

# Emotion Recognition Using Blue Eyes Technology

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## Abstract

*We cannot measure the world of science in terms of progress and fact of development. That thing no reached to the technology called as "Blue eyes technology" which is capable to recognize and control human emotions as well as feelings with help of gadgets. The elements eyes, fingers, speech are the body parts which helps to sense the emotions of humans. The paper is going to implement a new technology known as Emotion capturing world of blue eyes technology which recognize human emotions(sad, happy, surprised) using image processing techniques by extracting eye portion from the captured image which is then matched with stored images of database After recognizing mood the songs will be played to make human emotion level normal.*

**Keywords-** blue eyes, emotions, images, image processing, sense

## 1. Introduction

Blue in which term refer to Bluetooth, which makes possible robust wireless communication and the Eyes which refer to the eye movement which helps us to get a lots of exciting and useful information. The basic motivation behind this technology is giving power to computer like human. Consider that you are in a

environment where humans coordinates with computer system. You are in front of your computer system that can listen, speak, or even interact with you. It is able collect information about you and coordinate with you

in the way of special types of recognition like facial recognition, speech recognition, etc. It is also able to learn your emotions with help of simply touch of the mouse. It verifies you, feels your handlings, and starts coordinating with you .suppose You said the computer system to call to your girlfriend at his home. It recognize that situation through the mouse, dials your girlfriend at his home, and create a connection. cognition of human rely majorly on the capability to perceive, interpret, and integrate audio-visuals information and recognizing information.By adding extremely well perceptual capabilities to the computer systems enables computer systems to do work with human as partners.

Researchers wants to add more abilities to computer systems that will help them to behave like human beings , capture human presence, talk, listen, or even predict their emotions[4]. The BLUE EYES technology targets at building computational machines that have perceptual and sensational capability like of humans . It uses sensing technique which is non-obtrusive, using most developed video cameras and microphones which are able to recognize user's actions through the way of imparted

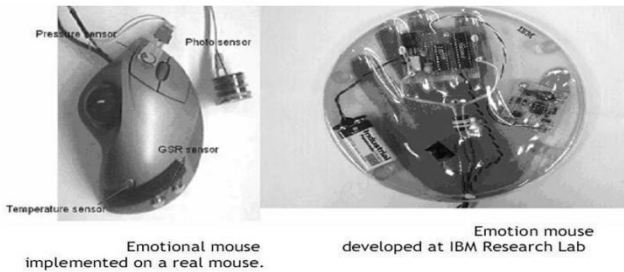
sensory capabilities. The system can able to know what a user actually require , where he is looking at, and even able to recognize states of users likewise physical or emotional . From the physiological information , the state of emotion which may be determine which is related to the work the use is doing on the computer system. The scope of the project is to have the computer system that is able to adopt the user in order to generate a best working situation in which the user would be most productive.

**II. Materials and Properties**

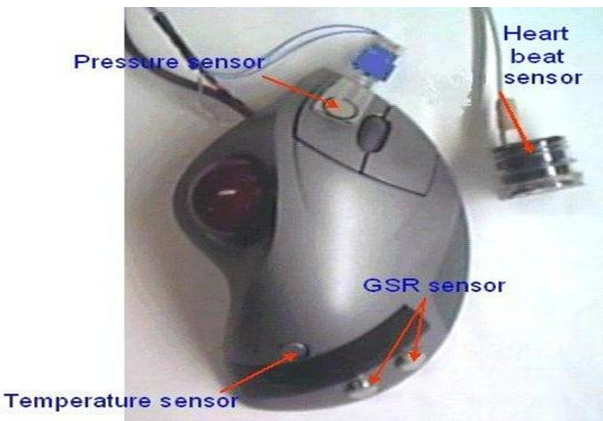
**TECHNIQUES OF BLUE EYES TECHHNOLOGY**

**A. Emotional Mouse:**

It obtains physiological data and emotional state such as number of heart beats, pressure on body, temperature of human body etc. through the presence of user with computer mouse where different sensors (such as sensor of pressure, heart beat sensor, GSR sensor, temperature sensor) are lies inside mouse. Then identify the personality of the user.



