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# A Survey on Emotional Detection using Personalised appearance through Face Classification

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***Abstract*—** In this paper we discuss about the various emotion detection methods with example. In particular we discuss about the face detection techniques that is used to identify person's mood. Many papers are taken for the survey. Its pros and cons are also analysed and discussed.

***Keywords*—** Emotion detection, Face detection, Emoticons.

## I. INTRODUCTION

The world has so many living and non living things. Human comes under living things. There is a need for identifying the human. There exist many methods for identifying individual person. Some of them are

Voice recognition
Walking style
Appearance
Hand writing style
Fingerprint matching
Eye blink
Hair style
Face detection

The normal method is face detection. Face detection is a computer technology being applied in a plenty of application that identifies human face in digital image [1]. Face detection also refers to the psychological process by which human locate attend to faces in a visual scene. Face detection algorithms focus on the detection frontal human faces. It is analogous to image detection in which the image of a person in matched bit by bit. Image matches with an image stores in database. Face detection is used in biometrics often as a part of facial recognition system. Face detection is also used for selecting details of interest in photos slideshows.

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The face has numerous emotions. Those emotions are used to identify human's present state of mind.Emotion detection is a task of recognizing a persons emotional state[12]. For example the various emotions like happy, sad, puzzled, anger, surprise across both voice and non-voice channels are as given in the figure 1. The various human face emotions are as given in the figure 2.The most common technique analyse the characteristics of the voice signal with word use as an additional input if available.


Fig.1. Types of Emotions

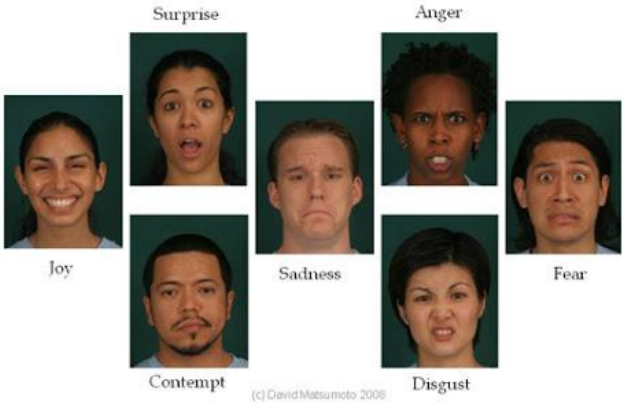


Fig.2. Various emotions in human face

***Eight basic emotions***

- **Fear:** Feeling of afraid**.** Other words are terror,shock,phobia
- **Anger:** Feeling of angry.

- **Sadness:** Feeling sad. Some people thick depression is a different emotion.
- **Joy:** Feeling happy. Other words are happiness, gladness.
- **Disgust:** Feeling something is wrong or dirty.
- **Trust:** A positive emotion; an admiration is stronger.
- **Anticipation:** Sense of looking forward positively to something which is going to happen.
- **Surprise:** How one feels when something unexpected positive thing happens.

## II. VARIOUS EMOTION DETECTION METHODS USING FACE

The various emotion detection methods are as given in the table 1.

Table 1 Analysis of emotion detection methods

| S.No | Title | Description |
|---|---|---|
| 1 | A survey of affect recognition methods: Audio, visual and spontaneous[3] | In this technique automated analysis of human affective behaviour has attracted increasing attention from researchers in psychology, computer science, neuroscience. In this we discuss human emotion perception from a psychological perspective. |
| 2 | Facial expression analysis- Hand book of face recognition[4] | In this chapter we describe the process to recognize index face images and outline some of the techniques used to protect privacy while maintaining usefulness of the digital image. |
| 3 | Recognizing facial expression: Machine learning and application to spontaneous behaviour[5] | In this method we discuss about the problem of fully automatic recognition of facial expressions. We present preliminary results for applying this system to spontaneous facial expression |
| 4 | Improved feature representation for robust facial action unit detection.[6] | In this method we discuss about facial expression recognition using facial features from relevant face regions in robust detection of facial action units under realistic conditions. |
| 5 | Action unit detection using sparse appearance descriptors in space-time video volumes[7] | In this method we discuss about the merits of the family of local binary pattern descriptors for FACS Action-Unit (AU) detection. We also compare Local Binary Patterns (LBP) and Local Phase Quantisation (LPQ) for static AU analysis. |
| 6 | Fully automatic facial action unit detection and temporal analysis[8] | In this method we discuss about the automated fast and robust facial expression recognition from face video. We also analyse subtle changes in facial expression by recognizing facial muscle action units. |
| 7 | Emotion recognition from an ensemble of feature.[9] | In this method we discuss about the efforts to push the baseline of expression recognition performance on a realistic database.This both give similar performance. |
| 8 | Recognizing action units for facial expression analysis[10] | Most automatic expression analysis systems attempt to recognize a small set of prototypic expressions Such as happiness and anger. Different facial features, including lips, eyes, brows, cheeks. |
| 9 | Detection tracking and classification of subtle changes in facial expression[11] | In this method we discuss about most of the current work on automated facial expression analysis to recognize prototypic expressions, such as joy and fear. Such prototypic expressions, however, occur infrequently, and human emotions and intentions are communicated more often by changes in one or two discrete features. To capture these expression we need detection, tracking, and classification of fine-grained changes in facial features. |
| 10 | Feature detection and tracking with constrained local models[12] | In this method we discuss about an efficient in a robust model matching method which uses a joint shape and texture appearance model to generate a template detectors. We show that when applied to human faces, our Constrained Local Model(CLM) algorithm is more robust and more accurate than the original method |

## III. CONCLUSION

In this paper we studied about various emotions detection techniques that identify a personsmood. Example Sadness,joy,happy etc.., that are used for identification. This result shows that facial action unit detection is better method as compared to others.

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