

Special Session 4: Novel Approaches for Image & Video Quality Assessment

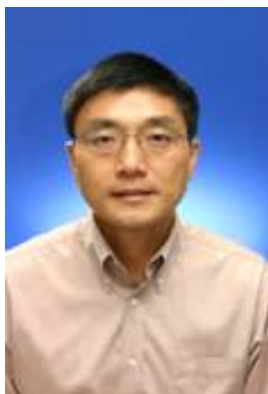
Perceptual image/video quality assessment is one of the most active research fields in the image and video processing community, as for most image and video processing systems the ultimate receiver is a human viewer. Thus, reliable assessment of perceived quality of visual signal is a crucial step in development and evaluation of many technical applications. However, collecting subjective ratings from human observers with psychophysical tests is a cumbersome and expensive task, and for real-time systems even impossible. In order to avoid or minimize such tests, researchers and engineers strive for developing reliable computational models for quality assessment that can be easily used to validate, benchmark and compare image and video processing systems and algorithms.

There are several approaches to conduct image & video quality assessment: 1) Quality metrics with a closed form, which is usually simple and applied to quality assessment without training; 2) Utilizing hand-crafted features in combination with a regression scheme, which is a bottom-up approach based on the human perception analysis; 3) CNN-based approach which may deliver better performance, but it requires training and higher computational complexity; 4) Filtering-based approach which does not need back propagation training while maintaining good performance.

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