ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering
Vol. 4, Issue 5, May 2015

A Media Player which operates depending on Human Emotions

Harshala Chaudhari[1], Amrapali Waghmare[2], Reshma Ganjewar[3], Dr. Abhijit Banubakode[4]

Department of Information technology, Engineering, RSCOE, Pune University, Pune , Maharashtra, India[1,2,3,4]

Abstract: The world of science cannot be measured in terms of development and progress. It shows how far human mind can work and think. It has now reached to the technology known as "Blue Eyes Technology" that can sense and control human emotions and feelings through gadgets. The eyes, fingers, speech are the elements which help to sense the emotion level of human body. This paper implements a new technique known as Emotion Sensory World of Blue Eyes Technology which identifies human emotions (sad, happy or thinking) using image processing techniques by extracting eye portion from the captured image which is then compared with stored images of database. After identifying mood the songs will be played to make human emotion level normal. So, the media player is based on blue eyes technology[1]. Emotion detection has several applications in areas such as artificial intelligence, image processing, intelligent Human-Computer interfaces. This paper reviews the literature on different aspects like different theories of emotions, methods of detecting emotions like face detection, eye detection, lip detection. This paper reviews comparative techniques for recognizing emotions through images.

Keywords: emotions, images, image processing, sense, emotion, emotion detection, facial expression, face detection, lip detection, eye detection.

I. INTRODUCTION

Imagine yourself in a world where humans interact with computers. You are sitting in front of your personal computer that can listen, talk, or even scream aloud. It has the ability to gather information about you and interact with you through special techniques like facial recognition, speech recognition, etc. It can even understand your emotions at the touch of the mouse. It verifies your identity, feels your presence, and starts interacting with you .You asks the computer to dial to your friend at his office. It realizes the urgency of the situation through the mouse, dials your friend at his office, and establishes a connection. Human cognition depends primarily on the ability to perceive, interpret, and integrate audio-visuals and sensing information. Adding extraordinary perceptual abilities to computers would enable computers to work together with human beings as intimate partners. Researchers are attempting to add more capabilities to computers that will allow them to interact like humans, recognize human presents, talk, listen, or even guess their feelings[2]. It uses non-obtrusive sensing method, employing most modern video cameras and microphones to identify the user's actions through the use of imparted sensory abilities. The machine can understand what a user wants, where he is looking at, and even realize his physical or emotional states. Thus Emotion Detection System aims at detecting emotion. In this project we are going to use three steps for emotion detection. They are face detection, feature extraction, feature classification. The features considered while detecting emotion can be static, dynamic, point-based geometric, or region based appearance. After studying, and reviewing the different methods used in emotion detection, with varying strengths and weaknesses in all of them. The field of emotion detection has increasing demand in various fields. Accordingly, the impact and potential usage of automatic EDS will have wide range of applications, including human-computer interaction, robot control and driver state surveillance.

Background: Emotion detection is developing in the recent years because of advancement in different field like image processing and machine learning, human-computer interaction. Research on emotion has increased significantly over the past two decades with many fields contributing including psychology, neuroscience, Medicine, sociology and even computer science. Emotions play an essential role in social interactions and facilitate rational decision making and perception. The human computer interaction have started their investigation and tried to understand different causes and effects[4].

Motivation: Human error - a frequent reason of catastrophes and ecological disasters

- -temporary indisposition
- -weariness
- -oversight[5].

Need: There is need to develop an ''effective system" that is capable of recognizing and appropriately responding to human emotions, and ultimately making human–computer-interaction experiences more effective and pleasurable.

II. LITERATURE SURVEY

Charles Darwin is the first scientist to recognize that facial expression is one of the most powerful and immediate means for human being to communicate their emotions, intentions and opinions to each other. Rosalind Picard (1997) describes why emotions are important to the computing community. There are two aspects of affective computing: giving the computer the ability to detect

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering
Vol. 4, Issue 5, May 2015

emotions and giving the computer the ability to express emotions. Not only are emotions crucial for rational decision making as Picard describes, but emotion detection is an important step to an adaptive computer system. An adaptive, smart computer system has been driving our efforts to detect a person's emotional state. An important element of incorporating emotion into computing is for productivity for a computer user. A study (Dryer & Horowitz, 1997) has shown that people with personalities that are similar or complement each other collaborate well. Dryer (1999) has also shown that people view their computer as having a personality. For these reasons, it is important to develop computers which can work well with its user.

