Project 1:
A framework to model complementary organisational mechanisms: An application on studying Information Technology Business Value

In order to make effective use of IT, managers require a body of knowledge and a set of evidence-based practices that can enable them to make the correct IT resource allocation decisions relating to the appropriate mix of IT inputs, their interactions, and the complementary investments needed in organisational processes. The significance of the research aims to provide such finely-grained and focussed guidelines for deciding on candidate technologies and for developing effective organisational strategies. The analytical approach developed in this project can be used to provide deeper insights into the interrelatedness of multiple factors beyond the extant IT business value research and also potentially to a wide range of disciplines in explaining complex interactions among multiple factors.

Supervisor: Simon Poon (School of IT)

Project 2:
Data Mining of Interactions in TCM Prescription

Traditional Chinese Medicine (TCM) is conceptually different from western medicine. Instead of having drugs that are independent and non-interfering as in the western world, the prescription in TCM is a collection of herbs with the desire healing effect coming from the combination and interaction of the herbs. In fact, TCM has some peculiars that a herb can be toxic if used alone, but it is because of the inclusion of another herb that is able to neutralize the toxicity. There are simply many interesting interacting phenomenon in TCM.

One of the aims of this project is to develop a good understanding of the diverse interactions and interrelatedness among the herbs and how they impact on certain diseases. Another goal is to determine how much the performance has changed under the contingency (conditions) of other herbs (and/or other factors).

Understanding these complex relationships is central for a range of academic disciplines, and TCM is just an example, other areas include social and economic analysis. The main challenge of this project is to develop an appropriate research strategy to understand relationships among interacting variables and to derive suitable analytical model to assess of the strength of interactions. The project may include the development of a new data mining algorithm as well as to discover interaction patterns from given datasets.

Supervisors: Simon Poon and Josiah Poon(School of IT)