INTELLIGENT DETECTION OF FACIAL EXPRESSION
BASED ON IMAGE

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Abstract- Human facial expressions detection plays a central role in pervasive health care and it is an active research field in computer vision. In this paper, a novel method for facial expression detection from dynamic facial images is proposed, which includes two stages of feature extraction and facial expression detection. Firstly, Active Shape Model (ASM) is used to extract the local texture feature, and optical flow technique is determined facial velocity information, which is used to characterize facial expression. Then, fusing the local texture feature and facial velocity information get the hybrid characteristics using Bag of Words. Finally, Multi-Instance Boosting model is used to recognize facial expression from video sequences. In order to be learned quickly and complete the detection, the class label information is used for the learning of the Multi-Instance Boosting model. Experiments were performed on a facial expression dataset built by ourselves and on the JAFFE database to evaluate the proposed method. The proposed method shows substantially higher accuracy at facial expression detection than has been previously achieved and gets a detection accuracy of 95.3%, which validates its effectiveness and meets the requirements of stable, reliable, high precision and anti-interference ability etc.

Index terms: Facial expression, ASM model, Optical flow model, Bag of Words, Multi-Instance Boosting model.