**EFFICIENT EVALUATION OF IMAGE QUALITY VIA DEEP-LEARNING APPROXIMATION OF PERCEPTUAL METRICS**

**ABSTRACT**

Image metrics based on Human Visual System (HVS) play a remarkable role in the evaluation of complex image processing algorithms. However, mimicking the HVS is known to be complex and computationally expensive (both in terms of time and memory), and its usage is thus limited to a few applications and to small input data. All of this makes such metrics not fully attractive in real-world scenarios. To address these issues, we propose Deep Image Quality Metric (DIQM), a deep-learning approach to learn the global image quality feature (mean-opinion-score). DIQM can emulate existing visual metrics efficiently, reducing the computational costs by more than an order of magnitude with respect to existing implementations.

**Index Terms—**Convolutional Neural Networks (CNNs), Objective Metrics, Image Evaluation, Human Visual System, JPEG-XT, and HDR Imaging.