## 國立中山大學應用數學系 學術演講

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時間:2015/05/14(星期四)15:30~17:30
地點:理學院四樓理 SC 4009-1 室
茶會:15:00 於理 SC 4010 室 (系辦公室)

## A Review of Existing Methods of Learning and An Introduction of A novel Partition-Based Approach

We first review and compare methods that are currently available from both statistical and machine learning tools box. We discuss their strengths as well as weakness and point out that, in order to meet current and future challenges arising from current/future big data, new capable methods are called for. To meet these needs we response by introducing a novel interaction-partition-based strategy.

## A method of Partitions: Discovering Influential Variables sets

We consider a computer intensive approach (Partition Retention (PR), Chernoff, Lo and Zheng (09)), based on an earlier method (Lo and Zheng (2002) for detecting which, of many potential explanatory variables, have an influence on a dependent variable Y. This approach is suited to detect influential variables in groups, where causal effects depend on the confluence of values of several variables. It has the advantage of avoiding a difficult direct analysis, involving possibly thousands of variables, guided by a measure of influence I. The main objective is to discover the influential variables, rather than to measure their effects. Once they are detected, the problem of dealing with a much smaller group of influential variables should be vulnerable to standard analysis. We are confining our attention to locating a few needles in a haystack.

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