

# IMI PHD INTERDISCIPLINARY SEMINAR

**DATE:** 29 October 2013, Tuesday

**TIME:** 11:30 am – 12:30 pm

**VENUE:** IMI Seminar Room, Research Techno Plaza, XFrontiers, Level 03-01  
50 Nanyang Drive, Singapore 637553

\*Lunch will be served



**DONG Lu**  
PhD Student  
IMI/SCE/EEE

## *Saliency Detection in Computer Rendered Images Based on Object-level Contrast*

Saliency arises from contrast; for example, a red object surrounded by green objects is highly salient. Detecting salient objects in rendered images is useful in various applications, such as mesh simplification, rendering acceleration and quality assessment etc.

We propose a method to detect visually salient objects in computer synthesized images from 3D meshes. Different from existing detection methods on graphic saliency, which compute saliency based on pixel-level contrast, the proposed method computes saliency by measuring object-level contrast of each object to the other objects in a rendered image. We also evaluate the proposed method on a data set of computer rendered images.



**GUO Guibing**  
PhD Student  
IMI/SCE

## *Leveraging Multiviews of Trust and Similarity to Enhance Clustering-based Recommender Systems*

Although demonstrated to be efficient and scalable to large-scale data sets, clustering-based recommender systems suffer from relatively low accuracy and coverage. To address these issues, we develop a multiview clustering method through which users are iteratively clustered from the views of both rating patterns and social trust relationships. To accommodate users who appear in two different clusters simultaneously, we employ a support vector regression model to determine a prediction for a given item, based on user-, item- and prediction-related features. To accommodate (cold) users who cannot be clustered due to insufficient data, we propose a probabilistic method to derive a prediction from the views of both ratings and trust relationships. Experimental results on three real-world data sets demonstrate that our approach can effectively improve both the accuracy and coverage of recommendations, moving clustering-based recommender systems closer towards practical use.



**TAN Jiat Chow**  
PhD Student  
WKWSC/I/HSS

## *Towards an Integrated Model of Problematic Consumption: The Role of Online Shopping, Self-Regulation, and Susceptibility to Advertising*

There is currently a lack of understanding of problematic consumption which is manifested by consumers' preoccupation with shopping, their lack of control over their consumption behavior that can have negative consequences on their psychosocial health and relationships. Through a series of investigations, the present research takes a blended, interdisciplinary approach that is designed to tap on the strengths of the disciplines of consumer research, psychology and communication to advance an integrated theoretical model that facilitates a richer understanding of the mechanisms and factors in problematic consumption across a variety of different contexts such as advertising and online shopping.



**LI Qiaohong**  
PhD Student  
IMI/SCE

## *Study of Combined Acoustic Features for Speech Quality Assessment*

Multimedia quality assessment is essential to guarantee high-quality and reliable service to human users. As subjective quality assessment is not always possible due to its limitations (such as time-consuming, costs, unsuitability for automation and real-time applications), objective quality assessment models to simulate the average human subject's performance have provided a good way to monitor and optimize the multimedia communication network. The framework of objective speech quality assessment models has two important parts: feature extraction and feature pooling, which are corresponding to the conversion of the perceived speech signal into auditory nerve excitations for the brain and cognitive processing in the brain of human subjective speech quality assessment process. We have studied and compared several combinations of auditory perception features for the speech quality assessment.