAAI**) 2023 (1721/8777, 20% acceptance)*

A. Mathur, A. Wang, C. Schwemmer, M. Hamin, B. M. Stewart, A. Narayanan. Manipulative Tactics are the Norm in Political Emails: Evidence from 100K emails from the 2020 U.S. Election Cycle. ***Big Data & Society** 2023*

A. Wang, V. V. Ramaswamy, O. Russakovsky. Towards Intersectionality in Machine Learning: Including More Identities, Handling Underrepresentation, and Performing Evaluation. *ACM Conference on Fairness, Accountability and Transparency (**FAccT**) 2022* (179/711, 25% acceptance)

A. Wang, S. Barocas, K. Laird, H. Wallach. Measuring Representational Harms in Image Captioning. *ACM Conference on Fairness, Accountability and Transparency (**FAccT**) 2022* (179/711, 25% acceptance)

A. Wang, A. Liu, R. Zhang, A. Kleiman, L. Kim, D. Zhao, I. Shirai, A. Narayanan, O. Russakovsky. REVISE: A Tool for Measuring and Mitigating Bias in Visual Datasets. *International Journal of Computer Vision (**IJCV**) 2022*

D. Zhao, A. Wang, O. Russakovsky. Understanding and Evaluating Racial Biases in Image Captioning. *International Conference on Computer Vision (**ICCV**) 2021* (1617/6236, 26% acceptance)

A. Wang, O. Russakovsky. Directional Bias Amplification. *International Conference on Machine Learning (**ICML**) 2021* (1184/5513, 21% acceptance)

A. Wang, A. Narayanan, O. Russakovsky. REVISE: A Tool for Measuring and Mitigating Bias in Visual Datasets. *European Conference on Computer Vision (**ECCV**) 2020 - Spotlight presentation* (160/5150, 3% acceptance for spotlight; 1360/5150 accepted overall)

A. Wang, T. Kurutach, K. Liu, P. Abbeel, A. Tamar. Learning Robotic Manipulation through Visual Planning and Acting. *Robotics: Science and Systems (**RSS**) 2019* (85/272, 31% acceptance)

Workshop Publications

Computer science workshop publications tend to be more "lightly" peer-reviewed

A. Chan*, C. T. Okolo*, Z. Terner*, A. Wang*. The Limits of Global Inclusion in AI Development. *AAAI 2021 Workshop on Reframing Diversity in AI - Spotlight presentation*

W. Wang, A. Wang, A. Tamar, X. Chen, P. Abbeel. Safer Classification by Synthesis. *NeurIPS 2017 Aligned AI Workshop*

Work Experience

Summer 2023 **Arthur AI**, *Machine Learning Research Fellow*, New York City, NY
- Conduct research on corporate motivations for RAI and societal implications of large language models
- Mentor: John P. Dickerson

Summer 2021 **Microsoft Research**, *Research Intern*, Remote
- Measure representational harms in image captioning with MSR FATE (Fairness, Accountability, Transparency, and Ethics) and Cognitive Services teams
- Mentors: Solon Barocas, Hanna Wallach, Lijuan Wang, Zhe Gan

Summer 2019 **Google**, *Software Engineering Intern*, Mountain View, CA
- Worked on Google Shopping infrastructure team to build out new features for metric reporting
- Contributed side project of supplementing filtering by different metrics for fairness evaluation

Jan 2017 - Oct 2018 **Archer (Technology Nonprofit, archerimpact.com)**, *Engineering Lead*, Berkeley, CA
- Use Node and React to build web app for conducting open source investigations based off user interviews
- Visualize public data and create adjacency matrix scheme to manipulate entity connections using D3
- Present products in D.C. and RightsCon 2018 in Toronto, receiving medal from U.S. Treasury

Summer 2017 **Google**, *Engineering Practicum Intern*, Seattle, WA
- Worked on infrastructure team to improve internal streaming data processing system

Teaching

Summer 2023 - present **AI4ALL (AI for historically marginalized talent)**, *Responsible AI Curriculum Specialist*, Lead creation of Responsible AI education content for college program

Spring 2021 **Fairness in Machine Learning (COS 534)**, *Teaching Assistant*, Princeton, NJ

Fall 2020 **Fairness in Visual Recognition (COS IW 08)**, *Teaching Assistant*, Princeton, NJ

Fall 2020 **Computer Vision (COS 429)**, *Teaching Assistant*, Princeton, NJ

July 2020 **AI4ALL**, *Instructor*, Princeton, NJ

July 2018 - May 2019 **Introduction to Deep Learning DeCal**, *Student instructor for 200 person course*, Berkeley, CA

July 2018 - May 2019 **Robot Learning Lab Outreach**, *Lead*, Berkeley, CA

Fall 2018 **Introduction to Machine Learning (CS189/289A)**, *Academic Intern*, Berkeley, CA

