

# Quantitative Assessment of Visual Quality for Images and Videos: Present and Future

**Date:** Tuesday, September 15, 2020  
**Time:** 01: 00 PM – 01: 50 PM  
**Location:** Online Zoom Meeting Link

## **Speaker:**

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## **Abstract:**

The early years of this century have witnessed a tremendous growth in the use of digital multimedia data for different communication applications. Researchers from around the world are spending substantial research efforts in developing techniques for improving the appearance of images/video. However, as we know, preserving high quality is a challenging task. Images are subject to distortions during acquisition, compression, transmission, analysis, and reconstruction. For this reason, the research area focusing on image and video quality assessment has attracted a lot of attention in recent years. In particular, compression applications and other multimedia applications need powerful techniques for evaluating quality objectively without human interference. This presentation will cover the different faces of image quality assessment. We will motivate the need for robust image quality assessment techniques, then discuss the main algorithms found in the literature with a critical perspective. We will present the different metrics used for full reference, reduced reference and no reference applications. We will then discuss the difference between image and video quality assessment.

In all of the above, we will take a critical approach to explain which metric can be used for which application. Finally, we will discuss the different approaches to analyze the performance of image/video quality metrics, and end the presentation with some perspectives on newly introduced metrics and their potential applications.

## **Bio:**

**Prof. Mohamed Deriche** received his B.Sc. degree in electrical engineering from the National Polytechnic School, Algeria, and his Ph.D. degree in signal processing from the University of Minnesota in 1994. He worked at Queensland University of Technology, Australia, before joining King Fahd University of Petroleum and Minerals (KFUPM) in Dhahran, Saudi Arabia, where he leads the signal processing group. He has published more than 300 papers in multimedia signal and image processing. He delivered numerous keynotes and invited talks and chaired several conferences including GlobalSIP-MPSP, IEEE Gulf (GCC), Image Processing Tools and Applications, and TENCON (a Region 10 conference). He has supervised more than 40 M.Sc. and Ph.D. students and is the recipient of the IEEE Third Millennium Medal. He also received the Shauman Best Researcher Award in the Arab World, and the Excellence in Research Award (2 times), the Excellence in Teaching Award, and the Excellence in Advising Award at KFUPM. He is the Founding Associate Editor for the Int. J. on Sensors, Transducers and Inst. Systems. He served as an Associate Editor for EURASIP Journal for Image and Video Processing, IET Electronics Letters, International Journal of Digital Signals and Smart Systems, International Journal on Imaging and Graphics, Electronic Let. on Computer Vision and Image Analysis. He is the Assistant Director for the recently established Research Centre for Energy and Geo Signal Processing (CGP) at KFUPM. His current research interests include multimedia signal and image processing, seismic applications, biomedical image processing, and diverse application of machine learning.