Journal of Computer Science Engineering and Information Technology Research (JCSEITR)
ISSN(P): 2250-2416; ISSN(E): Applied
Vol. 4, Issue 2, Apr 2014, 7-16

FACIAL AGE CLASSIFICATION USING DISCRETE WAVELET TRANSFORM AND K-NEAREST NEIGHBOUR ALGORITHM

J.NITHYASHRI[1] & G. KULANTHAIVEL[2]

[1]Research Scholar, Department of CSE, Sathyabama University, Chennai, Tamil Nadu, India

[2]Professor, Department of Electronics Engineering, NITTTR, Chennai, Tamil Nadu, India

ABSTRACT

Computer based face processing has been extensively used in finding identity, gender and age of human beings. There were a number of growth related changes in the face, which helps us in categorizing the age into various age groups. Statistical methods, Geometric methods, Anthropometric methods etc, were the various methods, which classifies the human facial images into different age groups. On the other hand, a prominent method is yet required for classifying the human age. The proposed work includes three stages of pre-processing technique, in which the facial images are enhanced. The facial features were extracted using Discrete Wavelet Transformation (DWT) and the classification of age group is done using K-Nearest Neighbour (KNN) classifier. We used three categories of age groups, namely Adolescence (13-18yrs), Adult (19-59yrs) and Senior Adult (60yrs and above). The classification algorithm is trained and tested using MORPH database which consists of images of various age groups. In stage-1 a maximum classification rate of 96.56% is achieved, using Reverse Bi-orthogonal wavelet (rbior2.4 at level-2), whereas, in stage-2, a maximum classification rate of 91.86% is achieved, using Daubechies, Bi-orthogonal, Reverse Bi-orthogonal wavelets at level-3.

KEYWORDS: Contrast Equalization, Dog Filter, Gamma Correction, Facial Aging, Feature Extraction