

ANGELA ZHOU

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POSITIONS

Assistant Professor, USC Marshall Data Science & Operations	<i>June 2022-</i>
Department of Computer Science, by courtesy	<i>2025-</i>
Affiliated Faculty, USC Center for AI and Society	<i>2023-</i>
Research Fellow at Simons Institute Program on Causality	<i>Spring 2022</i>
Postdoc at Foundations of Data Science Institute, UC Berkeley	<i>2021- 2022</i>
PhD Student at Cornell University and Cornell Tech	
Department of Operations Research and Information Engineering	<i>2016-2021</i>

EDUCATION

Princeton University	<i>2012-2016</i>
Undergraduate: Class of 2016, Operations Research and Financial Engineering. Graduated summa cum laude. Thesis: Sequential Decision-Making Problems: Online Learning for Optimization over Networks	

RESEARCH INTERESTS

I develop methodology with guarantees for data-driven decision-making under uncertainty and ambiguity, building on optimization, statistics, and machine learning. My work is often motivated by high-impact domains such as e-commerce, healthcare, and public policy. As part of my work related to policy-relevant data science, I was program co-chair for a new ACM conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO) (2022), which comprised of overseeing the academic program and review process for 160 submissions.

UNDER REVIEW/PREPARING FOR JOURNAL SUBMISSION

Robust Fitted-Q-Evaluation and Iteration under Sequentially Exogenous Unobserved Confounders R&R at Management Science, resubmitted 09/2025.
With D. Bruns-Smith[†].

Data-Driven Influence Functions for Optimization-Based Causal Inference
Supersedes conference version *Empirical Gateaux Derivatives* below.
With M. I. Jordan and Y. Wang. Rejection with invitation to resubmit at Journal of Machine Learning Research (JMLR). Resubmitted 03/2026.

Optimal and Fair Encouragement Policy Evaluation and Learning Journal version
in preparation for Management Science
Solo-authored paper

Optimizing and Learning Assortment Decisions in the Presence of Platform Disengagement Preparing for resubmission to a journal.
With M. Sumida.

Batch-Adaptive Causal Annotations Conference version accepted at AISTATS 2026, extended version under preparation.

With L. Goldkind, E. Nwankwo[†]

Structured Difference-of-Q via Orthogonal Learning Conference version accepted at AISTATS 2026, extended version under preparation.

With D. Cao[†]

[†] indicates student co-author at the time of collaboration.

JOURNAL PUBLICATIONS

Assessing Algorithmic Fairness with Unobserved Protected Class Using Data Combination Management Science, 2021.

With N. Kallus and X. Mao

Minimax-Optimal Policy Learning Under Unobserved Confounding Management Science, 2021.

With N. Kallus

Preliminary results appeared in Neurips 2018 under the title “Confounding-Robust Policy Improvement”.

OTHER JOURNALS

Multi-Accurate CATE is Robust to Unknown Covariate Shifts TMLR 2024
(Transactions of Machine Learning Research, **featured** certification)

With C. Kern and M. Kim.

An Empirical Evaluation of the Impact of New York’s Bail Reform on Crime Using Synthetic Controls Statistics and Public Policy. 2023

With T. Bergin, N. Kallus, S. Koppel, A. Koo, R. Peterson, R. Ropac.

REFEREED CONFERENCE PUBLICATIONS

Author order is alphabetical, following Operations Research convention. The primary publishing venues for machine learning are selective “top-tier” refereed conferences (e.g. Neurips (20-25% acceptance rates), ICML (20-25%), AISTATS (25-30%), FAccT (formerly known as FAT*, 25%)).

Batch-Adaptive Causal Annotations Conference version accepted at AISTATS 2026, extended version under preparation.

With L. Goldkind, E. Nwankwo[†]

Structured Difference-of-Q via Orthogonal Learning Conference version accepted at AISTATS 2026, extended version under preparation.

With D. Cao[†]

Fostering the Ecosystem of AI for Social Impact Requires Expanding and Strengthening Evaluation Standards Neurips 2025 Position Paper Track (6% acceptance rate).

With B. Wilder.

Reward-Relevance-Filtered Linear Offline Reinforcement Learning AISTATS 2024
(Artificial Intelligence and Statistics 2024).
Solo-authored paper.

