

A New Categorization of Image Quality Metrics Based on a Model of Human Quality Perception

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Abstract : This study presents a new model of the human image quality assessment process: the aim is to highlight the foundations of the image quality metrics proposed in literature, by identifying the cognitive/physiological or mathematical principles of their development and the relation with the actual human quality assessment process. The model allows to create a novel categorization of objective and subjective image quality metrics. Our work includes an overview of the most used or effective objective metrics in literature, and, for each of them, we underline its main characteristics, with reference to the rationale of the proposed model and categorization. From the results of this operation, we underline a problem that affects all the presented metrics: the fact that many aspects of human biases are not taken in account at all. We then propose a possible methodology to address this issue.

Keywords : eye-tracking, image quality assessment metric, MOS, quality of user experience, visual perception

Conference Title : ICIPR 2014 : International Conference on Image and Pattern Recognition

Conference Location : Venice, Italy

Conference Dates : June 19-20, 2014