An objective method for High Dynamic Range source content selection

With the aim of improving the immersive experience of the end user, High Dynamic Range (HDR) imaging has been gaining popularity. Therefore, proper validation and performance benchmarking of HDR processing algorithms is a key step towards standardization and commercial deployment. A crucial component of such validation studies is the selection of a challenging and balanced set of source (reference) HDR content. In order to facilitate this, we present an objective method based on the premise that a more challenging HDR scene encapsulates higher contrast, and as a result will show up more visible errors on contrast reduction. This information is subsequently analyzed via fuzzy clustering to enable a probabilistic interpretation. To evaluate the proposed approach, we performed an experimental study on a large set of publicly available HDR images.