Talks and Panels

March 2024 **Cornell Tech Seminar**, *Operationalizing Responsible Machine Learning: From Equality Towards Equity*

March 2024 **Cornell University Information Science Colloquium**, *Operationalizing Responsible Machine Learning: From Equality Towards Equity*

March 2024 **University of Southern California Computer Science Colloquium**, *Operationalizing Responsible Machine Learning: From Equality Towards Equity*

January 2024 **Georgia Tech School of Computational Science and Engineering**, *Operationalizing Responsible Machine Learning: From Equality Towards Equity*

November 2023 **University of Maryland's Values-Centered Artificial Intelligence (VCAI) Initiative**, *Sociotechnically Grounded Responsible Machine Learning*

April 2023 **Yale University's Data (Re)Makes the World**, *Against predictive optimization: on the legitimacy of decision-making algorithms that optimize predictive accuracy*

November 2022 **Princeton University's Data-Driven Social Science Initiative**, *Machine learning mistakes aligned with stereotypes are more harmful*

September 2022 **Princeton University Psychology's Susan Fiske Lab**, *ML mistakes aligned with stereotypes are more harmful than mistakes which are not*

August 2022 **AAAI/ACM Conference on AI, Ethics, and Society (AIES)**, *Student presentation: Fairness implications behind the technical assumptions of machine learning*

May 2022 **University of Chicago Psychology's Perception and Judgment Lab**, *Stereotypes in machine learning*

April 2022 **Canadian Parliament Hearing for Facial Recognition Technology before the Information, Privacy and Ethics Committee**, *Expert witness*

June 2021 **CVPR Learning with Limited and Imperfect Data Workshop**, *Mitigating bias and privacy concerns in visual data (with advisor Prof. Olga Russakovsky)*

June 2021 **CVPR Women in Computer Vision Workshop Keynote**, *Perception, interaction and fairness: key components of visual recognition (with advisor Prof. Olga Russakovsky)*

April 2021 **Out in Tech Panel for Macy's Pride ERG**, *Panelist*

June 2020 **CVPR's Seventh Workshop on Fine-Grained Visual Categorization**, *Revealing and mitigating biases in visual datasets (with advisor Prof. Olga Russakovsky)*

November 2018 **Berkeley CS10**, *Guest Lecture on AI*

Service

Reviewer: NeurIPS (2023), ICML Ethics (2024), FAccT (2023, 2024), AIES (2022), CVPR (2022, 2023, 2024), ECCV (2022), Responsible Computer Vision Workshop (CVPR 2021, ECCV 2022), IJCV

Organizing Committee: Tutorial at FAccT 2022 (Fairness in Computer Vision: Datasets, Algorithms, and Implications), Workshop at ECCV 2022 (Responsible Computer Vision), Workshop at CVPR 2021 (Responsible Computer Vision)

Leadership

Fall 2021 - present **Princeton Pre-Application Support Program** - coordinate department-wide program that matches graduate school computer science applicants to current students to review application materials; grants application fee waivers to all participants (159 applicants in recent year)

Fall 2020 - present **Bias in AI Reading Group** - organize biweekly reading group centered on topics of bias and fairness in machine learning at Princeton University

Fall 2020 - Spring 2022 **RISE (Research Inclusion Social Event)** - co-organize monthly department social event with discussions centered around diversity and inclusion issues in computer science

Outreach

Some under "Leadership"

Fall 2019 - present **Society of Women Engineers** - mentor for undergraduates

Fall 2021 - Fall 2022 **Q'nnections Mentor** - mentor for LGBTQ+ students at Princeton

Fall 2019 - Fall 2022 **Out in Tech Mentor** - mentor for LGBTQ+ youth ages 17-24 interested in technology

Fall 2020 **JuST (Technology for a Just Society)** - moderate anti-racist reading group discussions

Research Mentorship

Amaya Dharmasiri, PhD student at Princeton Computer Science

Xinran Liang, PhD student at Princeton Computer Science

Allison Chen, PhD student at Princeton Computer Science

Dora Zhao, Undergraduate and Master's student at Princeton, Current: PhD student at Stanford Computer Science

Nicole Meister, Undergraduate student at Princeton, Current: PhD student at Stanford Electrical Engineering

Kara Liu, Undergraduate student at UC Berkeley, Current: PhD student at Stanford Computer Science

Anat Kleiman, Master's student at Princeton, Current: PhD student at Harvard Computer Science

Alexander Liu, Undergraduate student at Princeton

Ryan Zhang, Undergraduate student at Princeton

Leslie Kim, Undergraduate student at Princeton
Iroha Shirai, Undergraduate student at Princeton
Frelicia Tucker, Undergraduate student at Princeton