In the year 2011 Ligang Zhang and Dian Tjondronegoro developed a facial emotion recognition system(FER) they used dynamic 3D gabor feature approach and obtained the highest correct recognition rate (CRR) on the JAFFE database and FER is among the top performers on the Cohn-Kanade (CK) database using above approach. They testified the effectiveness of the proposed approach through recognition performance, computational time, and comparison with the state-of-the-art performance. And concluded that patch-based Gabor features show a better performance over point-based Gabor features in terms of extracting regional features, keeping the position information, achieving a better recognition performance, and requiring a less number[7].

In 2010, Renu Nagpal, Pooja Nagpal , Sumeet Kaur, gave a novel approach for the detection of emotions using the cascading of Mutation Bacteria Foraging optimization and Adaptive Median Filter in highly corrupted noisy environment. The approach involves removal of noise from the image by the combination of MBFO & AMF and then detects local, global and statistical feature form the image. They found that the proposed method is suitable for identification of emotions in the presence of salt and pepper noise as high as 90%. And further Future work includes that the same technique can be used for detection of emotions in the presence of other noise[6].

Till 2010 as per the survey done by R A Patil, Vineet Sahula and A. S. Mandal CEERI Pilani on expression recognition, The problem is divided into three sub problems face detection, feature extraction and facial expression classification. Most of the existing systems assume that the presence of the face in a scene is ensured. Most of the systems deal with only feature extraction and classification, as- suming that face is already detected. In addition, assumptions are also made like (i) images are frontal view, (ii) illumination is constant, (iii) light source is fixed , (iv)face has no facial hair and glasses, (v) the subjects are young without wrinkles, and (vi) subjects are immovable. It is unrealistic to expect these assumptions in application domains of human behavior interpretation and human computer interface. Almost all the systems classify facial expressions into one of the six basic emotion-categories proposed by Ekman and Friesen. Every time it is not possible that all facial expressions, able to be displayed on the face, can be classified under the six basic emotion-categories[].

In 2013 as per the paper published by M R Mizna and Mamata Bachhani, they have proposed different approaches to implement Blue Eyes Technology. Specifically the Emotion Sensory World technique. This technique uses the Image Processing for detecting human emotions. The different approaches are:

A. Emotional Mouse: It obtains physiological data and emotional state such as heart beat, pressure, temperature etc through the touch of user on mouse where different sensors (such as pressure sensor, heart beat sensor, GSR sensor, temperature sensor) are deployed inside it. Then it determines the personality of the user.

B. Manual And Gage Input Cascading (Magic Pointing): A webcam is used to quickly determine the glints and pupils of the user under variable and realistic lightning conditions and wrap the cursor to every new object user looks at. Then user takes control of the target by hand near the target or ignores it and search for next one.

C. Artifical Intelligent Speech Reorganition: The user speaks to the computer through microphone and that speech get filtered and stored in RAM. The input words are scanned and matched against the internally stored words. Pattern matching is designed to look for the best fit because of variations in loudness, pitch, frequency difference, time gap etc .The identification causes some action to be taken.

D. Simple User Interest Tracker (SUITOR): Blue eye enabled suitor become active when the user makes an eye contact and automatically detect user's area of interest and starts searching it. E.g.: If you are reading headline, pops up the story in the browser window[1].

Out of this we have referred the Emotion Sensory World technique. In the year 2014 Kritika R.Srivastava, Karishma A. Chaudhary, in their paper "Vision System of Blue Eyes" they have said - The BLUE EYES technology aims at creating computational machines that have perceptual and sensory ability like those of human beings. It uses non-obtrusive sensing method, employing most modern video cameras and microphones to identify the user's actions through the use of imparted sensory abilities. The machine can understand what a user wants, where he is looking at, and even realize his physical or emotional states. From the physiological data , an emotional state may be determined which would then be related to the task the user is currently doing on the computer. Over a period of time, a user model will be built in order to gain a sense of the user's personality. The scope of the project is to have the computer adapt to the user in order to create a better working environment where the user is more productive. Adding extraordinary perceptual abilities to computers would enable computers to work together with human

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering
Vol. 4, Issue 5, May 2015

beings as intimate partners. Researchers are attempting to add more capabilities to computers that will allow them to interact like humans, recognize human presents, talk, listen, or even guess their feelings[9].

