Topic : Facial emotion recognition in real-time and static images

Facial expressions are a form of nonverbal communication. Various studies have been done on the classification of these facial expressions. There is strong evidence for the universal facial expressions of eight emotions which includes neutral, happy, sadness, anger, contempt, disgust, fear, and surprise. So it is very important to detect these emotions on the face as it has wide applications in the field of Computer Vision and Artificial Intelligence. These fields are researching on the facial emotions to get the sentiments of the humans automatically. The emotion detection has been done in both real-time and static images.

Normally developers use the Cohn-Kanade Database (CK) and the Extended Cohn-Kanade (CK+) database, which comprises many static images 640 x 400 pixels and for the real-time using the webcam. The target expression for each sequence in the datasets are fully FACS (Facial action coding system) coded and emotion labels have been revised and validated .

So for emotion recognition initially we need to detect the faces by using HAAR filter from OpenCV in the static images or in the real-time videos. Once the face is detected it can be cropped and processed for further detection of facial landmarks. Then using facial landmarks the datasets are trained using the machine learning algorithm SVM (Support Vector Machine) and then classified according to the eight emotions. Emotion recognition is going to be very useful in the near future in the research field of robotics and Artificial Intelligence for example if a robot can sense the sentiment of any human and that robot can act accordingly without any intervention of any other humans.