



Webinar: Multivariate longitudinal data analysis using hidden Markov modeling

Professor Edward Hak-Sing Ip

Department of Biostatistics and Data Science
Wake Forest School of Medicine
Wake Forest University, USA

November 19, 2019 (Tuesday)
11:00 – 12:30

Chair: Dr Xue-Lan Qiu

Abstract:

This talk provides an overview of a statistical method – the hidden Markov model (HMM), for analyzing longitudinal multivariate data, including discrete and continuous responses. Originated in the engineering literature, the HMM has proved to be a powerful tool for many applications across different fields such as biological and social sciences. I will share my experience in both applying and expanding the HMM, within a social and behavioral science context. An example of an application of HMM to education is analyzing student performance data over time, where the collection of individual student item responses to a test at a specific time point is treated as multivariate data and driven by a “hidden” ability construct that cannot be directly measured. The emphasis of the talk will be on application. I will start with some basic models and go on to discuss some recent extensions for practical applications.

Registration:

https://hkuems1.hku.hk/hkuems/ec_hdetail.aspx?quest=Y&ueid=68431

An email showing the web link for this webinar will be sent to all registered participants from both rounds on November 18, 2019.

Enquiries: Office of Research, Faculty of Education, HKU
(Tel: 3917 5728)

About the speaker:

Edward Ip is a tenured Professor at the Department of Biostatistics and Data Science, Wake Forest School of Medicine, North Carolina, USA. A graduate of HKU (BSc), he was trained in both psychometrics (MEd) and statistics (PhD) at Stanford University. His methodological research interests focus on latent variable models including item response theory, and longitudinal data analysis including the hidden Markov model. His substantive areas of research cut across many fields in social and behavioral sciences, particularly on health-related subjects. Currently, Prof. Ip is Editor of the journal *Psychometrika* for its Application Overviews and Case Studies section, and Associate Editor of the *Journal of Educational and Behavioral Statistics*, and the journal *Quality of Life Research*. He has published over 200 journal articles and book chapters. His publications appear in journals including the *Journal of American Statistical Association*, and *New England Journal of Medicine*. He is a member of the Technical Advisory Committee of the OECD-sponsored Programme for the International Assessment of Adult Competencies (PIAAC), an adult literacy survey of more than 40 countries. Throughout his career as a research scholar, Prof. Ip has received continuous funding as PI from multiple agencies including NIH, NSF, and the US Department of Education.

