

中央研究院統計科學研究所

學術演講

講題：A semi-parametric multidimensional and longitudinal item response model with mixed data type

演講人：Prof. Mike KP So (蘇家培 教授)

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時間：2024-05-27(Mon) 10:00-11:00

地點：Auditorium, B1F, Institute of Statistical Science; The tea reception will be held at 09:40.

備註：Lecture in English. Online live streaming through Cisco Webex will be available.

Abstract

A semi-parametric multidimensional and longitudinal item response model with mixed data types is studied. The semi-parametric model consists of a non-parametric item characteristic curve and a parametric performance measurement. The combination of these two parts takes the balance between model flexibility and interpretability. The multidimensional model measures multiple features observed from the data. The longitudinal model captures the changes of respondents throughout the study. When the dataset is large, multiple types of data are often involved. The estimation process is also computationally inefficient. Variational Bayes searches for the best distribution from a pre-assigned family to approximate the complex posterior distribution. The aim is at an efficient solution while maintaining accuracy via variational Bayes. An application of this model is considered, and the performance on estimation with variational Bayes is demonstrated (joint work with Thomas WC Chan, Amanda MY Chu and Calvin KL Or).



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