## Program of Keynote Speeches

**Date: Wednesday, 12 Dec. 2012**
**Room: 2F A.B Lecture Hall**
**Time: 09:30~10:30 am**

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Chair: **Prof. Sheng-Lung Peng**, National Dong Hwa University, Taiwan
Speaker: **Prof. Fedor V. Fomin**, University of Bergen, Norway
Title: Kernelization Algorithms
Abstract: Preprocessing or data reductions means reducing the input to something simpler by solving an easy part of the input and this is the type of algorithms used in almost every application. In spite of wide practical applications of preprocessing, a systematic theoretical study of such algorithms remains elusive. The framework of parameterized complexity can be used as an approach to analyse preprocessing algorithms. Input to parameterized algorithms include a parameter (in addition to the input) which is likely to be small, and this resulted in a study of preprocessing algorithms that reduce the size of the input to a pure function of the parameter(independent ofthe input size). Such type of preprocessing algorithms are called kernelization algorithms. In the talk we discuss some classical and new trends in the design of kernelization algorithms.

**Time: 10:30~11:30 am**

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Chair: **Prof. Ruay-Shiung Chang**, National Dong Hwa University, Taiwan
Speaker: **Mr. Michael Wang**, Enterprise Architect, Oracle, USA
Title: A Mobile, Cloud, and Social-enabled Future
Abstract: During the presentation, I would like to share with all the audience the observations, factors driving new innovations that may change how people interact with technologies and how organizations operate, and update what Oracle is undertaking for those upcoming future.

**Date: Thursday, 13 Dec. 2012**
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Chair: **Prof. Ching-Nung Yang**, National Dong Hwa University, Taiwan
Speaker: **Prof. L. Harn**, University of Missouri-Kansas City, USA
Title: Secret Sharing and Its Applications
Abstract: Secret sharing was first proposed in 1979 by Shamir and Blakley separately. Secret sharing has become a very important cryptographic tool used in multi-party computing, e-voting, distributed computing, etc. In this talk, I will outline new

research problems and solutions when secret reconstruction is performed in asynchronous channels. It will include rational secret sharing, secure secret reconstruction, multi-secret sharing, cheater detection and identification. In addition, new applications using secret sharing to support secure group communication, secure multicast transmission will also be addressed.

**Time: 10:30~11:30 am**

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Chair: **Prof. Ruay-Shiung Chang**, National Dong Hwa University, Taiwan

Speaker: **Prof. C.-C. Jay Kuo**, University of Southern California, USA

Title: Depth-Assisted Intelligent Video

Abstract: Intelligent video, including video understanding, indexing and retrieval, is a very challenging computer vision problem and a good application candidate of cloud computing. When a scene is captured by a single camera, the 3D world space is projected to a 2D image space. A significant amount of information is lost during the projection process. There is a recent trend to put more emphasis on acquiring the depth information so as to simplify the video processing and understanding tasks. The depth information can be obtained by a depth camera, a stereo camera or some depth-inference algorithms. These are very hot topics due to the popularity of the Microsoft Kinetic and the emergence of 3D video contents such as 3D movies and 3DTV. In this talk, I will give an overview talk on the usefulness of the depth information in several video analysis problems and future research opportunities and challenges.