

RESEARCH
INTERESTS

Reinforcement Learning, Data-driven Decision-making, Revenue Management, Optimization, Statistical Machine Learning, High-dimensional Statistics, Nonparametric Statistics

ACADEMIC APPOINTMENTS

Postdoc Associate 2022 – Present
 Laboratory for Information and Decision System
[Massachusetts Institute of Technology \(MIT\)](#)
 Advisor: Martin Wainwright

Teaching Fellow	2022
Wharton Data Science Academy	

Research Fellow 2022
 The Wharton School
 University of Pennsylvania
 Advisor: Linda Zhao

EDUCATION

The Wharton School September 2017 - August 2022
 University of Pennsylvania, Philadelphia, USA
Ph.D. in Statistics and Data Science
 Dissertation: *Estimation and Inference for Convex Functions and Computational Efficiency in High Dimensional Statistics* ([pdf](#))
 Advisor: Tony Cai

Tsinghua University September 2013 - July 2017
Beijing, PRC
B.S. in Pure and Applied Mathematics, GPA: 92/100, with distinction

PAPERS

1. Cai, T.T., **Chen, R.**, Zhu, Y. (2021).
“Estimation and Inference for Minimizer and Minimum of Convex Functions: Optimality, Adaptivity, and Uncertainty Principles.” *Annals of Statistics (revision under review)*. Available [here](#).
2. Cai, T.T., **Chen, R.**, Zhu, Y. (2021).
“Supplement Paper to Estimation and Inference for Minimizer and Minimum of Convex Functions: Optimality, Adaptivity, and Uncertainty Principles.” *Annals of Statistics (revision under review)*. Available [here](#).
3. Cai, J., **Chen, R.**, Yang, D., Zhu, W., Shen, H., Zhao, L. (2023).
“Network Regression and Supervised Centrality Estimation.” *Journal of American Statistical Association (revision)*. Available [here](#).
4. Cai, J., **Chen, R.**, Wainwright, M., Zhao, L. (2023).
“Doubly High-Dimensional Contextual Bandits: An Interpretable Model with Applications to Assortment/Pricing” *Submitted to Management Science*. Available [here](#).

PREPRINTS

1. **Chen, R.** (2022). “Interplay Between Statistical Accuracy and Running Time Cost: a Framework and Three Cases.” *To be submitted to Operations Research*. Available [here](#).

2. **Chen, R.** (2022).
 “Optimal Estimation and Inference for Minimizer and Minimum of Multivariate Additive Convex Functions.” *To be submitted to Annals of Statistics.* Available [here](#).
3. Cai, J., **Chen, R.**, Wainwright, M., Zhao, L. (2023).
 “Personalized Reinforcement Learning: with Applications to Business.”
4. Cai, J., **Chen, R.**, Huang Q., Wainwright, M., Zhao, L., Zhu W. (2023).
 “Optimal Assortment and Pricing with Novel Poisson Arrival MNL Models.”
5. **Chen, R.**, Liu, H. (2018).
 “Heterogeneous Treatment Effect Estimation through Deep Learning.” Available at <https://arxiv.org/abs/1810.11010>.

WORKING PAPER

1. Cai, T.T., **Chen, R.** “Crowdsourcing: Beyond Dawid-Skene Model.”(2020).
2. **Chen, R.**, Wainwright, M. (2023). “Tight Constrained Inequality.”
3. **Chen, R.**, Smetters, K., Zhang, X. (2023). “Estimation, Inference, and Ranking in Portfolio Choice Problems.”
4. **Chen, R.**, Pathak, R., Wainwright, M. (2023). “On Power of Interpolation.”

(All papers are in alphabetical order)

TALKS

- Doubly High-Dimensional Contextual Bandits: An Interpretable Model for Joint Assortment and Pricing, *INFORMS 2023, Phoenix.* Oct. 2023
- Personalized Reinforcement Learning: with Applications to Business, *Joint Statistical Meeting 2023, Toronto.* Aug. 2023
- Dynamic joint assortment and pricing through doubly high-dimensional contextual bandits, *MSOM 2023, Montreal.* June 2023
- An Interpretable Machine Learning Model for Assortment/Pricing, *Informs Business Analytics Conference 2023, Aurora.* April 2023
- High-dimensional Continuum Armed and High-dimensional Contextual Bandit: with Applications to Assortment and Pricing, *Wharton Customer Analytics with Master Kong Food Company.* Nov. 2022
- Statistics, Optimization, and Machine Learning: with Applications in Economics and Business, *Department of Business Economic and Public Policy, The Wharton School, University of Pennsylvania.* Oct. 2022
- Crowdsourcing: Beyond Dawid Skene Model, *Joint Statistical Meeting 2020, Philadelphia.* Aug. 2020
- Heterogeneous Treatment Effect Estimation through Deep Learning, *Joint Statistical Meeting 2018, Vancouver.* Aug. 2018

SELECTED AWARDS	• Google Fellowship Nominee (Top 4 across all UPenn schools)	Sept. 2020
	• Second Place, Wharton Hackathon: Covid and the Economy	Sept. 2020
	• The George James Doctoral Fellowship, The Wharton School	March 2017
	• XueTangBan Membership and Scholarship (Tsinghua Xuetang Mathematics Program), Tsinghua University	Feb. 2014 - July 2017
	• Academic Excellence Honor, Tsinghua University	2014, 2015, 2016
	• Tsinghua University Distinguished Student Programme (4 out of 107)	2014
	• Second Prize, (National) Regional College Students' Physics Contest	2014
	• Silver Medal, China Mathematical Olympiad 2013	Jan. 2013
	• Gold Medal, China Girls' Mathematical Olympiad 2012	Aug. 2012
	• Second Prize, National High Schools Physics Competition	Oct. 2012
SERVICE	• Member of Executive Board, Tsinghua Alumni Association of Greater Boston	Nov. 2022 - present
	• Director of Public Relations & Propagation and Board Director, Tsinghua Alumni Association of Greater Philadelphia	July 2021 - present
	• Board Member of the Wharton Society for the Advancement of Women in Business Academia	Aug. 2019 - Aug. 2021
	• Secondary Treasurer, Tsinghua Alumni Association of Greater Philadelphia	Aug. 2019 - July 2021
	• Volunteer at the 8th International Congress on Industrial and Applied Mathematics, Beijing	Aug. 2015
	• Vice President of Student Association of Science and Technology	June 2015 - Dec. 2016
	• Head of Publicity, Planning, and Innovation Office of Student Association of Science and Technology	June 2014 - June 2015
TEACHING	• Teaching Fellow, Wharton Data Science Academy	2022
	• TA, Introduction to Python for Data Science (OIDD 477/777/STAT 777)	Spring 2022
	• TA, Forecasting Methods for Management (STAT 435/535/711)	Fall 2021
	• TA, Introductory Statistics (STAT 111)	Spring 2020, Fall 2020, Spring 2021
	- Led recitation sessions	
	- Head TA	
	• TA, Probability (STAT 430)	Fall 2019
	• TA, Optimization Methods in Machine Learning (STAT 991, Ph.D.)	Spring 2019
	- Oversaw and edited lecture notes for all 18 class sessions.	
	- Graded and provided homework solutions	
	- Organized group presentations	
	• TA, Introduction to Business Statistics (STAT 101)	Fall 2018

- SOFTWARE
- Developed a Matlab-based, fully functional algorithm for drosophila melanogaster embryo detection and registration. Provided to Professor Bin Yu's group.
- SKILLS
- Programming: Proficient in R, Python, Matlab, L^AT_EX; Experienced in C++
 - Languages: Chinese (Native); English (Fluent)