

Zhipeng Lou

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Employment

Assistant Professor, University of Pittsburgh, PA, USA, 2023 – present.

Postdoctoral Research Associate, Princeton University, NJ, USA, 2020 – 2023.

Advisor: Jianqing Fan, Department of Operations Research and Financial Engineering.

Education

Ph.D. in Statistics, The University of Chicago, IL, USA, 2015 – 2020.

Advisor: Wei Biao Wu, Department of Statistics.

Ph.D. Thesis: High Dimensional Inference Based on Quadratic Forms.

Ph.D. Candidate in Mathematics, Zhejiang University, Hangzhou, China, 2012 – 2015.

B.S. in Mathematics, Zhejiang University, Hangzhou, China, 2008 – 2012.

Research Interests

Statistical learning, ranking inference, high-dimensional statistical testing, robust inference, time series analysis, functional data analysis, survival analysis.

Publications and Preprints

Jianqing Fan, **Zhipeng Lou** and Mengxin Yu. Robust High-Dimensional Tuning Free Multiple Testing. *Accepted, Annals of Statistics*, 2023.

Zhipeng Lou, Wanrong Zhu and Wei Biao Wu. Beyond Sub-Gaussian Noises: Sharp Concentration Analysis for Stochastic Gradient Descent. *Journal of Machine Learning Research*, 23:Paper No. [46], 22, 2022.

Jianqing Fan, **Zhipeng Lou** and Mengxin Yu. Are Principal Component Regression and Sparse Regression Adequate? *In press, Journal of the American Statistical Association*, 2023.

Zhipeng Lou, Xianyang Zhang and Wei Biao Wu. High-Dimensional Analysis of Variance in Multivariate Linear Regression. *Biometrika*, 110(3): 777-797, 2023.

Jianqing Fan, **Zhipeng Lou**, Weichen Wang and Mengxin Yu. Ranking Inferences Based on the Top Choices of Multiway Comparisons. *Minor revision, Journal of the American Statistical Association*, 2023.

Jianqing Fan, Pierre Bayle and **Zhipeng Lou**. Communication-Efficient Distributed Estimation and Inference for Cox's Model. *Major revision, Journal of the American Statistical Association*, 2023.

Jianqing Fan, **Zhipeng Lou**, Weichen Wang and Mengxin Yu. Spectral Ranking Inferences based on General Multiway Comparisons. *Under review at Operations Research*, 2023.

Jiaqi Li, **Zhipeng Lou**, Stefan Richter and Wei Biao Wu. Asymptotic Theory for Constant Step Size Stochastic Gradient Descent. *Under review at IEEE Transactions on Information Theory*, 2023.

Wei Biao Wu, **Zhipeng Lou** and Yuefeng Han. Hypothesis Testing for High-Dimensional Data. *Handbook of Big Data Analytics*, Springer, 2018.

Zhipeng Lou and Wei Biao Wu. Simultaneous Inference for Mean Curves of Functional and Longitudinal Data: A Unified Theory. *Major revision submitted, Statistica Sinica*, 2022.

Zhipeng Lou and Wei Biao Wu. Simultaneous Inference of Quantiles in High Dimensions. *Invited session, Sankhya B*, 2023.

Zhipeng Lou and Wei Biao Wu. Portmanteau Test for High Dimensional White Noises. *Under review at Bernoulli*, 2023.

Manuscripts

Jianqing Fan, **Zhipeng Lou** and Danna Zhang. Test of Independence Based on the Generalized Distance Correlation. *Manuscript*, 2023.

Zhipeng Lou, Tobias Kley and Wei Biao Wu. Prediction Guarantee for High Dimensional Time Series, 2023+.

Zhipeng Lou and Wei Biao Wu. Simultaneous Inference for High Dimensional Mean Vectors. *arXiv preprint arXiv:1704.04806*, 2017.

Teaching Experience

Teaching at University of Pittsburgh

Intermediate Probability: Fall 2023

Teaching Assistant at the University of Chicago

Statistical Methods and Applications: Winter 2015

Introduction to Mathematical Probability: Spring 2016

Statistical Theory and Methods I: Autumn 2016

Analysis of Categorical Data: Winter 2017

Statistical Theory and Methods II: Winter 2018, Spring 2018

Numerical Linear Algebra: Autumn 2018

Optimization: Spring 2019

Time Dependent Data: Autumn 2019

Consulting Projects

Sample size of newborn babies in a clinical reasearch project. Nov. 2017.

Client: Ranjani Ananth. Comer Children's Hospital.

Consultants: Jing Yu (leader), Zhipeng Lou(co-leader), Elysa Strunin, Yuexi Wang.

Impacts of bone growth protein in stem cells. May. 2018.

Client: Yiwen Wang and Edwin L. Ferguson. Department of Molecular Genetics and Biology, University of Chicago.

Consultants: Zhipeng Lou (co-leader), Petr Panov (co-leader), Joonsuk Kang, Jiacheng Wang, Jihang Zhang.