Christopher Jung

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EMPLOYMENT	**Meta** Sunnyvale, CA	
	Postdoctoral Scholar	October 2024 - Present
	Stanford University Stanford, CA	
	Postdoctoral Scholar, hosted by Omer Reingold	August 2022- September 2024
	Google Research New York, NY	
	Research Intern, hosted by Pranjal Awasthi and Jamie Morgenstern.	Summer 2021
	Applied Predictive Technologies Arlington, VA	
	Software Engineer	2016-2017
	Software Engineer Intern	Summer 2014 & 2015

EDUCATION

University of Pennsylvania Philadelphia, PA — August 2017- May 2022
Ph.D., Computer and Information Science
Advisor: Michael Kearns, Aaron Roth

Cornell University Ithaca, NY — August 2012- May 2016
B.S., *Summa Cum Laude* with Honors, Computer Science

RESEARCH INTERESTS

Foundations of Responsible Machine Learning, Uncertainty Quantification, Learning Theory, Algorithmic Fairness, Game Theory, Differential Privacy

AWARDS & FELLOWSHIPS

Honorable Mention: NSF Graduate Research Fellowship Program (2019)

PREPRINTS & MANUSCRIPTS

Orthogonal Causal Calibration.
https://www.arxiv.org/abs/2406.01933
with Vasilis Syrgkanis, Justin Whitehouse, Bryan Wilder, Zhiwei Steven Wu

Taking a Moment for Distributional Robustness.
https://arxiv.org/abs/2405.05461
with Jabari Hastings, Charlotte Gates Peale, Vasilis Syrgkanis

PUBLICATIONS

Oracle Efficient Online Multicalibration and Omniprediction.
The ACM-SIAM Symposium on Discrete Algorithms, (SODA) 2024
with Sumegha Garg, Omer Reingold, and Aaron Roth

Batch Multivalid Conformal Prediction.
The Eleventh International Conference on Learning Representations (ICLR) 2023
with Georgy Noarov, Ramya Ramalingam, Aaron Roth

Multicalibrated Regression for Downstream Fairness
The 6th AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES) 2023
with Ira Globus-Harris, Varun Gupta, Michael Kearns, Jamie Morgenstern, Aaron Roth

Practical Adversarial Multivalid Conformal Prediction
The 36th Annual Conference on Neural Information Processing Systems (NeurIPS), 2022 (Oral Presentation)
with Osbert Bastani, Varun Gupta, Georgy Noarov, Ramya Ramalingam, Aaron Roth

Distributionally Robust Data Join
The 4th Symposium on Foundations of Responsible Computing (FORC) 2023
with Pranjal Awasthi, Jamie Morgenstern

Online Multivalid Learning: Means, Moments, and Prediction Intervals
The 13th Innovations in Theoretical Computer Science Conference (ITCS), 2022
with Varun Gupta, Georgy Noarov, Mallesh M. Pai, Aaron Roth

Adaptive Machine Unlearning
The 35th Annual Conference on Neural Information Processing Systems (NeurIPS), 2021
with Varun Gupta, Seth Neel, Aaron Roth, Saeed Sharifi-Malvajerdi, Chris Waites

Moment Multicalibration for Uncertainty Estimation
The 34th Annual Conference on Learning Theory (COLT), 2021
with Changhwa Lee, Mallesh M. Pai, Aaron Roth, Rakesh Vohra

An Algorithmic Framework for Fairness Elicitation
The 2nd Symposium on Foundations of Responsible Computing (FORC), 2021
with Michael Kearns, Seth Neel, Aaron Roth, Logan Stapleton, Zhiwei Steven Wu

Fair Prediction with Endogenous Behavior
The 21st ACM Conference on Economics and Computation (EC), 2020
with Sampath Kannan, Changhwa Lee, Mallesh Pai, Aaron Roth, Rakesh Vohra

Metric-Free Individual Fairness In Online Learning
The 34th Conference on Neural Information Processing Systems (NeurIPS), 2020 (Oral Presentation)
with Yahav Bechavod, Zhiwei Steven Wu

A New Analysis of Differential Privacy's Generalization Guarantees
The 13th Innovations in Theoretical Computer Science (ITCS) Conference, 2020
with Katrina Ligett, Seth Neel, Aaron Roth, Saeed Sharifi-Malvajerdi, Moshe Shenfeld

