

Luofeng Liao

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EDUCATION

Ph.D. candidate, Columbia University, Industrial Engineering and Operations Research	2021 – present
M.S., Statistics, University of Chicago, US	2019 – 2020
B.S., Computer Science (Data Science Track), Fudan University, Shanghai, China	2015 – 2019
2015 - 17: School of Computer Science (rank 5/108)	
2017 - 19: School of Data Science (2/40)	
Undergraduate Exchange Program, University of Melbourne, Australia	February – July 2018

RESEARCH INTERESTS

Machine learning for causal inference and econometrics; theoretical reinforcement learning; federated learning.

PUBLICATIONS

<i>Provably Efficient Neural Estimation of Structural Equation Model: An Adversarial Approach</i>	(First author, NeurIPS 2020)
Collaborators: You-Lin Chen, Zhaoran Wang, Mladen Kolar, Bo Dai	March – June 2020
– The first scalable NN-based estimation procedure with guarantees for econometrics and causal inference.	
<i>Provably Efficient Instrument-Aided Causal Reinforcement Learning with Linear Function Approximation</i>	(Co-first, under review)
Collaborators: Zuyue Fu, Zhaoran Wang, Mladen Kolar	June – November 2020
– The first scalable IV-aided policy learning algorithm with guarantees on (i) sample complexity and (ii) convergence to optimal policy, in the presence of confounders.	
<i>Local AdaGrad-Type Algorithm for Stochastic Convex-Concave Minimax Problems</i>	(First author, under review)
Collaborators: Li Shen, Jia Duan, Mladen Kolar, Dacheng Tao	March – June 2021
– One of the first provably efficient federated learning algorithm for minimax problems without the need of learning rate tuning.	

APPLIED RESEARCH

<i>Leader, Spatio-temporal Modeling of Environmental Data with Additive Models</i>	June – September 2018
Advisor: Prof Ruibin Xi, Peking University	(summer research project)
– Study the effects of PM2.5 on cerebrovascular diseases in Beijing.	

STATISTICAL SOFTWARE

<i>Sole Developer, Modern Multivariate Analysis by Penalization (sponsored project in Google Summer of Code 2019, Statistical Computing in R)</i>	
Advisors: Prof. Genevera Allen, Dr. Michael Weylandt (Rice University)	May – August 2019
<i>Sole Developer, GPU-accelerated Bayesian Regression (ranked 2/30 in student poster session of 2018 Fudan Science and Innovation Forum)</i>	
Advisor: Prof. Quoci Qian (University of Melbourne)	March – July 2018

PROFESSIONAL SERVICES

Reviewer, AISTATS2020, NeurIPS2020, 2021

SKILLS

Languages: Mandarin and Cantonese (Native), English (Proficient, TOFEL 114, Speaking 27)
Computing: R, Python, MATLAB, SQL, C++, Spark, Linux shell, Latex