

Paradigm Shifts in Modern ICT Era and ICT-Enabled Web Services

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Time: January 3 (Tuesday) 10-11:30am

Place: Small Report Hall, 1st floor of FIT

Information and communication technologies (ICT) have become more mature after its development for more than half a century. We are in a new era in which ICT research has shifted its focus from *technology development* to *novel applications*. For example, digital technologies have been widely applied to speech, audio, video and graphics in various commercial applications today. Furthermore, the availability of the broadband wired/wireless Internet infrastructure and the cloud computing facilities has changed the way of web-based services. This lecture will address the following four major paradigm shifts in this modern IT era:

- From the analog implementation to the digital implementation
- From PC-centric to cloud/network-centric
- From one-way broadcasting to two-way interaction
- From HW/SW/infra-structure provision to contents and value-added services

Driven by the broadband network and cloud computing infrastructure, ICT-enabled web services have become a phenomenon. Examples of them include: YouTube, Google Map, Wikipedia, Facebook, etc. Several common features of the new web services will be discussed. These services provide a scalable platform that allows a large number of users to participate in content creation and interact with each other. Each site is essentially a large database as well as a community. The success of these services lies in a workable business model such as on-line advertisement. More and more advertisements from the traditional media such as newspaper and audio/video broadcast programs are moving to the web-based advertisement due to its efficiency. Finally, the lecture will provide an outlook to future business opportunities and R&D directions.

Biography of Dr. C.-C. Jay Kuo

Dr. C.-C. Jay Kuo received the Ph.D. degrees from the Massachusetts Institute of Technology in 1987. He is now with the University of Southern California (USC) as Director of Signal and Image Processing Institute and Professor of EE, CS and Mathematics. His research interests are in the areas of digital media processing, multimedia compression, communication and networking technologies, and embedded multimedia system design. Dr. Kuo is Editor-in-Chief for the Journal of Visual Communication and Image Representation, and has served as Editor for 10 other international journals. Dr. Kuo received the National Science Foundation Young Investigator Award (NYI) and Presidential Faculty Fellow (PFF) Award in 1992 and 1993, respectively. He was an IEEE Signal Processing Society Distinguished Lecturer in 2006, and the recipient of the Electronic Imaging Scientist of the Year Award in 2010 and the holder of the 2010-2011 Fulbright-Nokia Distinguished Chair in Information and Communications Technologies. Dr. Kuo is a Fellow of AAAS, IEEE and SPIE. Dr. Kuo has guided 108 students to their Ph.D. degrees and supervised 23 postdoctoral research fellows. Currently, his research group at USC consists of around 30 Ph.D. students (see website <http://viola.usc.edu>), which is the largest academic research group in multimedia technologies. He is a co-author of about 200 journal papers, 830 conference papers and 10 books.

