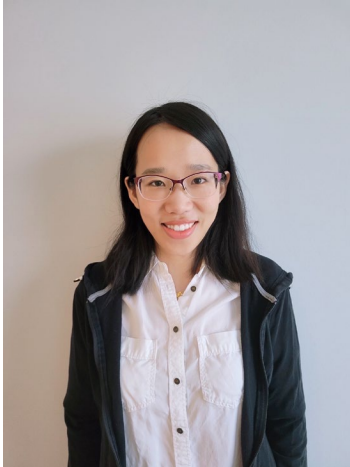


DEPARTMENT OF STATISTICS



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Statistical Inference for high-dimensional block-wise missing data

Wednesday, March 2, 2022
11:45 AM

Zoom Meeting: Meeting ID: 963 9005 8784
Password: 606979

<https://rutgers.zoom.us/j/96390058784?pwd=c3VGOFIvYUxRanV5Tk5kS2R0dTVsQT09>

Light refreshments will be served

Abstract: For multi-source data, blocks of variable information from certain sources are likely missing. Most existing methods for handling missing data do not take structures of block-wise missing data into consideration. In this talk, I will describe a Multiple Block-wise Imputation (MBI) approach, which incorporates imputations based on both complete and incomplete observations. Specifically, for a given missing pattern group, the imputations in MBI incorporate more samples from groups with fewer observed variables in addition to the group with complete observations. We propose to construct estimating equations based on all available information, and integrate all estimating functions to achieve efficient estimators. In addition, we propose a nearly unbiased estimator for each individual regression coefficient, which is asymptotically normally distributed under mild conditions. Based on these debiased estimators, asymptotically valid confidence intervals and statistical tests about each regression coefficient are constructed. Numerical studies and ADNI data application confirm that the proposed method outperforms existing methods under various missing mechanisms.

Bio: Fei is an Assistant Professor of Statistics at Purdue University. She got her PhD from UIUC and was a postdoc at University of Pennsylvania. Her research interests are data integration, missing data, mediation analysis, machine learning, and statistical genetics.

