

Newsletter material from IEEE Taipei Section is attached

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Chair, Taipei Section 2012

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**Future Digital Video Workshop**

**(by IEEE Signal Processing Society Taipei Chapter & IEEE Consumer Electronics Society Taipei Chapter)**

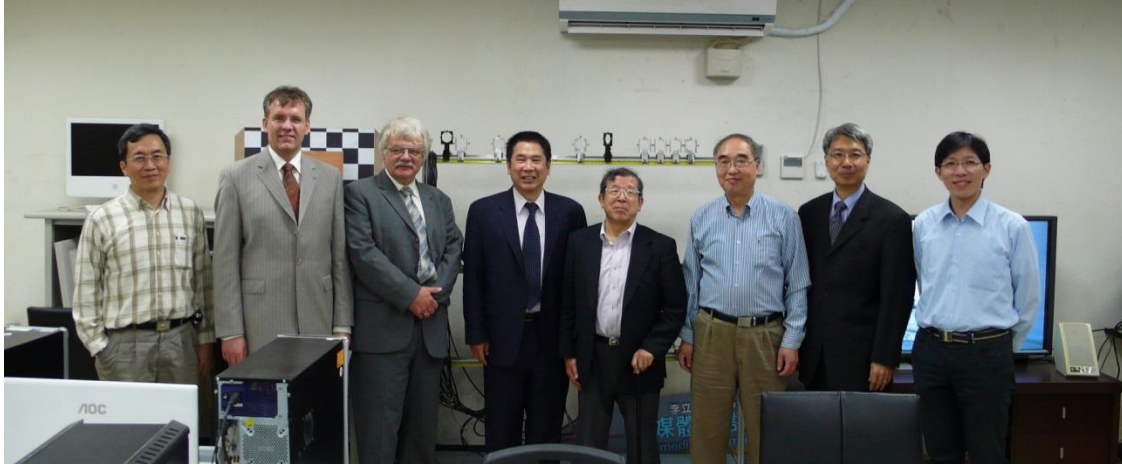
**(Date: 2011.11.10)**

The Future Digital Video Workshop was held at National Chaio Tung University (NCTU), Hsinchu, Taiwan, on 10 November 2011. It was cordially hosted by the Electrical and Computer Engineering (ECE) and Computer Science (CS) Colleges, NCTU, with sponsorships from the Center for Information and Communications Technology, NCTU, the National Science Council, Taiwan, the IEEE Consumer Electronics Society Taipei Chapter and the IEEE Signal Processing Society Taipei Chapter. The organizing committee was composed of Prof. Hsueh-Ming Hang (EE Dept; Geneal Chair), Prof. Wen-Hsiao Peng (CS Dept; Program Chair) and Prof. Tian-Sheuan, Chang (EE Dept; Program Chair). The program featured presentations from world-leading scholars in the field of Digital Video Technology with a primary group focus on the recent advances in video processing, coding and applications, followed by a panel discussion session, in which the attendees of the workshop participated in a lively discussion about the future prospects of video coding and the role of academic people in standard developments. The event turned out to be very successful, attracting more than 200+ attendees from both academia and industry around Taiwan.

The workshop commenced at 9am with welcome addresses given by Prof. Han-Ping David Shieh, the Vice President of NCTU, and Prof. Bao-Shuh Paul Lin, the Director of the Center for Information and Communications Technology, NCTU. This in turn started the morning session, during which Prof. C.-C. Jay Kuo, University of Southern California, United States, first spent one hour or so introducing a machine learning approach to visual information processing. He showcased the benefits of using machine learning techniques in developing quality metrics for better quantifying human perception of image quality. The program then continued with the speech by Prof. Masayuki Tanimoto, Nagoya University, Japan, who overviewed the history, current status, and future development of Free-Viewpoint Television (FTV). His video demos showing fully functional FTV systems were very impressive and well-received.

