EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT COLLOQUIUM SERIES

Measuring Learning Outcome Using Response Accuracy and Response Time

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September 10, 2019 (Tuesday)
9:30am - 11:00am
Room 108, Runme Shaw Building, HKU

Abstract
In this talk, I will present a general modeling framework of response accuracy and response time that can track skill acquisition, and provide additional diagnostic information on the change in latent speed within a learning environment. This framework consists of (1) a dynamic response model that captures the response accuracy and the change in discrete latent attribute profiles as a function of factors such as practice, intervention effects, and other latent and observable covariates, and (2) a dynamic response time model that describes the change in the continuous response latency due to the change in the latent attribute profiles. A Bayesian estimation procedure is developed to calibrate the model parameters and measure the latent variables. The estimation algorithm is evaluated through several simulation studies under various conditions. The proposed models are applied to a real data set collected through a spatial rotation diagnostic assessment paired with learning tools.

About the Speaker
Dr. Shiyu Wang is an Assistant Professor in the Quantitative Methodology Program of the Department of Educational Psychology at the University of Georgia. She received her PhD degree in Statistics from University of Illinois at Urbana-Champaign. Her research interests include 1) developing innovative adaptive testing that can provide efficient individualized assessments and an examinee-friendly testing environment; 2) establishing statistical foundations for a family of models to provide guidelines for model estimation and selection; and 3) developing novel dynamic models that can measure and predict students’ learning outcomes based on various data sources. Dr. Wang received the 2019 Early Career Researcher Award from the International Association for Computerized Adaptive Testing. She is also a 2019 National Academy of Education/Spencer Post-Doctoral Fellow. Her research findings have been published in top journals such as the Journal of Educational Measurement, Applied Psychological Measurement, Psychometrika, and the 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.