IMI RESEARCH SEMINAR

DATE: 22 July 2014, Tuesday
TIME: 11:00 am – 12:30 pm
VENUE: IMI Seminar Room, Research Techno Plaza, XFrontiers, Level 03-01
50 Nanyang Drive, Singapore 637553
*Lunch will be served

Dr LAFFONT Pierre-Yves
Visiting Researcher,
ETH Zurich

Exploring and Editing Scene Appearance

The appearance of outdoor scenes changes dramatically with lighting, weather, time of day, and season. Specific conditions can be hard to capture because many scene properties change quickly over time. In this talk, we learn to recognize specific scene properties in photographs, using a large annotated webcam database. Our approach enables high-level attribute-guided image manipulation by transferring scene appearance across images. We then focus on extracting and manipulating the lighting in photographs. Intrinsic image decomposition separates a photograph into independent layers: reflectance, which represents the material color, and illumination, which encodes the effect of lighting at each pixel. We tackle this ill-posed problem by leveraging additional information provided by multiple views of the scene.
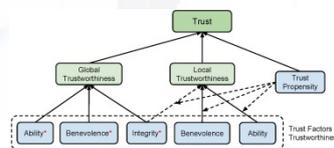
GUO Guibing
PhD Student,
SCE / IMI

ETAF: An Extended Trust Antecedents Framework for Trust Prediction

Trust is one source of information that has been widely adopted to personalize online services for users, such as in product recommendations. However, trust information is usually very sparse or unavailable for most online systems. To narrow this gap, we propose a principled approach that predicts implicit trust from users' interactions, by extending a well-known trust antecedents framework. Specifically, we consider both local and global trustworthiness of target users, and form a personalized trust metric by further taking into account the active user's propensity to trust. Experimental results on two real-world datasets show that our approach works better than contemporary counterparts in terms of trust ranking performance when direct user interactions are limited.

TAN Jiat Chow
PhD Student,
WKWSCI / HSS

Re-examining The Generalized Problematic Internet Use Model: A Test Case For The Application Of Bayesian SEM To Communication Research

Bayesian analysis is fast gaining popularity among social science researchers. With the intent to encourage its use among communication researchers, the current study provides a concise and accessible introduction of this up-and-coming method, and further illustrates how straightforward it is to apply Bayesian analysis, using a structural equation modeling (SEM) framework within computer-mediated communication. To this end, this study presents a real-data analysis of the cognitive-behavioral model of generalized problematic Internet use as a test case for demonstrating the applicability of Bayesian analysis. Finally, this study ends with a discussion of the potential benefits and caveats of using Bayesian analysis, and suggests some guidelines on how to report its results in the context of communication research.

LI Qiaohong
PhD Student,
SCE / IMI

Non-intrusive Speech Quality Assessment Algorithm Based on Spectro-temporal Analysis

Non-intrusive speech quality assessment methods are preferable in real-time applications, as the original speech signals are not always available for comparision in practical applications. We propose to learn a non-intrusive quality assessment metric for enhanced speech signals. High-dimension spectro-temporal features are extracted by the Gabor filter bank for speech signals. To reduce the high-dimension features, we use PCA (Principal Component Analysis) to process these features. After obtaining the feature vector from audio signals, Support Vector Regression (SVR) is used to learn the metric for quality evaluation of enhanced speech signals. Experimental results on NOIZEUS dataset demonstrate that proposed non-intrusive quality assessment metric by using spectro-temporal features can obtain better performance for enhanced speech signals.

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