This 3D video theme carried over to the afternoon session, in which Dr. Huifang Sun, Mitsubishi Electric Research Laboratory, United States, reported on the recent advances of the upcoming ISO/IEC MPEG and ITU-T VCEG standards, such as 3D Video Coding (3DVC) and High-Efficiency Video Coding (HEVC). Next, Prof. Jörn Ostermann, Leibniz Universität Hannover, Germany presented a video analysis technique for the integration of virtual objects into natural scenes, which is a desirable tool for editing and creating video content, especially movie content. The audiences were impressed by his colorful demos. The program concluded with panel discussion, during which the audiences joined the speakers in an attempt to explore and identify resech opportunities in future digital video technologies. The discussion was initiated by the short presentation from Prof. Marek Domanski, Poznan University of Technology, Poland.

After the workshop, the speakers met with several faculty members at NCTU, including Prof. Suh-Yin Lee, CS Dept, and Prof. Sheng-Jyh Wang, EE Dept., and others. They described their research work to visitors. The meeting ended with a lab visit at Prof. Hang's laboratory, where the following group picture was taken. Dr. Tihao Chiang, Chairs of IEEE Signal Processing Society Taipei Chapter and IEEE Consumer Electronics Society Taipei Chapter, hosted the dinner in the evening.



Lab Visit after the Workshop: all speakers and hosts. From Left: Sheng-Jyh Wang, Jörn Ostermann, Marek Domanski, Jay Kuo, Masayuki Tanimoto, Huifang Sun, Hsueh-Ming Hang, Wen-Hsiao Peng.

#### **Invited Talk:**

#### **1. Protecting Information Systems from Insider Threats – Concepts and Issues**

#### **2. Securing Data in the Cloud - Challenges and Research Directions**

**(by IEEE Reliability Society Taipei/ Tainan Chapter)**

**(Date: 2011.11.21)**

In the past, most of the information security researches paid much attention to outsider threats. However in this talk, Prof. Bertino pointed out that threats could come from an insider, and it is equally as important as to the threats that came from outsiders. Recent surveys pointed out that the number of insider attacks are growing rapidly, and it has become a difficult task for detection/prevention mechanisms to detect/prevent such threats. To protect a system from insider attacks, a combination of security mechanisms are needed to achieve a good result. Those security mechanisms include access control, anomaly detection, authentication protocols, etc. Prof. Bertino also mentioned about security policy issues, it is considered as one of the challenging issues in information security domain. Policy issues are involved in many applications. For instance, database, IDS, etc. There are many challenges to construct a system that has security policy implemented. For example, design a flexible configuration mechanism to comply with security policies for non-information security background personals, the design of profiling and its granularity level to verify the security level of the policies, etc. Overall, Prof. Bertino has introduced a challenging topic and possible solutions to stimulate our researches in insider threats domain.

In the second session, Prof. Bertino talked about security issues in cloud computing environment. Cloud computing moves many resources into cloud. In which, it provides a new model for computing and data storage. However, in cloud computing environment, there are more risks involved in

privacy and security area. For cloud services, the requirement of appropriate authentication and access control mechanism are the basis. Additionally, user privacy is also important for cloud computing environment. It is not an easy task to satisfy all of the aforementioned requirements at the same time. Prof. Bertino's research introduced an elegant solution to protect user privacy while maintain user identify in the same time. This is an important issue in cloud computing environment since data and computing resources are moved from trusted private storage to a storage location that is shared by different users from different backgrounds. This technology trend introduces new information security and privacy issues over the already existed issues. Moreover, the physical storage location is a new issue that is introduced by cloud computing. Personal data in the cloud may be broken into parts and distributed around different storage locations; therefore, it is difficult to implement information security address this matter. Besides the technical challenges, in order to comply with the laws and policies in different countries, an incomplete information security scheme may pose potential threats of data leakage. Because cloud computing is the current trend and the future, the issues pointed out by Prof. Bertino in this speak session are worth awhile to take a note of.

