



FACIAL FEATURE EXTRACTION BASED ON A DEGREE OF PERCEPTUAL IMPORTANCE

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ABSTRACT—Feature extraction is a key issue in the image processing and recognition. Especially, in the robot vision, intelligent methods such as human visual system are demanded. As a perceptually motivated image model, the three-component image model has been proposed, which decomposes components corresponding to degrees of the perceptual importance. We pay attention to its effective extraction ability of the perceptually significant region of the image and try to apply the algorithm to the feature extraction. However the approach consumes a lot of computing time because of its complex computing algorithm. In this paper, human-like feature extraction by using a nonlinear function network is proposed. This method realizes the feature extraction based on the three-component image model with a hardware friendly algorithm. The validity of the proposed method is confirmed with experimental results of facial feature extraction as compared with the standard Laplacian-Gaussian operator edges extraction scheme.

Key Words: perceptual importance, facial feature extraction, nonlinear function network, high impressive image, strong edges