Feicheng Wang

f_wang@g.harvard.edu • 617-899-3519

EDUCATION

Harvard University
Ph.D. Candidate in Statistics; GPA: 3.88/4   Sept 2018 – Present
Peking University
Bachelor of Science in Statistics; GPA: 3.71/4   Sept 2014 – Jul 2018

RESEARCH EXPERIENCE

Harvard University, Department of Statistics
Ph.D. Researcher   Sept 2018 – Present
Reinforcement Learning and Control Theory
- Designed an optimal one-shot learning algorithm which minimizes the cumulative distance from the target trajectory for an unknown linear dynamical system
- Proved the first central limit theorem for Reinforcement Learning (RL) in linear dynamical systems inference
- Achieved optimal regret with exact asymptotic expression, while previous work only knows the regret order

Causal Inference and Survival Analysis
- Implemented exact matching to compare hazard ratio of getting autoimmune disease between patients who received chemotherapy/targeted therapy and immunotherapy with R (plus multiple testing and sensitivity analysis)
- Largest scope real-world data analyses on time-to-autoimmune diseases using 80+ million insurance members' records

Peking University, School of Mathematics and Science
Research Assistant   Sept 2016 – Jun 2018
- Proved a width-$(n+4)$ ReLU fully-connected network is sufficient to approximate any dimension-n continuous function

TEACHING / CONSULTING EXPERIENCE

Harvard University
Teaching Fellow   Sept 2019 – May 2020
- Taught Statistical Machine Learning and Generalized Linear Model
Statistics Consultant   Feb 2019 – May 2019
- Worked in a team to provide advice for researchers in Harvard who needed help in a statistics perspective, covering machine learning models, experiment design, selection bias, multiple testing etc.

AWARDS AND HONORS

- 3rd Place in Probability and Statistics in S.-T. Yau College Student Mathematics Contests   Oct 2016
- Gold Medal in China Mathematics Olympics (CMO)   Dec 2013

INTERNSHIP EXPERIENCE

Hudson River Trading   New York
Quantitative Research Intern   June 2021 – Aug 2021
- High Frequency: Got familiar with the coding system in C++. Constructed the signal part in the taker strategy, with average 1% return per day on the Bitcoin market in simulation.
- Mid Frequency: Designed a complete trading strategy based on 30 minutes prediction on Bitcoin and its perpetuals, which made around 3.5 million profit last year with max position 5 million (took the market impact into consideration).

PUBULICATIONS

- Lu, Zhou, Hongming Pu, **Feicheng Wang**, Zhiqiang Hu, and Liwei Wang "The expressive power of neural networks: A view from the width." In Advances in neural information processing systems, pp. 6231-6239. 2017. **(NIPS 2017, 400+ citations)**
- **Feicheng Wang** and Lucas Janson (2020) Exact Asymptotics of Adaptive Control for the Linear Quadratic Regulator (Accepted by JMLR conditioning on minor revisions)
- **Wang, Feicheng**, et al. "Real-world data analyses unveiled the immune-related adverse effects of immune checkpoint inhibitors across cancer types." *NPJ Precision Oncology* 5.1 (2021): 1-11.
- **Feicheng Wang**, Dongming Huang and S.C. Kou (2021) Catalytic Priors: Using Synthetic Data to Specify PriorDistribution in Bayesian Analysis (Draft)
- **Feicheng Wang**, Nathan Palmer, Kathe Fox, Isaac S. Kohane, Kun-Hsing Yu and S. C. Kou (2021) Real-World Data Analyses Unveiled the Cancer Risk Changes Caused by Rheumatoid Arthritis across Cancer Types. (Draft)