Invited Overview Session

Session:	FP1-1.1
Time:	Friday, December 18, 14:00 - 14:30
Place:	Room Y301
Chair:	Daniel P.K. Lun, The Hong Kong Polytechnic University (Hong Kong)

Virtual-View Based 3D Video Composition

Speaker: Hsueh-Ming HANG, National Chiao Tung University, Taiwan

Abstract

One interesting next-generation 3D research direction is the so-called virtualviewpoint (or free-viewpoint) video system. It is also an on-going standardization item in the international ITU/MPEG Standards. Typically, a densely arranged camera array is used to acquire input images and a number of virtual view pictures are synthesized at the receiver using the depth-image based rendering (DIBR) technique. An interesting application of virtual-view system is 3D scene composition. It is an extension of the traditional chroma key technique but it now tries to merge two sets of 3D video scenes into one consistent 3D scene. However, these two sets of RGB-D sequences are taken independently by two different sets of cameras. Thus, the camera orientations and movements of these cameras may not match each other. We will discuss the challenges of this topic and summarize our progress on solving them.

Biography

Hsueh-Ming Hang received the B.S. and M.S. degrees from National Chiao Tung University, Hsinchu, Taiwan, in 1978 and 1980, respectively, and Ph.D. in Electrical Engineering from Rensselaer Polytechnic Institute, Troy, NY, in 1984. From 1984 to 1991, he was with AT&T Bell Laboratories, Holmdel, NJ, and then he joined the Electronics Engineering Department of National Chiao Tung University (NCTU), Hsinchu, Taiwan, in December 1991. From 2006 to 2009, he took a leave from NCTU and was appointed as Dean of the EECS College at National Taipei University of Technology (NTUT). He is currently the Dean of the ECE College, NCTU. He has been actively involved in the international MPEG standards since 1984 and his current research interests include multimedia compression, image/signal processing algorithms and architectures, and multimedia communication systems.

Dr. Hang holds 13 patents (Taiwan, US and Japan) and has published over 190 technical papers related to image compression, signal processing, and video codec architecture. He was an associate editor (AE) of the IEEE Transactions on Image Processing (1992-1994, 2008-2012) and the IEEE Transactions on Circuits and Systems for Video Technology (1997-1999). He is a co-editor and contributor of the Handbook of Visual Communications published by Academic Press in 1995. He was a Board Member of the Asia-Pacific Signal and Information Processing Association (APSIPA) (2013-2014) and currently an IEEE Circuits and Systems Society Distinguished Lecturer (2014-2015). He is a recipient of the IEEE Third Millennium Medal and is a Fellow of IEEE and IET and a member of Sigma Xi.