NATIONAL UNIVERSITY OF SINGAPORE

School of Computing

I S S E M I N A R

Title: **Control Variables and Hypothesis Testing by Regression Methods**

Speaker: Assoc Prof Huang Ke-Wei, NUS Department of Information Systems

Date/Time: 10 March 2017, Friday, 10:30 AM to 12:00 PM

Venue: Executive Classroom, COM2-04-02

Chaired by: Dr Faik, Isam, Assistant Professor, School of Computing
(faik@comp.nus.edu.sg)

ABSTRACT:

This research-in-progress aims at investigating a new research question regarding how to eliminate Researchers' Bias when conducting regression analyses for hypothesis testing. In almost all regression studies, researchers only report the results of model specifications with few combinations of self-selected control variables in each published paper. When we compare across published papers that examine similar research questions based on similar datasets, it is not rare to observe inconsistent significance results partly because of the fact that researchers use different sets of control variables. One naive solution is to run regressions with all combinations of available control variables. There are two immediate challenges of this approach. First, this method is not feasible when the number of variables becomes larger (e.g., 1 million regressions are needed for 20 control variables). Second, when we obtain more than thousands of regression results, summarizing results intelligently to produce informative answers seems like a new research problem in the literature. This talk will explain several potential solutions of the first challenge and will also compare the performance of different proposed methods when we apply on replicating existing studies. For summarizing results (the second problem), several rule-based algorithms are applied to solve this new problem. The overall results will be compared with existing results published in the original paper, and results from traditional features-selection methods such as stepwise regression, ridge regression, and PCA regression. Future research directions and potential contribution will be discussed toward the end of this seminar.

BIODATA:

Dr. Ke-Wei Huang is an Associate Professor in the Department of Information Systems at the National University of Singapore (NUS). Dr. Huang joined NUS in July 2007. He received his Ph.D. (2007), M.Phil. (2005), and M.Sc. (2002) degrees in Information Systems from the Stern School of Business at New York University, and his M.B.A. in Finance (1997) and B.Sc. in Electrical Engineering (1995) from National Taiwan University.

Dr. Huang's research interests are in the economics of information systems and data mining for financial applications. Currently, he focuses on various topics of pricing digital goods, labor economics of IT professionals, and data mining or econometrics issues for topics in accounting or finance.