Optimal and Fair Encouragement Policy Evaluation and Learning Neurips 2023
(Neural Information Processing Systems).
Solo-authored paper

Empirical Gateaux Derivatives for Causal Inference Neurips 2022, “**Oral-designated**”.
Journal version submitted.
With M. Jordan and Y. Wang.

Off-Policy Evaluation with Policy-Dependent Optimization Response Neurips 2022.
With W. Guo[†] and M. Jordan.

Stateful Offline Contextual Policy Evaluation and Learning AISTATS 2022
With N. Kallus

It’s COMPASlicated: The Messy Relationship between RAI Datasets and Algorithmic Fairness Benchmarks Neurips 2021 Datasets and Benchmarks Track, Oral
M. Bao, A. Zhou, S. Zottola, B. Brubach, S. Desmarais*, A. Horowitz*, K. Lum*, S. Venkatasubramanian**

* alphabetical; otherwise contributinal.

Fairness, Welfare, and Equity in Personalized Pricing FAccT 2021.
With N. Kallus

Confounding-Robust Policy Evaluation in Infinite-Horizon Reinforcement Learning
Neurips 2020
With N. Kallus.

Assessing Disparate Impacts of Personalized Interventions: Identifiability and Bounds
Neurips 2019.
With N. Kallus

The Fairness of Risk Scores Beyond Classification: Bipartite Ranking and the xAUC Metric Neurips 2019.
With N. Kallus

Interval Estimation of Individual-Level Causal Effects AISTATS 2019.
With N. Kallus and X. Mao

Residual Unfairness in Fair Machine Learning from Prejudiced Data Proceedings of ICML 2018
With N. Kallus

Policy Evaluation and Optimization with Continuous Treatments Proceedings of AISTATS 2018
With N. Kallus

WORKING PAPERS

Denoised Multiobjective Policy Learning

Submitted to TMLR.

With E. Nwankwo[†].

Due Process on Hold: A Queueing Framework for Improving Access in SNAP

With A. Daw and C. Pache[†]

Engagement in Freemium Games

With S. Demir[†]. and M. Sumida.

Bridging Predictions and Interventions in Social Systems: A Primer.

Pitching to Nature Perspectives.

[†] indicates student co-author at the time of collaboration.

TEACHING

DSO 670: Bridging Predictions and Interventions in Social Systems Spring 2025

BUAD 311: Business Analytics, Marshall School of Business Fall 2022, 23, 25

Taught 4 sections in Fall 2022 of ≈ 70 students each, and 5 sections in Fall 2023/24.

HONORS/AWARDS

Rising Star in AI (Harvard Center for Research on Computation and Society) 2021

Rising Star in Data Science (University of Chicago Center for Data and Computing) 2020

Winner, INFORMS Data Mining Best Paper Award (Confounding-Robust Policy Improvement)
2018

Finalist for Best Paper of INFORMS Data Mining and Decision Analytics Workshop (Confounding-
Robust Policy Improvement) 2017

National Defense Science and Engineering Graduate Fellowship 2016

Ahmet S. Cakmak Thesis prize winner for undergraduate thesis 2016

ADVISING/MENTORSHIP/STUDENT CO-AUTHORS

I've been very fortunate to work with collaborators, including junior colleagues.

David Bruns-Smith UC Berkeley

Defu Cao USC

James Enouen USC

Wenshuo Guo UC Berkeley

Ezinne Nwankwo UC Berkeley

Luyang Zhang USC

UNDERGRADUATE MENTORING

Xiao Qi Lee	via JumpStart
Chloe Pache (co-advised)	via DSO Summer Scholars
Michael Qin	via DSO Summer Scholars
Jonas Liang	via DSO Summer Scholars

GRANTS/FUNDING AWARDS

USC iORB (Institute for Outlier Research in Business)	2025
Continuing funding	\$5,600
USC iORB (Institute for Outlier Research in Business)	2024
“Human-Centered Operations: Developing AI to Combine Qualitative User Experience and Quantitative Data for Better Decisions.”	\$10,000
Microsoft Accelerate Foundation Models Research Program	2023
Awarded 20,000 in Azure credits through a competitive call for research proposals on research related to foundation models.	