The algorithms which we have selected for detecting emotions are from the papers, Image Edge Detection Algorithm Based on Improved Canny Operator of 2013 and Rapid Object Detection using a Boosted Cascade of Simple Features by Viola and Jones. In Image Edge Detection Algorithm Based on Improved Canny Operator paper Improved canny edge detection algorithm is proposed. Because, the traditional Canny algorithm has difficulty in treating images which contain the salt & pepper noise, and it does not have the adaptive ability in the variance of the Gaussian filtering. For this reason, a new Canny algorithm is presented in this paper, in which open-close filtering instead of Gaussian filtering. In this paper, the traditional Canny operator is improved by using morphology filtering to preterit the noise image. The final edge image can reduce effectively the influence of noise, keep the edge strength and more complete details, get a more satisfactory subjective result. And by using objective evaluation standards, compared with the traditional Canny operator, information entropy, average gradient, peak signal to noise ratio, correlation coefficient and the distortion degree also have increased significantly. So, the new algorithm is an effective and practical method of edge detection[10].

In other paper on canny edge detection, Image Retrieval Based on Improved Canny Edge Detection Algorithm. After conducting experiments it is concluded that 'The image retrieval algorithm based on Canny edge detection is studied. The results of the image retrieval are directly decided by the quality of edge detection. In order to improve the performance of image retrieval system, an improved Canny edge detection operator is proposed. In paper, a lot of experiments are carried out by using MATLAB7.0. Through experiment and test result, it demonstrates the method is an efficient approach[10].

In the paper titled Rapid Object Detection using a Boosted Cascade of Simple Features by Viola and Jones. The authors have presented an approach for object detection which minimizes computation time while achieving high detection accuracy. The approach was used to construct a face detection system which is approximately 15 times faster than any previous approach. This paper brings together new algorithms, representations, and insights which are quite generic and may well have broader application in computer vision and image processing. Finally this paper presents a set of detailed experiments on a difficult face detection dataset which has been widely studied. This dataset includes faces under a very wide range of conditions including: illumination, scale, pose, and cam- era variation. Experiments on such a large and complex dataset are difficult and time consuming. Nevertheless systems which work under these conditions are unlikely to be brittle or limited to a single set of conditions[11].

III. PROPOSED SYSTEM

Fig. I shows the block diagram of the proposed system of imaging a media player controlled by facial Expression. This section describes the importance and detailed processing of each of these components. In earlier biometric based authentication systems iris image, fingerprints and thumbprints are used, but our focus is to use owner's face image for the making owner's emotion level normal by playing song. The proposed system is based on emotion sensory world of Blue Eyes technology. Emotion sensory World is the part Blue Eyes Technology. There are number of techniques proposed to identify emotional state, the neuro-part of the theory refers to a partly innate, biological program, called a facial affect program, which specifies the relationships between different movements of the facial muscles and particular emotions (happiness, sadness, thinking).[1]The system consists of an interface to determine the human gestures including the facial emotions. It also provides a media player that can be controlled by the human gestures. Emotion recognition is associated with the task of recognizing the facial emotions from the input video or image. Prerequisites are the connection to web camera if live recording is being done and mode selection i.e. either textured face or edged face. For our system we referred to textured face.

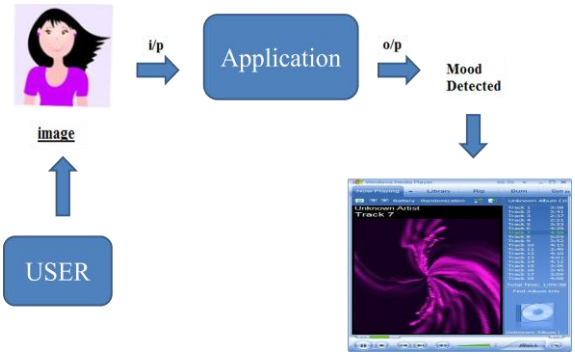

Fig 1 Block Diagram of proposed System

A. Face Detection

The first step in the proposed system is to check whether the image captured by the web camera contains a proper face or not. If the web camera image contains a face then we will use it to further processing and if it does not contain a face then it will wait for the user human gesture to process the media player. This step is accomplished by using computer technology of face detection that determines the locations and sizes of human faces. It detects facial features and ignores anything else, such as buildings, trees, and bodies. The algorithm used here for face detection is the one proposed by Viola and Jones. It uses the Haar Cascades for face detection. The Viola-Jones object detection framework is the first object detection framework to provide competitive object detection rates in real-time proposed in 2001 by Paul Viola and Michael Jones. Although it can be trained to detect a variety of object classes, it was motivated primarily by the problem of face detection. The Components of framework include feature types and evaluation, learning algorithm, cascade architecture. The features employed by the detection