### **The 19th National Conference on Fuzzy Theory and Its Applications**

**(by IEEE CIS Taipei Chapter)**

**(Date: 2011.11.18~19)**

The 19th National Conference on Fuzzy theory and its Applications was held at National Formosa University from 18th to 19th November 2011. The received 220 submissions, after the suggestions of review committee, 175 papers were accepted to be presented at the conference. After grand opening ceremony, Professor Kazuo Tanaka who is an IEEE Senior Member gave a keynote speech titled "A Unified Fuzzy Model-Based Framework for Nonlinear Control of Mechanical Systems: From Backing-up of Truck-Trailers to Tracking Control of Flying Vehicles". The first paper presentation session started after this wonderful speech and a brief tea break. The first presentation session consisted of presentations by Prof. Shun-Feng Su, Prof. Tzung-Pei Hong, Prof. Yo-Ping Huang, Prof. Chia-Feng Juang, Prof. Tzue-Hseng S. Li, Prof. Ching-Chih Tsai, Prof. Jyh-Horng Chou, and other 8 Professors. At the end of the first presentation session, best PhD and Master papers were awarded.

During the second day of the conference, Professor Tsu-Tian Lee, IEEE Fellow, served as first the keynote speaker and enlightened the attendants with the talk titled "Some Research Results in Intelligent Transportation Systems". In this talk, Professor Lee presented his research results on intelligent transportation systems. Later in the afternoon, the second keynote speaker, Professor Gwo-Hshiung Tzeng, IEEE Fellow, talked about "New Frontier of Hybrid Fuzzy MCDM Model for Improving and Creating the Best Systems in Applications". The second and the third paper presentation sessions were chaired by Prof. Wen-June Wang, Prof. Chang-Shing Lee, Prof. Chiang-Ju Chien, Prof. Yeong-Jeu Sun, and 20 other professors respectively.

## **The 16th national conference on Grey system theory and its applications**

**(by IEEE CIS Taipei Chapter)**

**(Date: 2011.12.10)**

The 16th national conference on Grey system theory and its applications (GSA 2011) was held at I-Shou University, Guan-Yin Mountain, on December 10, 2011. The conference gathered more than 100 researchers and experts in grey theory and related research areas. They presented and shared fruitful research results. The research results include system analysis, model building and simulation, forecast and decision, grey system theory and their various actual applications on uncertainty and service science so on.

The opening ceremony was hosted by Prof. Yo-Ping Huang, President of CGSA. In the keynote speech of the general assembly, Prof. Zhang Gongxiong of Department of business administration, National Pingtung University of Science and Technology, talked about the topic on the application of grey theory in investment. In his speech, Professor Zhang mentioned that grey theory was introduced in Taiwan since 1996, and it was mainly applied to engineering sector. So, most of researchers in management are not familiar with the methodology. In the field of management and finance, the grey theory is just like a new born baby whose potential is still waiting to be explored. In his lecture, he presented the research result about his specialty on the topic of investment portfolio. The entire speech is welcomed by the audience and has impressed every participant.

Paper presentation sessions were held in the afternoon. The accepted papers were peer reviewed by two anonymous reviewers. There were 54 paper accepted and presented in the conference. These papers could be categorized into three main areas: grey model, grey relational analysis and grey theory application. In summary, these papers were applied to more than ten fields, including electrical engineering, mechanical engineering, management, design, language, energy, marketing, education, financial, entertainment, etc.

In order to encourage scholars and researchers submitting their research outcome, the conference set Best Paper Award. Through a rigorous review process, six best papers were selected and awarded in the opening ceremony. The winners were honored by the president of I-Shou University. Also, the winners of the annual best thesis award, set by the Grey System Association to encourage students in master and Ph.D. programs, were also honored in the conference by Professor Huang. All participants enjoyed the whole meeting.