SERVICE

DSO Summer Scholars Co-organizer	2025
OCCS Teaching Grants Committee	2025
Student committees	
Thesis proposal committee member, Ezinne Nwankwo (Outside member, for UC Berkeley EECS)	2025
Thesis proposal committee member, Sid Devic	2025
Thesis proposal committee member, James Enouen	2025
Thesis proposal committee member, Defu Cao	2025
Dissertation Defense Committee Member, Bill Tang (USC ISYE)	2025
Qualifying Exam Committee member, Sebnem Demir (USC DSO)	2024
Dissertation Defense Committee member, Wesley Huang (USC Economics)	2025
Dissertation Defense Committee member, Zhan Gao (USC Economics)	2024
Qualifying Exam Committee member, Tianmin Xie (USC DSO)	2024
Qualifying Exam Committee member, Defu Cao (USC Computer Science)	2024
Qualifying Exam Committee member, Paul Delatte (USC Economics)	2024
Qualifying Exam Committee member, Zhan Gao (USC Economics)	2024

Qualifying Exam Committee member, Wesley Huang (USC Economics)	2023
Qualifying Exam Committee member, Yanfei Zhou (USC DSO)	2023
Undergraduate students	
Sam Zhang (USC)	2023

PROFESSIONAL EXPERIENCE

Microsoft Research New York City	2019
(Hosts: Jenn Wortman Vaughan and Miro Dudik)	
PlaceIQ Data Science	2016
AppNexus Data Science/Optimization	2015

INVITED TALKS AND PRESENTATIONS

(*) indicates presentation by a junior coauthor.

Batch-Adaptive Annotations for Causal Inference with Complex-Embedded Outcomes

University of Pennsylvania, Wharton OID	April 2025
USC ShowCAIS	April 2025
CIFAR Workshop: World Models: Causality, Neuroscience, and AI Safety	2024

Robust Fitted-Q-Iteration under Unobserved Confounders

USC ISE Seminar	2025
Online Causal Inference Seminar	2025
UCLA Statistics Seminar	2024
INFORMS Annual Meeting (*)	Oct 2023
USC Machine Learning Lunch	Oct 2023
Machine Learning and Friends Seminar, UMass Amherst	Sept 2023
Harvard/MIT Econometrics Department Seminar	Sept 2023
Bravo Center/JEA/SNSF Workshop on Using Data to Make Decisions	July 2023

Optimal and Fair Encouragement Policy Evaluation and Learning

Econometric Society Interdisciplinary Frontiers: AI/ML	2024
Berkeley N-of-1 Workshop	2024
American Causal Inference Conference (poster)	2024
Cal Poly San Luis Obispo Economics Seminar	2024
Neurips (poster)	Nov 2023
Mechanism Design for Social Good, Inequality Working Group	Oct 2023
ShowCAIS, University of Southern California	April 2023

Optimizing and Learning Assortment Decisions in the Presence of Platform Disengagement

INFORMS Annual Meeting	Oct 2023
INFORMS Manufacturing and Service Operations Management Conference (MSOM)	Oct 2023

Empirical Gateaux Derivatives for Causal Inference and Stochastic Optimization

Econometric Society Interdisciplinary Frontiers: AI/ML	2024
American Causal Inference Conference (oral)	2024
International Conference on Stochastic Programming	Aug 2023
Stanford University, Operations and Information Technology	2023
Southern California OR/OM Day	2023
Simons Institute, Causality Reunion	2023
USC Econometrics Reading Group	2023
INFORMS Annual Meeting	2022
Adobe Research	2022
Keynote, CPAIOR masterclass on Machine Learning and Optimization	2022
Joint Statistical Meetings (on confounding-robust infinite-horizon RL)	2022
American Causal Inference Conference (on Stateful Off-Policy Evaluation)	2022

Minimax-Optimal Policy Learning under Unobserved Confounding:

University of California, Irvine, Statistics	2023
University of Michigan, Computer Science and Engineering	2023
Engelhardt Lab, Gladstone	2022
Simons Workshop on Algorithmic Advances in Causal Inference	2022
Simons Fellow Seminar Series	2022
Berkeley Biostatistics Seminar	2022
NYU Langone	2022
INFORMS Annual Meeting	2021
Berkeley Causal Inference Research Group; BLISS; Semi-Autonomous Systems	2021
INFORMS Healthcare conference	2021
Center for Causal Inference Seminar	2021
ANU HMI Seminar Series	2021
Health Data Science Workshop	2021
Harvard CRCS AI for Social Impact	2021
Northwestern IEMS	2021
USC Marshall School of Business, Operations	2021
UNC Kenan-Flagler School of Business	2021
Cornell Johnson School of Business	2021
Stanford Management Science and Engineering	2021
MIT Sloan/Schwarzman	2021

