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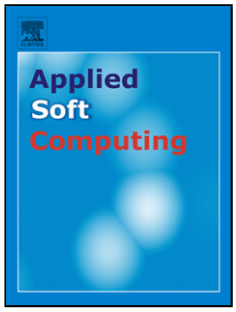

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ACCEPTED MANUSCRIPT

New Approaches to determine Age and Gender in Image Processing Techniques using Multilayer Perceptron Neural Network

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HIGHLIGHTS

- In this study, new algorithms were developed to determine age and gender.
- In this study age and gender estimation was performed automatically.
- The database is the largest in the literature created manually.
- Image segmentation is performed automatically and dynamically.

ABSTRACT

As a result of some events (disasters, inheritance, disappearances etc.), age and gender determination can be vital for people. Forensic medical institutions make the determination of age by examining the structures such as teeth and bones. Procedures for forensic science are currently estimated manually according to certain morphological findings on the tooth. In this study, 1313 panoramic dental images were used automatically to estimate age. Image preprocessing is applied on these images. Trapezoidal teeth are corrected in the coordinate plane to obtain more accurate and standard results. In the study, the correction process is done with original and novel developed algorithm. Dental images are automatically and dynamically segmented and feature vectors are created by extracting their features. The generated feature vectors are dynamic and presented as inputs to the Multilayer Perceptron Neural Network.

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