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering
Vol. 4, Issue 5, May 2015

framework universally involve the sums of image pixels within rectangular areas. As such, they bear some resemblance to Haar basis functions, which have been used previously in the realm of image-based object detection. However, since the features used by Viola and Jones all rely on more than one rectangular area, they are generally more complex. The fig A. illustrates the four different types of features used in the framework. The value of any given feature is always simply the sum of the pixels within clear rectangles subtracted from the sum of the pixels within shaded rectangles. As is to be expected, rectangular features of this sort are rather primitive when compared to alternatives such as steerable filters. However, with the use of an image representation called the integral image, rectangular features can be evaluated in constant time, which gives them a considerable speed advantage over their more sophisticated relatives. Because each rectangular area in a feature is always adjacent to at least one other rectangle, it follows that any two-rectangle feature can be computed in six array references, any three-rectangle feature in eight, and any four-rectangle feature in just nine.

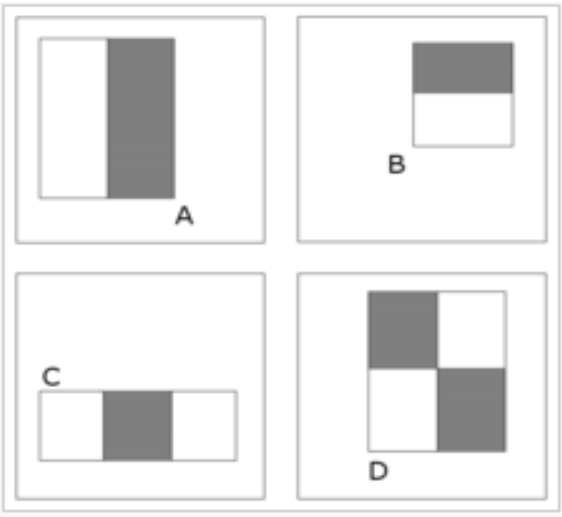

Fig A. Feature types by Viola and Jones

The speed with which features may be evaluated does not adequately compensate for their number, however. For example, in a standard 24x24 pixel sub-window, there are a total of 45,396 possible features, and it would be prohibitively expensive to evaluate them all. Thus, the object detection framework employs a variant of the learning algorithm AdaBoost to both select the best features and to train classifiers that use them. The strong classifiers are arranged in a cascade in order of complexity, where each successive classifier is trained only on those selected samples which pass through the preceding classifiers. If at any stage in the cascade a classifier rejects the sub-window under inspection, no further processing is performed and continue on searching the next sub-window (see figure at right). The cascade therefore has the form of a degenerate tree. In the case of faces, the first classifier in the cascade - called the attentional operator - uses only two features to achieve a false negative rate of approximately 0% and a false positive rate of 40%. The effect of this single classifier is to reduce by roughly half the number of times the entire cascade is evaluated.

The cascade architecture has interesting implications for the performance of the individual classifiers. Because the activation of each classifier depends entirely on the behavior of its predecessor, the false positive rate for an entire cascade is:

$$F = \prod_{i=1}^{K} f_i \quad \ldots\ldots\ldots \quad (1)$$

Similarly, the detection rate is:

