ANGELA ZHOU

az434@cornell.edu

EDUCATION

Cornell University *September 2016 - Present*
Fifth Year PhD Student, Overall GPA: 4.067
Department of Operations Research and Information Engineering.
Undergraduate: Princeton University. Class of 2016, Operations Research and Financial Engineering. Summa cum laude.

RESEARCH INTERESTS

Data-driven decision-making under ambiguity, (robust and trustworthy) statistical machine learning, (robust) causal inference, sensitivity analysis, welfare-centric machine learning, personalization.

SELECTED PUBLICATIONS

Author order is alphabetical, following Operations Research convention.

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

Minimax-Optimal Policy Learning Under Unobserved Confounding Accepted at Management Science.
With Nathan Kallus

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

Assessing Algorithmic Fairness with Unobserved Protected Class Using Data Combination Accepted at Management Science.
With Nathan Kallus and Xiaojie Mao

REFEREED PUBLICATIONS

The primary publishing venues for machine learning are selective "top-tier" refereed conferences (e.g. Neurips (20.8%, 21.1%, 20.1% acceptance rates), ICML (25.1%), AISTATS (33.2%,32.4%), FAccT (formerly known as FAT*, 25%)).

Fairness, Welfare, and Equity in Personalized Pricing Accepted at FAccT 2021.
Extended version in preparation.
With Nathan Kallus

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

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

Interval Estimation of Individual-Level Causal Effects Proceedings of AISTATS 2019.
With Nathan Kallus and Xiaojie Mao

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

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

WORKING PAPERS

Data Collection for Fair Regression Paper in progress.
With Miro Dudik and Jenn Wortman Vaughan.

HONORS/AWARDS

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

2nd place, INFORMS 2018 Junior Faculty Interest Group Paper Competition (Confounding-Robust Policy Improvement)

Finalist for Best Paper of INFORMS 2017 Data Mining and Decision Analytics Workshop (Policy Evaluation and Optimization with Continuous Treatments)

National Defense Science and Engineering Graduate Fellowship, awarded 2016

Ahmet S. Cakmak Thesis prize winner for undergraduate thesis, 2016.

PROFESSIONAL EXPERIENCE

Microsoft Research New York City June 2019 - August 2019
Research Intern; Mentors: Jenn Wortman Vaughan and Miro Dudik *New York*

· Researched optimal data collection strategies for improving inequities in machine learning regression model performance across groups.

PlaceIQ June 2016 - August 2016
Data Science Intern *New York*

· Analyzed geospatial basemap data for data analytics company assessing causal effects of online advertising on brick-and-mortar visitation.

AppNexus June 2015 - August 2015
Optimization Intern *New York*

· Developed a A/B testing experiment reporting and analysis tool to analyze revenue lift of production experiments.

TEACHING

Guest lecture, Applied Machine Learning ORIE 5750 (Spring 2018, Spring 2019)

Spring 2018: Co-organized PhD student research seminar on Fairness and Ethics in Operations Research

RELEVANT COURSES

Convex Optimization x2, Mathematical Programming (Linear), Probability Theory, Statistical Principles, Stochastic Processes, Theoretical Machine Learning, Advanced Algorithm Design, Machine Learning and Causality for Intelligent Decision-Making, Semi/Non-Parametric Econometrics, Bayesian Machine Learning, Optimal Learning, Real Analysis

INVITED TALKS

Minimax-Optimal Policy Learning under Unobserved Confounding:

Fall 2020: CU Boulder Computer Science, Columbia Biostatistics Causal Inference Learning Group, Facebook Core Data Science

Kellogg-Wharton OM Workshop (7/2020), Duke Fuqua Workshop on Operations Research and Data Science (12/2019).

Fairness, Welfare and Equity in Personalized Pricing:

Neurips 2020 Workshop on Financial Services

Confounding-Robust Policy Evaluation in Infinite-Horizon Reinforcement Learning: INFORMS 2020.

Assessing Algorithmic Unfairness with Unobserved Protected Class: Experian DataLab Brazil, (7/2020). CMU Fairness/Ethics/Accountability Reading Group (Host: Alexandra Chouldechova; Fall 2020)

Assessing Fairness of Personalized Interventions: INFORMS (11/2019)

Towards an Ecology of Care for Data-Driven Decision Making: Cornell Digital Life Initiative (4/2019).

Confounding-Robust Policy Improvement: INFORMS Conference on Healthcare (7/2019), Princeton (4/2019), MSR NYC (9/2018), INFORMS (11/2018)

Residual Unfairness: Crime Lab New York (UChicago Urban Labs) (7/2018)

Policy Evaluation and Optimization with Continuous Treatments: Spotify (7/2017), INFORMS (11/2017)

SERVICE

Workshop Co-organizing

- "Do the right thing: machine learning and causal inference for improved decision making", Neurips 2019
- Participatory Approaches to Machine Learning, ICML 2020

- Workshop on Consequential Decision Making in Dynamic Environments, Neurips 2020

Journal ad-hoc refereeing: Management Science, Journal of Machine Learning Research, Statistics in Medicine, ACM Computing Surveys

Conference review: Neurips, ICML, AISTATS, FAT*, AAAI Emerging Track on AI for Social Impact, UAI. Top reviewer designations at Neurips and ICML (top 400, top 5%, top 33%).

Program Committee (incl. reviewing): IJCAI Workshop for Social Good 2019, Theoretical Foundations of Machine Learning ICML 2020 workshop, AI in Financial Services Neurips 2020 workshop, MD4SG Conference 2020

Citizenship status: US citizen.