Ran Chen

434A.4 Academic Research Building
265 South 37th Street
Philadelphia, PA 19104

Email: ran1chen@wharton.upenn.edu
Tel: 2156882578

Research Interests

Statistical Machine Learning, Optimization Algorithms, High Dimensional Statistics, Nonparametric Statistics, Reinforcement Learning, Deep Learning, Causal Inference, Econometrics, Bioinformatics

Education

The Wharton School September 2017 – August 2022 (expected)
University of Pennsylvania, Philadelphia, USA
Doctoral Candidate in Statistics (Advisor: Tony Cai)

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

Dissertation

"Estimation and Inference for Convex Functions and Computational Efficiency in High Dimensional Statistics." *Manual Script Available. Introduction available here*

Journal Publications

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 (under review). Available here.*

Preprints

1. **Chen, R.** (2022) "Optimal Estimation and Inference for Minimizer and Minimum of Multivariate Additive Convex Functions."
2. **Chen, R.** (2022) "Interplay Between Statistical Accuracy and Running Time Cost: A Framework and Examples."
3. **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.**, Zhu, Y.M. "Deep Learning Theory: Understanding Over-parametrization".
3. **Chen, R.** "Reinforcement Learning Based Decision Making System for Pandemic Control".

Talks

- Heterogeneous Treatment Effect Estimation through Deep Learning, *Joint Statistical Meeting 2018, Vancouver, Canada, 2018*
- Crowdsoucing: Beyond Dawid Skene Model, *Joint Statistical Meeting 2020, Philadelphia, U.S.A., 2020*

Selected Awards

- Google Fellowship University Nominee (4 nominee throughout all schools of Upenn) Sep. 2020
- Second Place, Wharton Hackathon, COVID and the Economy Sep. 2020
- The George James Doctoral Fellowship, the Wharton School March. 2017
- XueTangBan Membership and Scholarship, Tsinghua University Feb. 2014 - Jul. 2017
- Academic Excellence Honor, Tsinghua University 2014,2015,2016
- Tsinghua University Distinguished Students Programme (4/107) 2014
- Second Prize, (National) Regional College Students Physics Contest 2014
- Silver Medal, China Mathematical Olympiad 2013 Jan. 2013
- Gold Medal, China Girl's Mathematical Olympiad 2012 Aug. 2012
- Second Prize, National High Schools Physics Competition Oct. 2012

Service

- Director of Public Relations & Propagation and Board Director, Tsinghua Alumni Association of Greater Philadelphia Jul. 2021 -now
- 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 - Jul. 2021
- Volunteer at the 8th International Congress on Industrial and Applied Mathematics, Beijing Aug. 2015
- Vice President of Student Association of Science and Technology Jun. 2017 - Dec. 2017
- Administer of Department of Information of Student Association of Science and Technology Jun. 2014 - Jun. 2015

Teaching

- TA, Introduction to Business Statistics (STAT 101), Fall 2018
- TA, Optimization Methods in Machine Learning (STAT 991, PhD Seminar) , Spring 2019
  - Oversee and edit all 18 Lectures' scribed notes
  - Provide homework solution and grade homework
  - Hold office hour and arrange group presentations
- TA, Probability (STAT 430), Fall 2019
- TA, Introductory Statistics (STAT 111), Spring 2020, Fall 2020, Spring 2021
  - Teach Recitation Sessions
  - Grading exams, arrange homework gradings, and help with making exam questions
- TA, Forecasting Methods for Management (STAT 435/STAT 535/STAT 711), Fall 2021
- TA, Introduction to Python for Data Science (OIDD 477/OIDD 777/STAT 777), Spring 2022

SOFTWARE

- Fully functional algorithm for drosophila melanogaster embryo detection and registration, implemented in Matlab. Provided for Professor Bin Yu's group.

SKILLS

- Programming: `R, Python, Matlab`, LaTeX (proficient); `C++` (experienced)
- Language: Chinese (Native); English (Fluent)