

Advanced Video Compression: Standards and Applications

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Date: April 15, 2014 (Tuesday)
Time: 11:30 am (refreshments start at 11:15 am)
Place: 202 ECEC, NJIT

About the Speaker



Ofer Hadar received the BSc, the MSc (cum laude) and the PhD degrees from the Ben-Gurion University of the Negev, Israel, in 1990, 1992, and 1997, respectively, all in electrical and computer engineering. From August 1996 to February 1997, he was with CREOL at Central Florida University, Orlando, FL, as a visiting research scientist. From October 1997 to March 1999, he was a post-doctoral fellow in the Department of Computer Science at the Technion-Israel Institute of Technology, Haifa. In 1999, Prof. Hadar joined the Communication Systems Engineering Department at Ben-Gurion University of the Negev. Currently, he is Associate Professor and the head of the department. His research interests include image compression, advanced video coding, H.264, SVC, HECV, packet video, transmission of video over IP networks, and image processing, data hiding and cyber in compressed video streaming. Since 2011, Prof. Hadar is an Associate Editor of the Optical Engineering journal. Recently he was the guest editor (with his former Ph.D student Dr. Dan Grois) of a special section on video compression technology in *Opt. Eng.* 52(7), (July, 2013). Prof. Hadar also works as a consultant for various Hi-Tech companies in Israel, and is a Senior member of IEEE and SPIE.

About the Talk (registration: https://meetings.vtools.ieee.org/meeting_registration/register/25003)

Nowadays, we cannot imagine our life without video content and without devices that enable us to acquire and display such content. According to recent 2012 research, the video content transfer over the Internet was around 60% of the overall Internet data transfer, and the overall video transfer (including the Internet) could reach 90% during the next four years. TV sets supporting only full high-definition (HD) resolution (i.e., 1080p) are already considered to be outdated due to a dramatic demand for the ultra-HD resolution that often refers to 3840×2160 (4K) or 7680×4320 (8K) resolutions. In this talk, we will provide an overview of recent achievements in video compression technology including some results of our research group. The talk will start with motivation for video compression and a short introduction of the video compression standards history followed by the description of the current H.264/MPEG-4 AVC video coding standard. Then, we will describe the scalable video coding (SVC) standard in H.264. The last part of the talk will present the most recent high-efficiency video coding (HEVC) standard, which is capable of providing a bit-rate reduction of about 50% at the same visual quality compared to its predecessor. We will compare between HEVC, H.264 and VP9 (Google standard for video compression) that have been presented recently in PCS2013. The talk will conclude with some future directions in video compression.

Sponsors: IEEE Communications Society North Jersey Chapter
NJIT Department of Electrical and Computer Engineering

For more information contact Nirwan Ansari (973)596-3670 or Amit Patel (a.j.patel@ieee.org). Check <http://web.njit.edu/~ieeenj/comm.html> for latest updates. Directions to NJIT can be found at: <http://www.njit.edu/about/visit/gettingtonjit.php>.