

**MACQUARIE UNIVERSITY
STATISTICS DEPARTMENT SEMINAR**

Speaker: A/Prof Xinyuan Song, Department of Statistics, Chinese University of Hong Kong

Date: Tuesday 28 April 2015, Time 2pm

Venue: E4A523

Title: Statistics analysis of a generalized hidden Markov model

Abstract:

This research considers a generalized hidden Markov model to investigate the dynamic patterns and possible heterogeneity of the associations and interrelationships among variables of interest in multivariate longitudinal data analysis. The model consists of a conditional latent variable model and a mixed hidden transition model to simultaneously address different types of dependencies within the data. The maximum likelihood procedure, coupled with the expectation-maximization algorithm and efficient sampling schemes, is developed to conduct parameter estimation. The issues of model selection and hypothesis testing are also addressed. The empirical performance of the proposed methodology is examined via simulation studies. A real data example is reported for illustration.

Enquiries: Dr Georgy Sofronov Email: georgy.sofronov@mq.edu.au