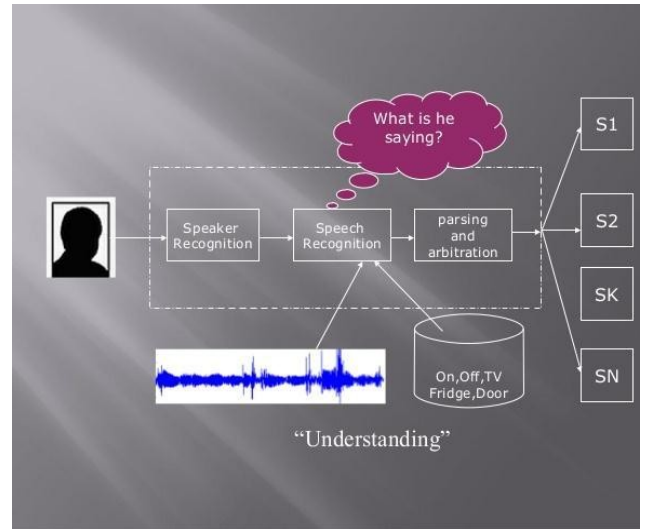
*Image 1.0(A)*



*Image 1.0(B)*

**B. Speech Recognition System and Artificial Intelligence**

The user talk to the computer system though the microphone and filtering of speech is done and stored in RAM. scanning of input word is done after that and also matched against the words which are internally stored. The main aim behind Pattern matching is to look for the best fit due to variations in various things like loudness, pitch, frequency difference as well as time gap etc .Based on the identification some action would be taken.



*Image 1.1*

**C. Gage and manual Cascading of input:**

Use of webcam is to speedy set the user’s glints and Pupils under various lightning situations and also wrap the mouse cursor to each and every new object to which user looking at. After user takes command on the target through hand near the target or ignores it and find for next one. Now a day’s, text classification has become a topic of interest to every individual. In the following we examine some basic and advance review papers related to text classification. In this paper [1] they have discussed about the basic architecture of the text classification process. The process includes reading the document,

