Mitigate Delays and Unfairness in Appointment Systems

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Date : 28 May 2013 (Tuesday)  
Time : 2.00pm – 3.00pm  
Venue : MAS Executive Classroom 2, MAS-03-07  
School of Physical and Mathematical Sciences

In this presentation, we discuss a general scheduling model, which is applicable in outpatient clinics to design consultation slots and operating theatres to deliver an efficient and smooth schedule. We consider a system where heterogeneous patients are sequenced and scheduled for medical care. As care times are uncertain, the aim is to mitigate the unpleasantness experienced by patients when their waiting times or delays exceed acceptable thresholds, and by doctors when they work overtime. We also address fairness concerning balance of service levels among patients. In evaluating uncertain delays, we propose the Delay Unpleasantness Measure (DUM), which takes into account the frequency and intensity of delays above a threshold. We also introduce the concept of lexicographic min-max fairness to design scheduling systems from the perspective of the worst-off participants. The performance measure we established is consistent with hospitals' key performance indicators in providing patients service commitments.

This is joint work with Professor Melvyn Sim.

**Speaker Biography**

Jin Qi is a 5th year Ph.D. student in the Department of Decision Sciences, NUS Business School. She holds a Master’s degree in Management Science and a Bachelor’s degree in Mechanical Engineering from Tsinghua University. Jin Qi is broadly interested in the analytics of services systems, with the goals of eliciting operational insights and providing solutions for supporting decision-making in practice. She is currently focusing on healthcare operations, and has collaborated with several hospitals in Singapore.

Host: Division of Mathematical Sciences, School of Physical and Mathematical Sciences