

## **A Fast Reliable Image Quality Predictor by Fusing Micro- and Macro-Structures**

### **Abstract:**

A fast reliable computational quality predictor is eagerly desired in practical image/video applications, such as serving for the quality monitoring of real-time coding and transcoding. In this paper, we propose a new perceptual image quality assessment (IQA) metric based on the human visual system (HVS). The proposed IQA model performs efficiently with convolution operations at multiscales, gradient magnitude, and color information similarity, and a perceptual-based pooling. Extensive experiments are conducted using four popular large-size image databases and two multiply distorted image databases, and results validate the superiority of our approach over modern IQA measures in efficiency and efficacy. Our metric is built on the theoretical support of the HVS with lately designed IQA methods as special cases.