

***Abstract: Low Complexity Bi-directional Image Quality Assessment for Digital Image Stabilization***

Sangwoo Ahn<sup>1</sup>, Linbo Luo<sup>2</sup>, Jongpark Kim<sup>3</sup>, Jongwha Chong<sup>2\*</sup>

<sup>1</sup> *Department of Nanoscale Semiconductor Engineering, Hanyang University, Seoul, Rep. of Korea,*

<sup>2</sup> *Department of Electronics and Computer Engineering, Hanyang University, Seoul, Rep. of Korea,*

<sup>3</sup> *CIS Digital Design Group, SK Hynix Semiconductor Inc., Seoul, Rep. Korea*  
*\*jchong@hanyang.ac.kr*

**Abstract**

In this paper, a computational model to measure the image quality of digital image processing is proposed. The computational models for image quality assessment (IQA) based on the fact that edges of objects play an important role in the human visual system have been researched. Considering this characteristic, edge width which indicates clarity of edge is measured. After obtaining the edge width, values are normalized suitable for assessment. The simulations which are performed on benchmark IQA databases demonstrate that the proposed algorithm can achieve high consistency with the subjective evaluations and has low computational complexity. Consequently, the proposed method can be applied to digital image stabilization due to its low computational complexity.