



Department of Computer Science and Engineering

Presents

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Mobile and Networked Video: A Challenging New Era

Abstract: Recent proliferation of mobile devices with video capture capabilities has resulted in a paradigm shift trends in video coding, processing, and distribution. These mobile devices, together with numerous high end consumer video terminals, are connected to form contemporary networks of unprecedented complexity. The design principles of traditional video coding for broadcasting video over the air, or for streaming video over Internet, need to be thoroughly re-examined. The revolutionary mobile wireless networks, coupled with overlay network concept and P2P video content distribution phenomena, present significant technical challenges for both video content distributors and video service providers in order to satisfy ever increasing demands from the consumers. This talk will present some multi-faceted challenges for emerging mobile and networked video applications. In particular, we will examine one new approach based on distributed source coding principles to demonstrate that distributed source coding based approach is indeed promising for video encoding, decoding, and processing for various contemporary video applications.

Biography: Chang Wen Chen is a Professor of Computer Science and Engineering at the State University of New York at Buffalo. Previously, he has been Allen Henry Endow Chair Professor of Electrical and Computer Engineering at the Florida Institute of Technology from 2003 to 2007. He was on the faculty of Electrical Engineering Dept. at the University of Rochester from 1992 to 1996, on the faculty of Electrical and Computer Engineering Dept at the University of Missouri-Columbia from 1996 to 2003. He also served as the Head of Interactive Media Group at David Sarnoff Research Labs in Princeton from 2000 to 2002, managing numerous research projects in video coding standards and wireless video communications. Currently, he is the Editor-in-Chief for *IEEE Trans. Circuits and Systems for Video Technology*. He has been an Editor for numerous IEEE Transactions and Journals, including Proceedings of IEEE, IEEE Journal of Selected Areas in Communications, IEEE Trans. Multimedia, and IEEE Multimedia Magazine. He has also served as Conference Chair for several major IEEE and SPIE conferences related to mobile wireless video communications and signal processing. His current research interests include reliable and secure multimedia communications over mobile wireless channels; digital video coding, processing, analysis, and embedded implementation; medical image analysis and biomedical information processing; distributed source coding and digital signal processing for communications; and collaborative signal processing and data aggregation for sensor networks. His research is supported by NSF, DARPA, Air Force, NASA, Whitaker Foundation, Kodak, Intel, and Huawei. He received his BS from University of Science and Technology of China in 1983, MSEE from University of Southern California in 1986, and Ph.D. from University of Illinois at Urbana-Champaign in 1992. He was elected an IEEE Fellow for his contributions in digital image and video processing, analysis, and communications, and elected an SPIE Fellow for his contributions in electronic imaging and visual communications.

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