Face-Age Modeling: A Pattern Recognition Analysis for Age Estimation

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Abstract:

This One way to explain the concept of face recognition is to see it as the computational ability engaged in verifying the identity of a person on the basis of the face image regardless of background, face-attachment, face-makeup and illumination. Face recognition has been researched and applied in real life problems such as security access controls, banking identity verification, immigrant verification and licensing. This study examines popular techniques and approaches involved in face recognition and its application in age estimation. The identification characteristics possessed by the face with other demographic information such as age, sex and ethnicity can be predicted using facial features extracted from facial images. The application of face recognition in these areas especially age estimation has not been richly researched. Consequently, this study presents an explorative write-up of face-age models with reference to the application of the commonly used face recognition technique to computationally achieve age prediction. In this study, it's germane to consider face recognition techniques since an important part of age estimation pipeline is the feature extraction which is also important in face recognition. This study shows that most of the researches in age estimation were tested with image taken under controlled or semi-controlled environment which are not sufficient to capture challenges in real life conditions. It was observed that most existing researches uses FG-NET and MORPH 2 face database in testing age estimation systems with scarcity of black face feature across several existing systems. However, more work is desirable, owing to failure of some system to accurately recognize or identify specific faces or using long turnaround processing time for identification vis-a-vise age

estimation. This calls for the development of robust black-face database for local testing and implementation among African population. It is also evident that more work is ...

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I. Introduction

Pattern in this study are generated from face-images. The contest of pattern recognition studied in this write-up is one inherent in the process of face recognition. Face recognition is the ability to recognize human faces despite many variations in facial appearances. Such variations may be due to aging, different expression caused by the prevalent condition under which the image was taken, background lightening, face-makeup, facial hair and head orientation described by the angle from which the image was captured. Recognition is automatically done by computer analysis of a mathematical representation of the face image usually two dimensional representation of the 3-D regular human face [1]. The 2-D features are manipulated by subjecting it to different image processing techniques and stored in a training database template. Test images are projected to this template during testing, to verify if the computer would recognize the projected image or not [2].

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