



Next Video Coding and Format

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Mar. 18th (Wed.) 10:00-12:00 am 理教 408



Abstract

数字视频编码对视频工业及通讯领域有重要意义。在这个报告中，将对数字视频编码原理及近20年来国际标准的研发进展作一介绍。特别将报告最新的视频格式及其产生的对下一代视频编码的挑战。

Digital video signal processing is an area of science and engineering that has developed rapidly over the past two decades. The video coding standards developed by the moving picture expert group (MPEG) and ITU Video Coding Experts Group (VCEG) play a very important role for the video industry, which provide key technologies for digital transmission and storage of video signals. In this talk, I will introduce the concept of digital video coding and give an update of recent video coding standard activities and progresses. Specially, I will introduce new video formats which may create some challenges for next generation video coding schemes.

Bio

孙惠方1967年毕业于哈尔滨军事工程学院，1986年在加拿大渥太华大学获电机工程博士学位。毕业后任美国费利狄更斯大学工程学院助理教授，副教授。从1990到1995年，孙惠方受聘于美国Sarnoff研究中心，任研究员，数字图像技术经理。1995年，孙惠方加入三菱电机美国研究院，2003年晋升为副总裁和研究院 Fellow，现为研究院 Fellow。孙惠方一直是数字视频编码MPEG标准制定的参与者。曾参加了世界第一个高清数字电视标准美国ATSC标准的研发，为数据压缩组的核心成员。孙惠方出版过两本学术专著，已获65项美国专利，在IEEE的主要杂志及各种国际学术会议上发表学术论文近160篇。孙惠方曾获：IEEE Transaction on Consumer Electronics 1992 年最佳学术论文奖，1996年ICCE 最佳学术会议论文奖，2003年IEEE Transaction on Circuits and Systems for Video Technology 最佳学术论文奖。Sarnoff 研究中心1992 AD-HDTV 团队研究奖，1994年由于对美国高清数字电视压缩技术的贡献 获 Sanorff 先进技术成就奖。孙惠方还曾任 IEEE TCSVT 的副主编（1998-2009）及 IEEE 视频信号处理通讯技术委员会主席（2002-2004）。他是国际电子电气工程学会会士 (IEEE Fellow)。孙惠方也是北京大学客座教授，中国科学院声学所荣誉教授，天津大学客座教授，华中科技大学客座教授，北京传媒大学客座教授，宁波大学客座教授，上海交通大学客座研究员，北京交通大学兼职教授 及AVS 顾问。

Huifang Sun graduated from Harbin Military Engineering Institute, Harbin, China, and received the Ph.D. from University of Ottawa, Canada. He was an Associate Professor in Fairleigh Dickinson University in 1990. He joined to Sarnoff Corporation in 1990 as a member of technical staff and was promoted to a Technology Leader of Digital Video Communication. In 1995, he joined Mitsubishi Electric Research Laboratories (MERL) and was promoted as Vice President and Deputy Director in 2003 and currently is a Fellow of MERL. He has co-authored two books and published more than 150 Journal and Conference papers. He holds more than 61 US patents. He obtained the Technical Achievement Award for optimization and specification of the Grand Alliance HDTV video compression algorithm in 1994 at Sarnoff Lab. He received the best paper award of 1992 IEEE Transaction on Consumer Electronics, the best paper award of 1996 ICCE and the best paper award of 2003 IEEE Transaction on CSVT. He was an Associate Editor for IEEE Transaction on Circuits and Systems for Video Technology and was the Chair of Visual Processing Technical Committee of IEEE Circuits and System Society. He is an IEEE Fellow.