World Academy of Science, Engineering and Technology
International Journal of Computer and Information Engineering
Vol:11, No:07, 2017

Fusion of Shape and Texture for Unconstrained Periocular Authentication

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Abstract : Unconstrained authentication is an important component for personal automated systems and human-computer interfaces. Existing solutions mostly use face as the primary object of analysis. The performance of face-based systems is largely determined by the extent of deformation caused in the facial region and amount of useful information available in occluded face images. Periocular region is a useful portion of face with discriminative ability coupled with resistance to deformation. A reliable portion of periocular area is available for occluded images. The present work demonstrates that joint representation of periocular texture and periocular structure provides an effective expression and poses invariant representation. The proposed methodology provides an effective and compact description of periocular texture and shape. The method is tested over four benchmark datasets exhibiting varied acquisition conditions.

Keywords : periocular authentication, Zernike moments, LBP variance, shape and texture fusion
Conference Title : ICIP 2017 : International Conference on Image Processing
Conference Location : Stockholm, Sweden
Conference Dates : July 13-14, 2017