

IMI RESEARCH SEMINAR

DATE: 13 April 2016, Wednesday

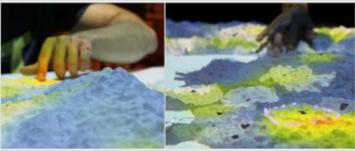
TIME: 11:00 am – 12:30 pm

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

*Lunch will be served

11.00am – 11.45am

Incorporating Tabletop Visual Analytics into the Decision-making Process: A Case Study of Retail Banking



Prof Selim BALCISOY – Sabanci University, Istanbul, Turkey

The large-scale use of office tools and statistical analysis applications indicates that they have sufficed well for some of the everyday tasks in our work cycles such as analysis, presentation, reporting, and decision-making. Nevertheless, they were designed in an era when business data was not big and complex enough. The ever growing avalanche of the data that we collect for our businesses compels us to find new means of understanding, sharing, and reporting the underlying ideas, and of making decisions for the future. We implemented a tabletop hybrid visual analytics system comprised of projection and physical visualization with the aim of supporting these tasks better by making the data physically available. We conducted a case study with an analysis team of a nationwide bank and completed a series of observations and interviews during their data analysis and decision-making sessions. Our study revealed that the hybrid visual analytics system approach promotes idea sharing and the contribution of all members of the group during the presentation sessions. This approach also seems to transform the common one-way structure of the communication in the presentation sessions into an alternative structure that encourages everyone to take the floor. Research questions that will be investigated in future work are also discussed.

Prof Selim BALCISOY's Bio

Dr Selim Balcisoy received his PhD on Computer Science in 2001 from Swiss Federal Institute of Technology, Lausanne (EPFL). Between 2001 and 2004 he was Senior Research Engineer at Nokia Research Center Dallas. Dr. Balcisoy co-authored over 60 publications and has been granted with one U.S. patent. His research interests are augmented reality, data visualization and cultural heritage. He is an Associated Professor at Sabanci University, Istanbul since 2004 and founded VisioThink, a spatial business intelligence company in 2006.

11.45am – 12.00pm

Social Context Cognition Crowd-Sourcing and Semi- Automatic Parametrization



This research aims to develop elements of a cognitive-affective architecture for believable agents capable of generating complex social behavior for various applications. In this presentation, extension of my past social context cognition model (SCP) with an automatic method of its parametrization is discussed.

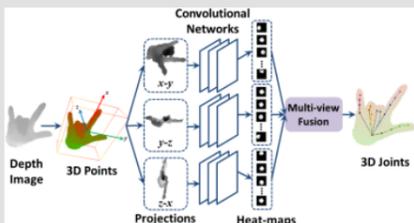
About Jaroslaw Slawomir KOCHANOWICZ – PhD Student, IMI & SCE

Jaroslaw Kochanowicz is a Ph.D student at the School of Computer Engineering and the Institute of Media Innovation, Nanyang Technological University, Singapore. He studied Computer Science and Mathematics at the Jagiellonian University, Cracow, Poland and Artificial Intelligence at the Vrije University, Amsterdam, Holland and Katholieke Universiteit, Leuven, Belgium. He received a Master Degree in Computer Science in 2009, from the Institute of Computer Science, Jagiellonian University, Cracow. His fields of interest include social-cognitive modeling and simulation and formalization of human-like irrationality of individuals and groups including investigation of its types, sources and implications.

His Supervisor is Assoc Prof Tan Ah Hwee, SCE and Co-Supervisor is Prof Daniel THALMANN, IMI.

12.00pm – 12.15pm

Robust 3D Hand Pose Estimation in One Depth Image: from Single-View CNN to Multi-View CNNs



Articulated hand pose estimation plays an important role in human-computer interaction. Despite the recent progress, the accuracy of up-to-date methods is still not satisfactory, partially due to the difficulty of embedded high-dimensional and non-linear regression problem. Different from the existing discriminative methods that regress for the hand pose with a single depth image, we propose to first project the query depth image onto 3 orthogonal planes and utilize these multi-view projections to regress for 2D heat-maps which estimate the joint positions on each plane. These multi-view heat-maps are then fused to produce final 3D hand pose estimation with learned pose priors. Experiments show that the proposed method largely outperforms state-of-the-arts on a challenging dataset.

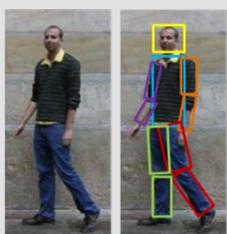
About GE Lihao - PhD Student, IMI & IGS

Lihao is currently pursuing the PhD degree at Nanyang Technological University. He received the M.E. degree in 2014 in School of Automation from Southeast University, Nanjing, China; and the B.E. degree in 2011 in College of Automation Engineering from Nanjing University of Aeronautics and Astronautics, Nanjing, China. His research interests include computer vision, machine learning, virtual and augmented reality, and hand/human pose estimation.

His Supervisor is Assoc Prof YUAN Junsong, EEE and Co-Supervisor is Prof Daniel THALMANN, IMI.

12.15pm – 12.30pm

Part-based Detection and Pose Estimation



Human detection and pose estimation is an important task in computer vision and has wide range of applications in the area of surveillance, control and analysis. This is a challenging problem because of the high degree of freedom in an articulated kinematic structure, variations in appearance and arbitrary viewpoints. For parts detection, we construct HOG features for each body part and train the detector using a SVM classifier. Our pose estimation work builds upon the pictorial structure model which represent human pose using both the appearance of body parts as well as their relative positions.

About LEONG Mei Chee - PhD Student, IMI & IGS

Mei Chee is currently pursuing his PhD degree at Nanyang Technological University. She received the B. Eng degree in Manufacturing Engineering from National University of Malaysia and the M. Sc in Digital Media Technology from Nanyang Technological University. Her research interests: computer vision, 3D reconstruction, and machine learning.

Her Supervisor is Assoc Prof LEE Yong Tsui, MAE and Co-Supervisor is Assoc Prof LIN Feng, SCE.