Feicheng Wang
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EDUCATION

Harvard University
Ph.D. Candidate in Statistics   Sept 2018 – May 2023 (expected)
Peking University
Bachelor of Science in Statistics   Sept 2014 – Jul 2018

RESEARCH HIGHLIGHTS

Harvard University, Department of Statistics
Reinforcement Learning and Control Theory
- Proved the first central limit theorem for Reinforcement Learning (RL) in the linear quadratic regulator problem.
- Closed the gap between regret upper and lower bound in the same problem.

Causal Inference and Survival Analysis
- Largest scope real-world data analyses on interaction between cancer and autoimmune diseases using 80+ million insurance members' records

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

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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

- Bronze Medal 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.
- Mid Frequency: Designed a trading strategy based on 30 minutes prediction on Bitcoin and its perpetuals

Tower Research Capital   New York
Quantitative Research Intern   Jan 2022 – Jan 2022
- High Frequency: Accomplished a relatively full cycle of trading, including fetch data, generating signals, and implementing a taker strategy with a mixture of C++ and Python codes.

D. E. Shaw & Co., L.P.   New York
Quantitative Research Intern   Jun 2022 – Aug 2022
- Designed general methods for linear signal improvement, better decorrelation, and non-linear relationship detection.

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, 500+ citations**)
- **Feicheng Wang** and Lucas Janson (2020) Exact Asymptotics of Adaptive Control for the Linear Quadratic Regulator *Journal of Machine Learning Research* 22.265 (2021): 1-112.
- **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 Prior Distribution 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)
- **Feicheng Wang** and Lucas Janson (2022) Rate-matching the regret lower-bound in the linear quadratic regulator with unknown dynamics (draft on arxiv)