Title: Facial Expression Recognition: A Survey

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Outline

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Facial Expression Recognition: A Survey?
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Abstract
Automatic facial expression recognition system has many applications including, but not limited to, human behavior understanding, detection of mental disorders, and synthetic human expressions. Two popular methods utilized mostly in the literature for the automatic FER systems are based on geometry and appearance. Even though there is lots of research using static images, the research is still going on for the development of new methods which would be quiet easy in computation and would have less memory usage as compared to previous methods. This paper presents a quick survey of facial expression recognition. A comparative study is also carried out using various feature extraction techniques on JAFFE dataset.

Keywords
Facial Expression Recognition(FER)
LBP
LDP
LGC
HOG ;

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* ### Techniques and challenges of face recognition: A critical review
2018, Procedia Computer Science
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A lot of researches are going on since last two decades for object recognition, shape matching, and pattern recognition in the field of computer vision. Face recognition is one of the important issues in object recognition and computer vision. In our day to day activities, a number of biometric applications are available for recognizing humans such as eye or iris recognition, fingerprint recognition, face recognition. Face is an important part of human being and requires detection for different applications such as security, forensic investigation. It requires proper techniques for face detection and recognition with challenges of different facial expressions, pose variations, occlusion, aging and resolution either in the frame of stationary object or video sequencing images. Authors tried to put the concept of face synthesis, for improving accuracy and recognition rate on different face database like ORL, YALE, AR and LFW. Authors had presented a critical review of various types of face recognition techniques and challenges, to

improve efficiency and recognition rate for identifying face images in large database, with comparison of accuracy or recognition rate.

* ### Smart environment architecture for emotion detection and regulation
2016, Journal of Biomedical Informatics

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This paper introduces an architecture as a proof-of-concept for emotion detection and regulation in smart health environments. The aim of the proposal is to detect the patient?s emotional state by analysing his/her physiological signals, facial expression and behaviour. Then, the system provides the best-tailored actions in the environment to regulate these emotions towards a positive mood when possible. The current state-of-the-art in emotion regulation through music and colour/light is implemented with the final goal of enhancing the quality of life and care of the subject. The paper describes the three main parts of the architecture, namely ?Emotion Detection?, ?Emotion Regulation? and ?Emotion Feedback Control?. ?Emotion Detection? works with the data captured from the patient, whereas ?Emotion Regulation? offers him/her different musical pieces and colour/light settings. ?Emotion Feedback Control? performs as a feedback control loop to assess the effect of emotion regulation over emotion detection. We are currently testing the overall architecture and the intervention in real environments to achieve our final goal.

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