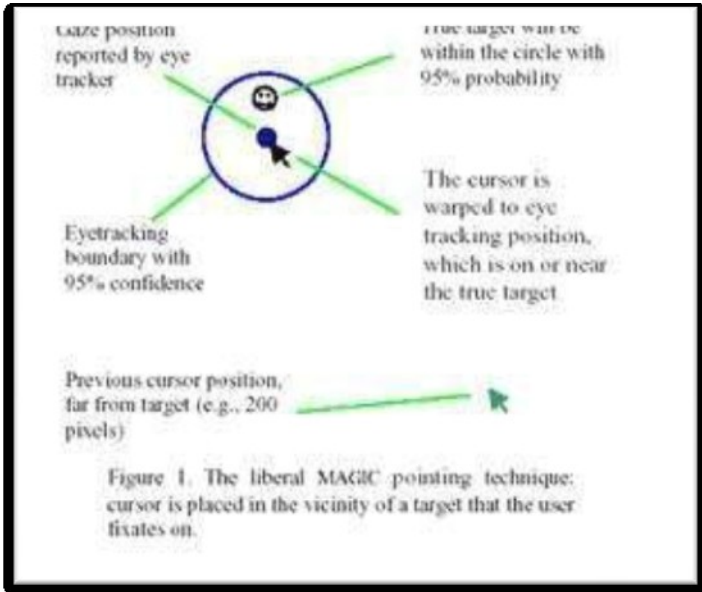


Image 1.2

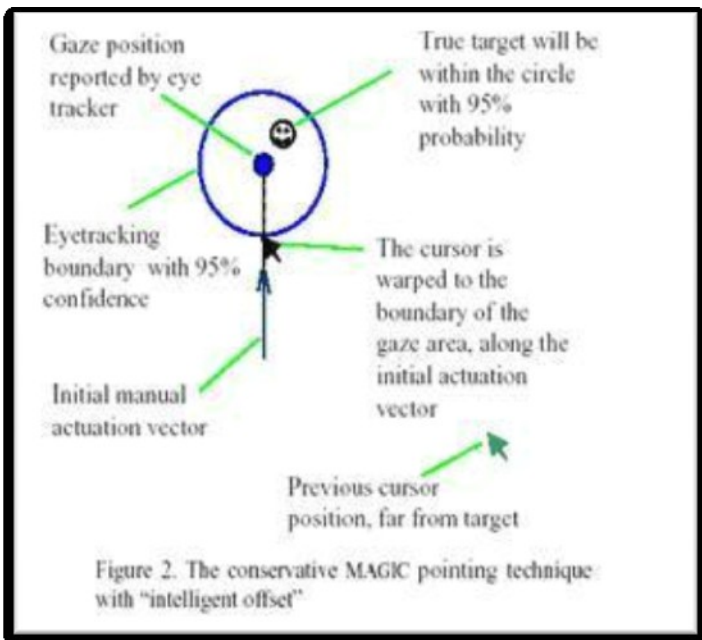


Image 1.3

**D. Tracker of Simple User Interest (SUITOR):**

Blue eye is supposed to enable the suitor which become active when the user makes an eye contact according to that it automatically identify user's area of interest and starts searching it. E.g.: If you are reading newspaper pops up the various newspaper websites links

**EMOTION SENSORY WORLD**

Human emotion is a visible manifestation of effective state, cognitive activity, emotional state and personality. There has been a lot of work done on blue eyes technology such as[4-8]. These papers presents number of techniques proposed o identify emotional state of a person According to Ekman[2], 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, anger, sadness, surprise).According to Ekman findings during :Happiness-the eyes are relaxed or neutral; the outer Anger-The brows are pulled down and inward; no sclera is shown in the eyes; Sadness-The brows are drawn together with the inner corners raised and the outer corners lowered or level; the eyes are glazed; Surprise-The eyebrows are raised and curved.

**III. METHDOLOGY**

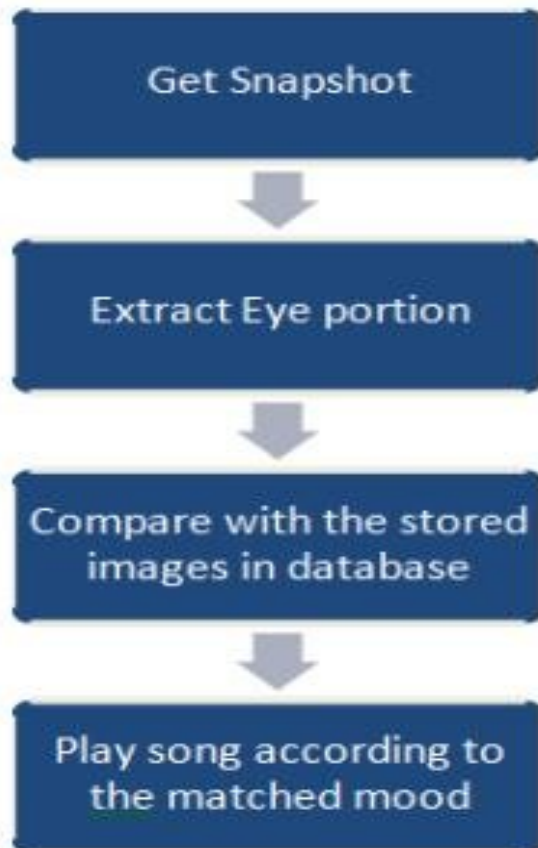
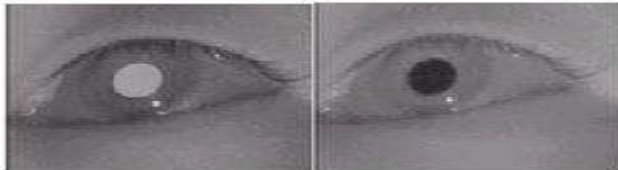


Image 1.4

In First step we get the snapshot of user through webcam which will be stored in database. After that we extract the exact eyes portion from whole face. There are some emotion images are already stored in database to which this captured image is compared. After this whole process the window in front of user the playlist of songs will be appeared. And also the song is played according the user's mood.



