

# ZIPING XU

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## EDUCATION

**University of Michigan, Ann Arbor, Department of Statistics**

Ann Arbor, MI, US

*Ph.D. Candidate in Statistics, advised by Professor Ambuj Tewari*

*Sep. 2018 – May 2023 (expected)*

**Peking University, Yuanpei College**

Beijing, China

*BSc. Data Science, advised by Professor Song Xi Chen*

*Sep. 2014 – Jul. 2018*

## RESEARCH INTERESTS

Machine Learning Theory: Transfer Learning and Multitask Learning, Reinforcement Learning, Continual Learning

Application Studies: Computational Chemistry, cryo-EM, precision medicine

## AWARDS

**Rackham Predoctoral Fellowship** [\[link\]](#)

Sep. 2022 – May 2023

**Departmental Graduate Student Instructor Team Award**

Winter 2020

**Lee Wai Wing Scholarship**

Sep. 2015– May 2016

## PUBLICATIONS

(\* for equal contributions)

### Preprint or ongoing work

- Yangyi Lu\*, **Ziping Xu**\*, Ambuj Tewari (2021). *Bandit Algorithms for Precision Medicine*. (To appear as a chapter in the Handbook of Statistical Methods for Precision Medicine edited by Tianxi Cai et al.) [\[arXiv\]](#)
- Dongsung Huh, **Ziping Xu** (2022). *Reaching Theoretical Bound of Meta Representation Learning via Deep Weight Decay*.
- **Ziping Xu**, Quanfu Fan, et al. (2022). *Coupling Semi-supervised Learning with Reinforcement Learning for Better Decision Making -- An application to Cryo-EM Data Collection*, submitted to ICLR 2023.

### 2022

- **Ziping Xu**, Ambuj Tewari (2022). *Adaptive Sampling for Discovery*, Conference on Neural Information Processing Systems (NeurIPS) 2022. [\[arXiv\]](#)
- **Ziping Xu**, Ambuj Tewari (2022). *On the Statistical Benefits of Curriculum Learning*, ICML 2022. [\[arXiv\]](#)
- Aditya Modi, **Ziping Xu**, Mohamad Kazem Shirani Faradonbeh, Ambuj Tewari (2022). *Big Control Actions Help Multitask Learning of Unstable Linear Systems*, ICML 2022 Complex feedback in online learning Workshop.
- Hao Sun, **Ziping Xu**, et al. (2022). *MOPA: a Minimalist Off-Policy Approach to Safe-RL*, Deep Reinforcement Learning Workshop at NeurIPS 2022. [\[arXiv\]](#)
- Hao Sun, **Ziping Xu**, et al. (2022). *Supervised Q-Learning for Continuous Control*, Deep Reinforcement Learning Workshop at NeurIPS 2022. [\[arXiv\]](#)

### 2021

- **Ziping Xu**, Ambuj Tewari. (2021). *Representation Learning Beyond Linear Prediction Functions*, NeurIPS 2021 (Spotlight top 3%) [\[arXiv\]](#)
- **Ziping Xu**, Amirhossein Meisami, Ambuj Tewari (2021). *Decision Making Problems with Funnel Structure: A Multi-Task Learning Approach with Applications to Email Marketing Campaigns*, AISTATS 2021. [\[arXiv\]](#)

### 2020

- Tarun Gogineni, **Ziping Xu**, et. al. (2020). *TorsionNet: A Reinforcement Learning Approach to Sequential Conformer Search*, NeurIPS 2020. [\[arXiv\]](#)
- **Ziping Xu**, Ambuj Tewari. (2020). *Reinforcement Learning in Factored MDPs: Oracle-Efficient Algorithms and Tighter Regret Bounds for the Non-Episodic Setting*, NeurIPS 2020. [\[arXiv\]](#)

- **Ziping Xu**, Song Xi Chen, Xiaoqing Wu (2020). *Meteorological Change and Impacts on Air Pollution: Results from North China*, Journal of Geophysical Research: Atmospheres. [\[link\]](#)

## 2019

- **Ziping Xu**, Ambuj Tewari (2019). *Worst-Case Regret Bound for Perturbation Algorithm on Reinforcement Learning*, NeurIPS 2019 Optimization Foundation for RL Workshop. [\[link\]](#)

## Prior to 2019

- Liu Wenling, **Ziping Xu**, and Tianan Yang (2018). *Health Effects of Air Pollution in China*, International Journal of Environmental Research and Public Health. [\[link\]](#)
- Shuyi Zhang, Bin Guo, Anlan Dong, Jing He, **Ziping Xu**, and Song Xi Chen (2017). *Cautionary Tales on Air-quality Improvement in Beijing*, Proceedings of Royal Society A. [\[link\]](#)

## WORK AND RESEARCH EXPERIENCE

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### MIT-IBM Watson Lab

Research intern to Dr. Quanfu Fan

Topic: Applications of Reinforcement Learning (RL) to cryo-EM data collection

Cambridge, MA

May 2022 – Aug. 2022

### University of Michigan, Department of Statistics

Research assistant to Prof. Ambuj Tewari

Topic: Sample efficient Reinforcement Learning algorithm

Topic: Theoretical understandings of Transfer Learning

Ann Arbor, MI

May 2019 – Present

### Adobe Inc.

Research intern to Dr. Amirhossein Meisami

Topic: Contextual bandits with funnel structure on email campaign data

San Jose, CA (remote)

May 2020 – Aug. 2020

### Peking University, Guanghua School of Management

Research assistant to Prof. Song Xi Chen (Department of Commerce and Economic Statistics)

Topic: Impacts of climate change on air pollution

Beijing, China

Mar 2016 – Apr 2018

## SERVICES

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### Reviewer

- Reviewer for NeurIPS 2021, 2022; AISTATS 2021, 2022; ALT 2021; AAMAS 2020; Journal of the American Statistical Association

### Organizer

- Student representative for 2021 Michigan Student Symposium for Interdisciplinary Statistical Sciences

## TEACHING EXPERIENCES

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### Graduate Student Instructor, University of Michigan

Ann Arbor, MI

STATS 425, Introduction to Probability

Fall 2018

STATS 250, Introduction to Statistics and Data Analysis

Winter 2019

STATS 415, Introduction to Data Mining

Fall 2019

STATS 503, Statistical Learning II (Departmental Graduate Student Instructor Team Award 2020)

Winter 2020

## MENTORING EXPERIENCE

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Zhiyu (Ted) Yuan (2022): Curriculum Learning for Reinforcement Learning

Runxuan Jiang (2022): Multitask Reinforcement Learning

Anh Tuan (Alan) Tran (2020-2021): Sample efficient Reinforcement Learning

## ADDITIONAL INFORMATION

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### Computer Skills

- Skilled at R, MATLAB, Python (including using Python for data crawling), Photoshop and Office.
- Familiar with popular deep learning libraries including PyTorch, Tensorflow.