

Dr Liuhua Peng

Lecturer in Statistics, University of Melbourne

liuhua.peng@unimelb.edu.au

Title:

Distributed Statistical Inference for Massive Data

Abstract:

This project studies distributed statistical inference for a general type of statistics that encompasses U-statistics and M-estimator in the context of massive data. When the data are stored on multiple platforms, it is usually expensive and slow to do data communication. To deal with this issue, we formulate the distributed statistics which can be computed distributively and hence reduces computational time significantly. We investigate properties of the distributed statistics from the perspective of mean square error of estimation and their asymptotic distributions. In addition, we propose two distributed bootstrap algorithms which are computationally effective and consistent theoretically. Applications of our approaches and numerical studies are provided to support them.