Bright (left) and dark (right) pupil images resulting from on- and off-axis illumination. The glints, or corneal reflections, from the on- and off-axis light sources can be easily identified as the bright points in the iris.

Image 1.5

IV. RESULTS & TABLES

The is data for which each subject is consisted of scores for the four physiological assessments of [ pulse, and GSA skin temperature, for each of the six emotions (happy sad, fear, surprise, angry, excitement )] across the five minutes of baseline as well as the test sessions. data was sampled to GSA was 80 times per second, temperature were also examined approximately 3-4 times per second and pulse was marked as a beat was recognized, approximately 1time per second., The motive behind calculating the difference between the baseline and test scores is To account for individual variance in physiology. Which results in Scoring that differed by more than one and a half standard deviations from the mean were treated as missing. By this criterion, twelve score were removed from the analysis. The results show the theory behind the Emotion mouse work is fundamentally sound and the result also includes that the system is able to capture emotions as well as movements of human eyes and other organism and successfully work as per requirement.

Table 1: Difference Scores.

|       |           | Anger  | Disgust | Fear   | Happiness | Sadness | Surprise |
|-------|-----------|--------|---------|--------|-----------|---------|----------|
| GSA   | Mean      | -0.66  | -1.15   | -2.02  | 22        | 0.14    | -1.28    |
|       | Std. Dev. | 1.87   | 1.02    | 0.23   | 1.60      | 2.44    | 1.16     |
| GSR   | Mean      | -41209 | -53206  | -61160 | -38999    | -417990 | -41242   |
|       | Std. Dev. | 63934  | 8949    | 47297  | 46650     | 586309  | 24824    |
| Pulse | Mean      | 2.56   | 2.07    | 3.28   | 2.40      | 4.83    | 2.84     |
|       | Std. Dev. | 1.41   | 2.73    | 2.10   | 2.33      | 2.91    | 3.18     |
| Temp  | Mean      | 1.36   | 1.79    | 3.76   | 1.79      | 2.89    | 3.26     |
|       | Std. Dev. | 3.75   | 2.66    | 3.81   | 3.72      | 4.99    | 0.90     |

Table 2: Standardized Discriminant Function Coefficients.

|       | Function |        |       |        |
|-------|----------|--------|-------|--------|
|       | 1        | 2      | 3     | 4      |
| GSA   | 0.593    | -0.926 | 0.674 | 0.033  |
| GSR   | -0.664   | 0.957  | 0.350 | 0.583  |
| Pulse | 1.006    | 0.484  | 0.026 | 0.846  |
| Temp. | 1.277    | 0.405  | 0.423 | -0.293 |

Table 3: Functions at Group Centroids.

| EMOTION   | Function |        |        |        |
|-----------|----------|--------|--------|--------|
|           | 1        | 2      | 3      | 4      |
| anger     | -1.166   | -0.052 | -0.108 | 0.137  |
| fear      | 1.360    | 1.704  | -0.046 | -0.093 |
| sadness   | 2.168    | -0.546 | -0.096 | -0.006 |
| disgust   | -0.048   | 0.340  | 0.079  | 0.184  |
| happiness | -0.428   | -0.184 | 0.269  | -0.075 |
| surprise  | -1.674   | -0.111 | -0.247 | -0.189 |

## V. CONCLUSION

The paper proposes two key results of emotional sensory world. First, observation reveals the fact that different eye colours and their intensity results in change in emotions. It changes without giving any information on shape and actual detected emotion. It is used to successfully recognize four different emotions of eyes. This developed methodology can be extended to other activities. Secondly results were achieved for converging in good emotions using a mixture of features, shapes, colours based on eye points. After this successful capturing of eye spots, 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 research proves to be a source of economic development over all.

## VI. Acknowledgement

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