UBC Sauder Operations and Logistics	2020
Berkeley Haas (Operations and IT)	2020
Columbia IEOR	2020
University of Minnesota ISYE	2020
Columbia Biostatistics Causal Inference Learning Group	2020
Facebook Core Data Science	2020
Kellogg-Wharton OM Workshop	2020
Duke Fuqua Workshop on Operations Research and Data Science	2019

Confounding-Robust Policy Evaluation in Infinite-Horizon Reinforcement Learning:

INFORMS 2020.

Assessing Algorithmic Unfairness with Unobserved Protected Class:

HMI DAIS Seminar at Australian National University	2021
Experian DataLab Brazil	2020
CMU Fairness/Ethics/Accountability Reading Group	2020

Assessing Fairness of Personalized Interventions:

INFORMS	2019
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Confounding-Robust Policy Improvement:

INFORMS Conference on Healthcare	2019
Princeton	2019
MSR NYC	2018
INFORMS	2018

Residual Unfairness:

Crime Lab New York (UChicago Urban Labs)	2018
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Policy Evaluation and Optimization with Continuous Treatments:

Spotify	2017
INFORMS	2017

SERVICE AND REFEREEING

Journal refereeing:

- Management Science (MS)
- Operations Research (OR)
- Manufacturing & Service Operations Management (M&SOM)
- Marketing Science
- Journal of Machine Learning Research (JMLR)
- Annals of Statistics (AOS)
- Journal of the American Statistical Association (JASA)

Journal of the Royal Statistical Society: Series B (JRSS:B)

Biometrika

Annals of Applied Statistics (AOAS)

Journal of Causal Inference

Journal of Business and Economic Statistics (JBES)

Quantitative Economics

INFORMS Journal on Computing

Naval Research Logistics

Statistics in Medicine

Program co-chair:

ACM Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO) (2022).

ACM EAAMO is a new conference that aims to highlight work where techniques from algorithms, optimization, and mechanism design, along with insights from the social sciences and humanistic studies, can help improve equity and access to opportunity for historically disadvantaged and underserved communities.

The role of the program co-chair was to oversee the paper submission and reviewing process (~130 reviewers for 160 papers), convene and delegate to conference sub-chair team to support programming, and curate the academic program of keynotes and sessions.

(Funded) Major Workshop Co-organizing

Bridging Prediction and Intervention Problems in Social Systems Banff, 2024

Bridging Prediction and Intervention Problems in Social Systems (1-week workshop, \$35k budget) Simons Institute, 2026

Senior Program Committee:

Theory Area Chair for EAAMO 2021, Area Chair for EAAMO 2025

Area chair for FAccT 2023-25

Area chair for AISTATS 2024-25

Awards for refereeing:

Management Science Meritorious Service Award 2023

Top reviewer at NeurIPS, ICML, AISTATS (top 400, top 5%, 33%, 10%).

Conference review:

NeurIPS 18-24 (and Datasets and Benchmarks 21)

ICML 18-24

AISTATS 19/22

EC 23

FAccT 20/22-23

MD4SG '20

Conference on Causal Learning and Reasoning (CLeaR) 22

Workshops: Neurips 2021 Workshops, Theoretical Foundations of Reinforcement Learning (ICML 2020), Workshop on Reinforcement Learning Theory (ICML 2021), Causal Inference for Sequential Decision-Making (Neurips 2021), Strategic Machine Learning (Neurips 2021)

Senior Conference Organization:

UAI Scientific Integrity Chair 2023

Workflow co-chair, American Causal Inference Conference 2022

Tutorials chair for FAccT 2023

Other:

NSF Panelist (2021, 2024)

Judge, INFORMS Applied Probability Society Student Paper Competition (2021-22, 25)

Judge, INFORMS Public Sector Operations Research Student Paper Competition (2023)