$$D = \prod_{i=1}^{K} d_i \quad \ldots\ldots\ldots\ldots \quad (2)$$

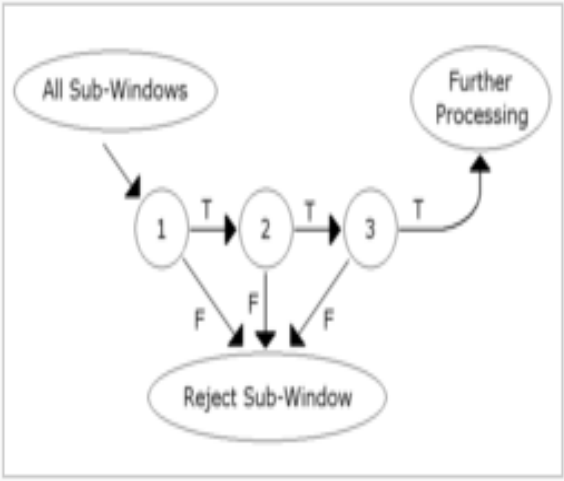

Fig B. Cascade Architecture

Thus, to match the false positive rates typically achieved by other detectors, each classifier can get away with having surprisingly poor performance. For example, for a 32-stage cascade to achieve a false positive rate of 10 - 6, each classifier need only achieve a false positive rate of about 65%. At the same time, however, each classifier needs to be exceptionally capable if it is to achieve adequate detection rates. For example, to achieve a detection rate of about 90%, each classifier in the aforementioned cascade needs to achieve a detection rate of approximately 99.7%.

B. Edge Detection

A facial emotion does not require the face texture to be considered. Thus using an edge detection the unwanted texture details can be eliminated, thus making it easier to work with the neural nets. This reduces the net training complexity and increases its efficiency.

The algorithm used for edge detection is Canny Edge Detection. This algorithm unlike others takes into consideration the noise factor. It runs in the following five steps:

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering
Vol. 4, Issue 5, May 2015

a) Smoothing

It is inevitable that all images taken from a camera will contain some amount of noise. To prevent that noise is mistaken for edges, noise must be reduced. Therefore the image is first smoothed by applying a Gaussian filter.

b) Finding Gradients

The Canny algorithm basically finds edges where the grayscale intensity of the image changes the most. These areas are found by determining gradients of the image. Gradients at each pixel in the smoothed image are determined by applying what is known as the Sobel-operator. First step is to approximate the gradient in the x- and y-direction respectively by applying the kernels shown in Equation (1).

$$K_{GX} = \begin{bmatrix} -1 & 0 & 1 \\ -2 & 0 & 2 \\ -1 & 0 & 1 \end{bmatrix}$$

$$K_{GY} = \begin{bmatrix} 1 & 2 & 1 \\ 0 & 0 & 0 \\ -1 & -2 & -1 \end{bmatrix} \quad \ldots\ldots\ldots\ldots (1)$$

The gradient magnitudes (also known as the edge strengths) can then be determined as an Euclidean distance measure by applying the law of Pythagoras as shown in Equation (2). It is sometimes simplified by applying Manhattan distance measure as shown in Equation (3) to reduce the computational complexity. The Euclidean distance measure has been applied to the test image.

$$|G| = \sqrt{G_x^2 + G_y^2} \quad \ldots\ldots\ldots\ldots (2)$$

$$|G| = |G_x| + |G_y| \quad \ldots\ldots\ldots\ldots (3)$$

Where:

G_x and G_y are the gradients in the x- and y-directions respectively. However, the edges are typically broad and thus do not indicate exactly where the edges are. To make it possible to determine this, the direction of the edges must be determined and stored as shown in Equation (4).

$$\theta = \arctan\left(\frac{|G_y|}{|G_x|}\right) \quad \ldots\ldots\ldots\ldots\ldots (4)$$

c) Non-Maximum Suppression

The purpose of this step is to convert the "blurred" edges in the image of the gradient magnitudes to "sharp" edges. Basically this is done by preserving all local maxima in the gradient image, and deleting everything else. The algorithm is for each pixel in the gradient image:

1) Round the gradient direction _ to nearest 45◦, corresponding to the use of an 8-connected neighbourhood.
2) Compare the edge strength of the current pixel with the edge strength of the pixel in the positive and negative gradient direction. I.e. if the gradient direction is north (theta = 90◦), compare with the pixels to the north and south.
3) If the edge strength of the current pixel is largest; preserve the value of the edge strength. If not, suppress (i.e. remove) the value.

d) Double Thresholding

The edge-pixels remaining after the non-maximum suppression step are (still) marked with their strength pixel-by-pixel. Many of these will probably be true edges in the image, but some maybe caused by noise or color variations for instance due to rough surfaces. The simplest way to discern between these would be to use a threshold, so that only edges stronger that a certain value would be preserved. The Canny edge detection algorithm uses double thresholding. Edge pixels stronger than the high threshold are marked as strong; edge pixels weaker than the low threshold are suppressed and edge pixels between the two thresholds are marked as weak.

