

**The Hong Kong Polytechnic University
Department of Applied Mathematics**

Statistics and Data Science Online Colloquium Series

Identifiability and Estimation of Structured Latent Attribute Models

By

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Abstract

Structured Latent Attribute Models (SLAMs) are popular statistical tools for developing diagnostic-based assessments in education, psychology, and other social and behavioral sciences. SLAMs can be viewed as a family of restricted discrete latent variable models, which assume that multiple discrete latent attributes explain the dependence of observed variables in a highly structured fashion. Though widely used, such structured latent class models often suffer from nonidentifiability due to the models' discrete nature and complex restricted structure. The first part of this talk introduces our recent identifiability results on SLAMs by considering both strict and partial identifiability of the model parameters. The developed identifiability conditions only depend on the design matrix and are easily checkable, which provides useful practical guidelines for designing statistically valid diagnostic tests. The second part of the talk further discusses likelihood-based approaches to estimate the latent structures and the model parameters.



[Click to join \(Zoom\)](#)

Date: 19 April 2022 (Tuesday)

Time: 10:00-11:00 (Hong Kong Standard Time GMT +8)

Venue: Online Talk via Zoom (Meeting ID: 968 7389 3011)

Speaker: Dr. Gongjun Xu, University of Michigan

Host: Prof. Xingqiu Zhao, The Hong Kong Polytechnic University

Click to join:

<https://polyu.zoom.us/j/96873893011?pwd=djFWejV6S1c2R1pxM0RFVmZvZmhHZz09>

***** ALL ARE WELCOME *****

For enrolment, please send your name and email to wai-yan.moon@polyu.edu.hk on or before 18 April 2022