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*Statistical Inference for High-Dimensional and Functional Data via Bootstrapping*

Wednesday, May 8th, 2024

2:20 PM

110 Frelinghuysen Road, Hill Center, Room 552

Zoom Meeting: Meeting ID: 969 0606 4706

Password: 745339

<https://rutgers.zoom.us/j/96906064706?pwd=ZklvbExpRVBjQ3c5dUhhYTFuR2RZrZz09>

Light refreshments will be served in Hill 452, 2:00 PM

**Abstract:** Statistical inference is of fundamental importance and yet challenging in high-dimensional and functional data analysis. In response to the challenge, a set of powerful bootstrap-based procedures are developed for high-dimensional and functional ANOVA, such as hypothesis testing for the mean function, coefficient function of the varying coefficient model, and slope function of the functional linear model. The validity and consistency of the proposed procedures are established, and convergence rates are derived. In particular, we uncover a theoretical distinction between FPCA-based estimation and inference for the slope function. The proposed procedures are shown to enjoy excellent numeric performance, especially when the sample size is limited while the signal is relatively weak.

**Bio:** Zhenhua Lin is currently a Presidential Young Professor in Department of Statistics and Data Science, National University of Singapore. Prior to this he was a postdoctoral fellow in UC Davis, and received his Ph.D. degree in statistics from University of Toronto. His research primarily focuses on non-Euclidean/high-dimensional/functional data analysis and statistics under non-statistical constraints, with papers published in various statistical journals including The Annals of Statistics, Journal of the American Statistical Association, Journal of the Royal Statistical Society (Series B), Biometrika, Biometrics and Journal of Computational and Graphical Statistics. He is currently a member of Young Researchers Committee of Bernoulli Society and serves as an associate editor in the editorial board of Bernoulli Journal.