e) Edge tracking by Hysteresis

Strong edges are interpreted as "certain edges", and can immediately be included in the final edge image. Weak edges are included if and only if they are connected to strong edges. The logic is of course that noise and other small variations are unlikely to result in a strong edge(with proper adjustment of the threshold levels). Thus strong edges will (almost) only be due to true edges in the original image. The weak edges can either be due to true edges or noise/color variations. The latter type will probably be distributed independently of edges on the entire image, and thus only a small amount will be located adjacent to strong edges. Weak edges due to true edges are much more likely to be connected directly to strong edges. Edge tracking can be implemented by BLOB-analysis (Binary Large OBject). The edge pixel sure divided into connected BLOB's using 8-connected neighbourhood. BLOB's containing at least one strong edge pixels are then preserved, while other BLOB's are suppressed.

C. Image Resizing

The captured Input image provided to the net should be of that particular size. Since different video capture device capture images of different size and also as the size of facial region does not remain the same the facial region needs to be resized to a particular size.

The image size used by the system is 60x60. This provides less complexity in neural network training and preferable accuracy.

The ImageProcessor.java class provides the functionality for resizing the image. It accepts the image as a buffered image and returns a resized buffered image. It also accepts

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering
Vol. 4, Issue 5, May 2015

the parameters for the height and width of the new image. Once the source image i.e. image to be resized is obtained it creates a new buffered image of the height and width specified and type same as that of the source buffered image. It then draws the source image onto the new buffered image using the bilinear interpolation.

D. Emotion Recognition

Once resizing is done the output image can be passed to neural network to obtain its confidence. Neural net training gives a .NNET file which contains the network details like the number of input nodes, hidden layers, their node counts, number of output nodes, edge weights, activation function, etc. Using the neuroph package import the trained .NNET file containing the facial expressions data. Also the image recognition plug in needs to be loaded and used as it provides features for converting the image data into tokens i.e. RGB color values. It also provides the output as a hash map which can be further resolved to obtain individual values.

The class FaceExpRecog.java provides the neural net functionality. It uses the neuroph.jar package for neural net functionality. Initially it loads the .NNET file saved for obtaining the neural net architecture for facial expressions. It then uses the image recognition plug in to obtain the image recognition functionality. Training can be done using codes or by using the easy neurons framework provided by neuroph. After loading all the resources it passes the test image to obtain the confidence. The confidence values obtained from the neural net is overridden by values that can be set manually to obtain better results. An edge detected face provides better results compared to textured face. However edge face should avoid occurrences of lightning effects that may lead to sharp edges.

E. Play Song According to matched Mood

The generated playlist take a list of sound files and create a playlist of these songs according to the emotion detection defined in database for each song, and then subsequently take one or more audio files according to matched emotion of previously- created image database and plays it. List of sound files is analyzed and written to a single database file. Various sound file formats are supported, including wav, mp3 and aac. our database files are encoded with .wav extension[1].

IV. EXPERIMENTS, RESULTS AND DISCUSSION

For evaluating the performance of the proposed system, we have created our own database of songs because there is no standard dataset of songs available in public domain. Main parameters of the system include image frames used for detecting the proper image which contains valid face, scaling factor used for processing the image, time of detecting emotion from image and quality of grabbed frame image. Different experiments are conducted to evaluate the effect of each of these four parameters on the performance of the proposed system.

A. Effect of image frames used for detecting the proper image which contains valid face:

There is a theoretical trade-off between the image frames used for detecting the proper image and the fragility and robustness of the resulting system against image post-processing such as compression and scaling. If the grabbed or selected frame does not contain face, it will cause much less distortion in the image quality of original image but the image will not survive against image post-processing operations such as feature extraction and emotion detection. On the other hand, if the selected frame image contains face, it will very well survive any feature extraction operation.

B. Effect of Scaling factor used for processing the image:

This experiment is aimed to evaluate the trade-off between quality factor used for compressing the selected image, file size of image and quality of the extracted features. The size of the original image (face image) is not in the form which neural network accepts. Neural network is the network which is trained for detecting emotions. Neural network accepts the fixed size image (i.e. 20*20). The neural network gives high accuracy with proper scaled images as compared to non scaled images.

