ZIPING XU

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EDUCATION

University of Michigan, Ann Arbor   *August 2018 - Present*
Ph.D in Statistics, Department of Statistics, Advisor Ambuj Tewari
Peking University, Beijing   *August 2014 - June 2018*
B.S. in Data Science, Yuanpei College

RESEARCH INTERESTS

Sample efficient reinforcement learning (RL); Transfer learning for RL; Climate change and air pollution.

EXPERIENCES

Research assistant advised by Dr. Ambuj Tewari
University of Michigan, Ann Arbor, MI   *May 2019 - Present*
Topic: Perturbation Algorithm on Reinforcement Learning.

- Proposed perturbation algorithm for reinforcement learning as a new randomized exploration method. The algorithm has low computational complexity and explicit randomness.

- Proved the first worse-case regret bound for methods without high probability of optimism on communicating Markov Decision Process setting.

Research assistant advised by Dr. Songxi Chen
Peking University, Beijing, China   *March 2016 - June 2018*
Topic: Statistical Analysis on Climate Change and Impact on Air Pollution

- Designed a hypothesis-testing framework to test climate change in North China on fine-gridded data over 40 years and analyzed its impacts on air quality.

- Used parallelization tools, such as MPI and OpenMP, to accelerate computation of the standard deviation estimation.

- Controlled false discovery rate to overcome the high dimension in gridded data. Found significant changes on wind speed and humidity and estimated a decreased effect on pollutant concentration.

Quantitative intern advised by Dr. Jian Guo
Deepx Asset Management, Beijing, China   *July 2017 - November 2017*
Topic: Trading Strategies on High Frequency Financial Market

- Collaborated with a team to build a trading and simulating system for high frequency financial market with C++ and Python.

- Applied linear regression, decision tree and neural network models on trading signal prediction with tick data (per 3 seconds). Found useful signals various future contracts.

PAPERS

Jiadong Guo, **Ziping Xu**, Long Xu, Jian Guo (under review). **StockNet: A Cross-market Stock Dataset for Machine Learning.** Submitted to AAAI 2019.

Ziping Xu, Song Xi Chen, Xiaoqing Wu (under review). **Meteorological Change and Impacts on Air Pollution - Results from North China.** Submitted to Journal of Geophysical Research.

Ziping Xu, Ambuj Tewari (2019). **Worst-Case Regret Bound for Perturbation Algorithm on Reinforcement Learning.** Accepted by NeurIPS 2019 Optimization Foundation for RL Workshop.

Liu Wenling, **Ziping Xu**, and Tianan Yang (2018). **Health effects of air pollution in China.** International journal of environmental research and public health 15.7 : 1471.

Shuyi Zhang, Bin Guo, Anlan Dong, Jing He, **Ziping Xu**, and Song Xi Chen (2017). **Cautionary Tales on Air-quality Improvement in Beijing.** 473. Proc. Royal Society A

PRESENTATIONS

How wind affects air pollution in Beijing?
IEEE: Pacific Visualization Symposium, Seoul, South Korea   *May 2017*

AWARDS

Lee Wai Wing Scholarship (2015) awarded for top 5% excellent academic performance .

PROGRAMMING SKILLS

Programming languages including Python, R, C++; Parallel computing; Unix/Linux; Tensorflow.