A Center in Your Neighborhood: Fairness in Facility Location
The 1st Symposium on Foundations of Responsible Computing (FORC), 2020
with Sampath Kannan, Neil Lutz

Quantifying the Burden of Exploration and the Unfairness of Free Riding
The ACM-SIAM Symposium on Discrete Algorithms (SODA), 2020
with Sampath Kannan, Neil Lutz

Fair Algorithms for Learning in Allocation Problems
The 2nd Annual ACM Conference on Fairness, Accountability, and Transparency (FAT*), 2019
with Hadi Elzayn, Shahin Jabbari, Michael Kearns, Seth Neel, Aaron Roth, Zachary Schutzman

Online Learning with an Unknown Fairness Metric
The 32nd Annual Conference on Neural Information Processing Systems (NeurIPS), 2018
with Stephen Gillen, Michael Kearns, Aaron Roth

TEACHING &	**Advisor**	Summer 2024
MENTORING		

Advisor Summer 2024
Advised an undergraduate student at Stanford, Tanvi Deshpande, during her CS summer research program (CURIS)

Advisor Summer 2023
Advised two Stanford Undergraduate students, Danny Sallis and Odelia Lorch, during their CS summer research program (CURIS)

Advisor 2020-2021
Advised the University of Pennsylvania undergraduate senior theses of Trishla Pokharna, Brian Handen, Hyewon Lee, Qingrong Ji, Tashweena Heeramun. For their project, they implemented the algorithm in one of my papers, "Moment Multicalibration for Uncertainty Estimation".

1. They won the the Viewer's Choice Award at M&T Summit with cash prize of $1,000; they received 170 votes, approximately 50% of the audience.

2. They also won the Best Paper award for the Systems & Platforms track at the Andrew P. Sage Memorial Capstone Design Competition.

Guest Lecturer Taught the Causality Module
Algorithmic Fairness (CS 256), Stanford Winter 2022, Winter 2023

Teaching Assistant
Algorithmic Game Theory (NETS 412), UPenn Fall 2019
Networked Life (NETS 112), UPenn Fall 2019
Introduction to Analysis of Algorithms (CS 4820), Cornell Spring 2015
Machine Learning for Intelligent Systems (CS 4780), Cornell Fall 2015
Data Structures and Functional Programming (CS 3110), Cornell Fall 2014, Spring 2015
Engineering Applications of Operations Research (ENGRI 1101), Cornell Spring 2016

TALKS **Multivalid Conformal Prediction**
- Algorithmic Fairness Seminar at Stanford. October 2022
- Multigroup Fairness and the Validity of Statistical Judgement at Simons Institue for the Theory of Computing, University of California, Berkeley. April 25, 2023
- Naver, Korea. May 2024

Online Multivalid Learning: Means, Moments, and Prediction Intervals
- Harvard Theory Seminar. March 2021

Moment Multicalibration for Uncertainty Estimation
- Northwestern Junior Theorists Workshop 2020. December 2020
- TOC For Fairness. February 2021

Bridging Group and Individual Fairness
- Morgan Stanley: ML External Speaker Series. October 2020

Online Learning with an Unknown Fairness Metric
- Simons Institute Summer Cluster: Algorithmic Fairness. July 2018

SERVICE **Conference & Journal Reviewing**
ICML 2019, NeurIPS 2019 (top 50%), ITCS 2019, JMLR 2019, ICML 2020, JMLR 2020, NeurIPS 2020 (top 50%), AISTATS 2021, FAccT 2021, JMLR 2021, FORC 2021, NeurIPS 2021, AISTATS 2022, STOC 2022, ICML 2022, TMLR 2022, ALT 2023, AISTATS 2023, Journal of the Royal Statistical Society 2024

PC Member
FORC 2024, COLT 2024

PROGRAMS   *Summer Cluster: Fairness*   May - July 2019
Simons Institute for the Theory of Computing, University of California, Berkeley

Summer Cluster: Algorithmic Fairness   July 2018
Simons Institute for the Theory of Computing, University of California, Berkeley

TECHNICAL   Python, C#, Java, SQL
SKILLS