C. Effect of time of detecting emotion from image:

In this experiment, we explored the effect of variation in the content of image on the quality of the extracted feature. We extracted features from selected images from our webcam. The other two parameters are fixed at their respective optimal values, and if the scaled image is used with good quality the time to detect emotion is optimized. The media player performance is highly dependent on time to detect emotion.

D. Effect of quality of grabbed or selected frame image:

In this experiment, we analyzed the performance of neural network depending on the quality of selected frame image. The quality effects the processing time and the accuracy of the media player to detect the emotion. Thus the good quality is ensured by using the viola john algorithm. The algorithm uses the cascades architecture.

The strong classifiers are arranged in a cascade in order of complexity, where each successive classifier is trained only on those selected samples which pass through the preceding classifiers. If at any stage in the cascade a classifier rejects the sub-window under inspection, no further processing is performed and continue on searching the next sub-window (see figure at right). The cascade therefore has the form of a degenerate tree. In the case of faces, the first classifier in the cascade - called the attentional operator - uses only two features to achieve a false negative rate of approximately 0% and a false positive rate of 40%. The effect of this single classifier is to reduce by roughly half the number of times the entire cascade is evaluated.

These are the snapshots of media player:

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering
Vol. 4, Issue 5, May 2015

Fig 1: In this snapshot, the list of options are given to the user to maintain his/her song collection.The user can perform add Media operation, or remove the added media and can manually play the song.

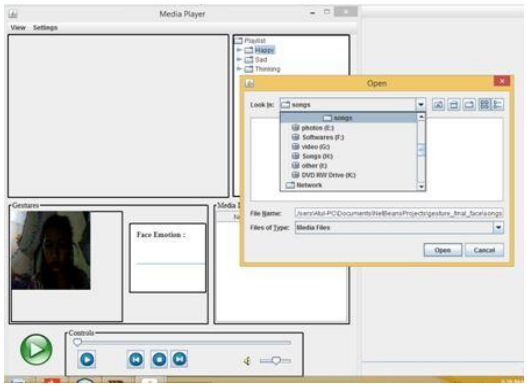

Fig 2. In the above snapshot, we can add the new songs to the existing collection of songs using browsing window. The system have the play button.

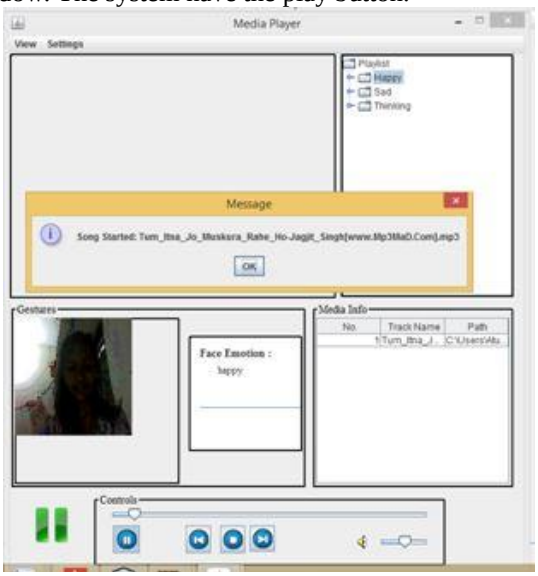

Fig 3. In the above snapshot, the emotion detection is started by pressing the play button. And the system has detected the emotion as "Happy". And the emotion-specific-playlist is created.

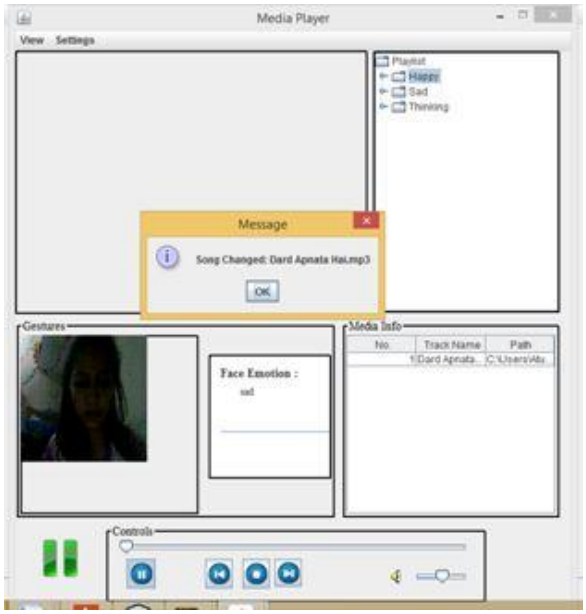

Fig 4. Similarly, the Sad emotion is detected and new playlist is created instantly.

