

Call for Papers
IEEE Signal Processing Society
IEEE Journal of Selected Topics in Signal Processing

Special Issue on Recent Advances in Video Processing for Consumer Displays

With the maturity of liquid crystal (LCD) and plasma (PDP) technologies and the emergence of Organic Light Emitting Diode (OLED) prototype, large size high-end displays/TVs have become very popular in the consumer markets. Picture quality is the most critical factor that the customers consider when they compare different brands. In order to survive in this highly competitive market, display/TV manufacturers put all their efforts in making superb displays that are able to show pictures with crystal sharp details at high spatial and temporal resolutions. Those displays often can give a breathtaking impression, when the input video is in good contrast, high resolution and with low compression rate. Nevertheless, video source materials are not always in good quality, because they are usually spatially and temporally down-sampled, corrupted with noise, and severely compressed. Moreover, new sources of video content, like Internet streaming video or sequences captured by mobile devices, have even lower picture quality than that of conventional TV broadcasting. Again, with the emergence of 3DTV, new challenges are created for display manufacturers. One of the challenges lies in content creation of multiple views from single or limited views of broadcasting video, for which robust depth estimation is a crucial step. Another major challenge originates from the rendering of multiple views with the input of 2D video and depth, where occluded background areas in the central view will become de-occluded in rendered views with large viewing angles and have to be inpainted using pixels extrapolated from spatial or temporal neighborhoods.

In order to meet the requirements of current/future high end displays, novel video signal processing algorithms, which are adaptive to content and context, must be designed. This special issue aims to bring together researchers in both academia and industry to present and share recent advances in video processing algorithms targeting consumer display/TV applications.

Topics of interest include, but are not limited to:

- Non-linear sharpness enhancement robust to noise and artifacts
- Local contrast enhancement
- Motion estimation robust to noise and occlusion
- Spatial and temporal up-conversion of low resolution video
- Content-aware resizing and retargeting
- Compression artifacts and noise removal
- Super-resolution techniques
- Wide-gamut and high dynamic-range conversion
- Texture synthesis and detail recovery
- Noise shaping and diffusion
- 2D-3D conversion for 3DTV
- Multi-view processing and fusion for 3DTV
- Depth map estimation and processing
- Background inpainting and content creation
- Coding and transmission for 3DTV
- Machine learning in video processing

Prospective authors should visit <http://www.signalprocessingsociety.org/publications/periodicals/jstsp/> for information on paper submission. Manuscripts should be submitted using the Manuscript Central system at <http://mc.manuscriptcentral.com/jstsp-ieee>. Manuscripts will be peer reviewed according to the standard IEEE process.

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Guest editors:

Ling Shao, The University of Sheffield, UK, ling.shao@sheffield.ac.uk
Gerard de Haan, Philips Research Laboratories/TU Eindhoven, The Netherlands, g.de.haan@philips.com
Andre Kaup, University of Erlangen-Nuremberg, Germany, andre.kaup@rzmail.uni-erlangen.de
Jan Biemond, Delft University of Technology, The Netherlands, j.biemond@tudelft.nl
Sung-Jea Ko, Korea University, Korea, sjko@korea.ac.kr
Dan Schonfeld, University of Illinois, Chicago, USA, dans@uic.edu