EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT COLLOQUIUM SERIES

Identifiability of Cognitive Diagnosis Models

Gongjun Xu, PhD
Department of Statistics and Psychology
University of Michigan

October 17, 2019 (Thursday)
10:00am - 11:30am
Runme Shaw Building Room 108, HKU

Abstract
Cognitive diagnosis models (CDMs) are popular statistical tools for obtaining finer-grained information from diagnostic assessments. CDMs can be viewed as restricted latent class models, with constraints on which subset of skills each item measures, and assumptions on how skills being measured interact in the item function. As many other latent variable models, CDMs often suffer from non-identifiability in practice. This talk will focus on the identifiability issue of CDMs, and present sufficient and necessary identifiability conditions that can be directly applied to most CDMs. From a practical perspective, the identifiability condition would provide a guideline for designing statistically valid and estimable cognitively diagnostic assessments. The proposed conditions and methods will be demonstrated with several applications and examples.

About the Speaker
Dr. Gongjun Xu is an assistant professor of Statistics and Psychology at the University of Michigan. He received his B.S. in Statistics from the University of Science and Technology of China in 2008, and his Ph.D. in Statistics from Columbia University in 2013. His research interests include latent variable models, psychometrics, cognitive diagnosis modeling, high-dimensional statistics, and semiparametric statistics. In 2019, he received an NSF CAREER Award, the International Chinese Statistical Association Outstanding Young Researcher Award, and the Bernoulli Society New Researcher Award. His research findings have been published in top journals, such as, Psychometrika, Annals of Statistics, Journal of the American Statistical Association, and British Journal of Mathematical and Statistical Psychology.

Everyone is welcome to attend!
If interested, please confirm your attendance by sending an email to xlqiu@hku.hk.