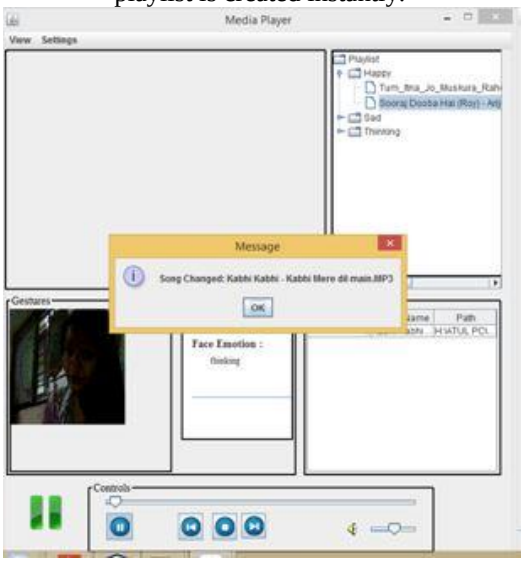

Fig 5. Thinking emotion has been detected.

Fig 6. In the above snapshot you can see the emotion-specific-playlist is created in the lower right.

DOI 10.17148/IJARCCE.2015.4560

ISSN (Online) 2278-1021
ISSN (Print) 2319-5940

International Journal of Advanced Research in Computer and Communication Engineering
Vol. 4, Issue 5, May 2015

V. CONCLUSION AND FUTURE WORK

In this project we implement the technique of emotional sensory world that the part of blue eye Technology. It is used to successfully recognize three different emotions of user. This developed methodology can be extended to other activities or application. After this successful capturing of emotion, it will help to tell about the mood of a person and also helps to cheer up by playing songs or other sources. The motive of this work proves to be a source of economic development over all and to bring blue eye technology in to the applications which are used in day to day life. The BLUE EYES technology ensures a convenient way of simplifying the life by providing more delicate and user friendly facilities in computing devices. This project can be used to improve the field of HCI. Developed application will have scope in many fields and can be used in improving personal entertainment applications. And also used in the controlling the media players of mobile handset. In the Driver state surveillance to watch the driver mood whether he/she is in sleepy mood.

REFERENCES

[1]. Mizna Rehman, Mamta Bachani, Sundas Memon, "Blue Eyes Technology", IEEE-2013.
[2]. Seminar Report on Blue ayes technology. www.google.com
[3]. Ligang Zhang," Facial Expression Recognition Using Facial Movement Features", IEEE Vol-2, Oct'11
[4]. Koutlas, A., & Fotiadis, D. I. (2008). An automatic region based methodology for facial expression recognition. In IEEE International Conference on Systems, Man and Cybernetics (pp. 662–666).
[5]. Blue eyes PPT slide share http://seminarprojects.com
[6]. "Hybrid Technique for Human Face Emotion Detection" Renu Nagpal, Pooja Nagpal , Sumeet Kaur Assistant Professor, (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 1, No. 6, December 2010.
[7]. Facial Expression Recognition Using Facial Movement Features , Ligang Zhang, Student Member, IEEE, and Dian Tjondronegoro, IEEE TRANSACTIONS ON AFFECTIVE COMPUTING, VOL. 2, NO. 4, OCTOBER-DECEMBER 2011.
[8]. R A Patil, Vineet Sahula, A. S. Mandal," Automatic Recognition of Facial Expressions in Image Sequences: A Review", 2010 5th International Conference on Industrial and Information Systems, ICIIS 2010, Jul 29 - Aug 01, 2010, India.
[9]. Vision System of Blue Eyes Kritika R.Srivastava, Karishma A. Chaudhary, Prof. H.J.Baldaniya Computer Engineering Department, Government Polytechnic For Girls, India
[10]. Viola and M. Jones, "Robust real-time object detection. International Journal of Computer Vision", 57(2):137–154, 2004.
[11]. Viola and M. Jones, "Rapid Object Detection using a Boosted Cascade of Simple Features", Conference on computer vision and pattern recognition,2001
[12]. Yubing Dong, Mingjing Li,Jie Li, "Image retrieval based on improved Canny edge detection algorithm", IEEE, DEC-2013.