Perceptual Analysis and Representations for Immersive Imaging

Important dates

Paper submission: 10th of May – 14th of June, 2020 -- EXTENDED
Notification of paper acceptance: 27th of July, 2020
Camera ready paper due: 16th of August, 2020
Conference: 21st – 23rd of September, 2020

Scope and topics

The emergence of 360°-video capture devices, light field camera arrays and head-mounted displays (HMDs) has created a completely new opportunity for content creators for delivering truly immersive experiences to audiences. Furthermore, it is getting more and more relevant due to the recent pandemic which boosted remote working. This means that immersive imaging technology research still is and going to be a hot topic in near future. Recent years have seen a surge in the scientific research and development for the immersive imaging applications. These developments aimed at solving some fundamental problems introduced with immersive imaging technologies. Although lightfields, 360°-videos, point clouds, and 3D graphics (e.g. volumetric video) have somewhat matured which enables prototype applications, some perceptual issues persist. The current limitations include incorrect 3D-to-2D mapping and optical distortions in omnidirectional image acquisition, optical distortions or low spatial and angular resolution of light field images as well as segmentation or time-consistent 3D reconstruction in dynamic volumetric video, which reduces the quality of experience on the consumer side. To solve these limitations, novel solutions need to be proposed taking human visual perception into account, including new perceptual analyses and representations for immersive imaging technologies.

This special session should address these issues and contribute solutions to tackle the problems with highly advanced immersive imaging technologies, particularly on new perceptual analyses and representations.

The special session contributes to the following aspects in particular (but not limited to):

- Novel representations for efficient processing of light fields, 360° content, point clouds, and/or volumetric video
- Visual attention / saliency in light fields, 360° content, point clouds, and/or volumetric video
- Quality metrics in light fields, 360° content, point clouds, and/or volumetric video