Blue Eyes Technology- An Overview

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Abstract: The BLUE EYES TECHNOLOGY is an excellent method for this generation where we can able to find out the human six basic emotions (anger, disgust, fear, happiness, sadness, and surprise) through the computer system with different types of methods and equipment's inside the human body's like heartbeat, blood pressure etc. By this method the computers can find human expressions it acts like our personal computer. It also identifies the human beings confusions and interests within a fraction of seconds through this blue eyes technology. In this method expression glass is a most important process where the computers can determine the human emotions and feelings. This technology is aimed to the computers can also be a part of a human being in the world as a better company partners and they have the ability to talk, listen etc.

Keyword: *Blue Eye Technology (Bet), Blue Eyes: Overview, Expression Technology.*

I. INTRODUCTION

This concept is brought to know about the feelings and expression about the human being in the small computer with some special techniques like facial recognition, speech recognition etc. That can easily find out the people information and it also interact with the person who is in front of the computer as like your personal computer that can talk, listen etc. For example we can understand ones emotional feeling by reading their facial expressions. By adding these perceptual abilities of human race to computers, computers will be able to work together with human beings as their personal assistant or work partners. 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.[1]

Figure 1: Blue Eyes Technology

II. SYSTEM OVERVIEW

Blue Eyes system has two different types they are mobile measuring device and a central analytical system. The mobile device is connected with Bluetooth system which provides a wireless device that interacts between sensors worn through the operator and the central unit. ID cards are given to the operators and adequate user profiles on the central unit that easily provides a personalization data so that only the system divided into two parts Mobile measuring device (DAU), Central System Unit (CSU). Blue Eyes software's plays a major role and task in the system their main task is to look after working operator's physiological condition. To help the system by giving their information instantly on the operator's condition which changes the software perform at real-time buffering of the incoming data, real-time physiological data analysis and alarm triggering.
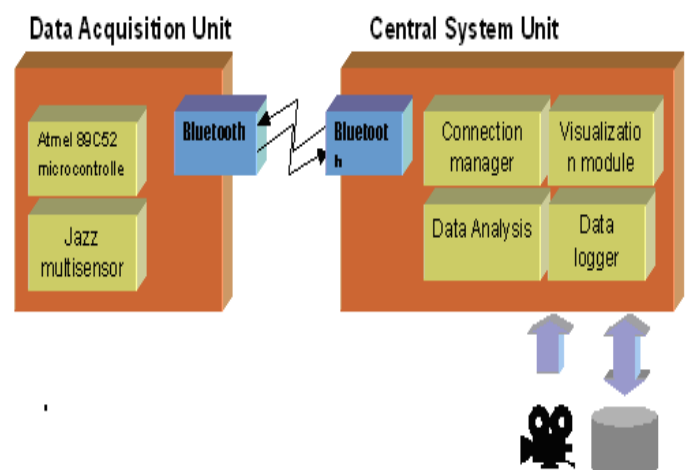

Figure 2: System Overview

III. EMOTION COMPUTING

Rosalind Picard (1997) describes that the human beings emotions are how much important to the computing community in the world. There are two parts in the computing: ability to detect the emotions and the ability to express emotions which are given to the computer. Not only for the emotion detection it is also used to know more about the human beings reaction as a Picard describes, but emotion detection method is very much important to an adaptive computer system.

A. History

Based on Paul Ekman's facial expression work, we can able to see the relation between a person's emotional state and a person's physiological measurements. From Ekman and others on measuring facial behaviours describe Ekman's Facial Action Coding System (Ekman and Rosenberg, 1997). One of his experiments needs some materials which is used to check whether it is working or not including pulse, temperature, blood pressure etc. At last he got all the records which is under the human emotions that is six basic emotions and he was succeed in his experiments. From this work, Dryer (1993) describes his experiment with physiological measures which can give different types of emotional states. The measures were taken from human beings where we can able to understand easily they are heart rate, skin temperature and somatic activity.

IV. RESULT

The data has been succeed for four physiological measurements [GSA, GSR, pulse, and skin temperature, for each of the six emotions (anger, disgust, fear, happiness, sadness, and surprise)] within the given time in the test sessions. GSA data was sampled 80 times per second, GSR and temperature in 3-4 times per second and pulse was recorded in 1 time per second. At last they achieved in their methods by proving an experiments in computer through human emotion with some special measures. [2]

A. Types Of Emotion Sensor

We have three different parts in our body where we can use and analysis this blue eye technology easily within a capable of time. They are:

For Hand:

Emotion Mouse:

This emotion mouse is literally means which is used and explained clearly in a computer system mouse with the exact example of human beings hands that are gives a reason for six basic emotions. This emotion mouse can be compared with the following they are the cardiac rhythm, the body temperature, electrical conductivity of the skin and other physiological attributes with their mood.
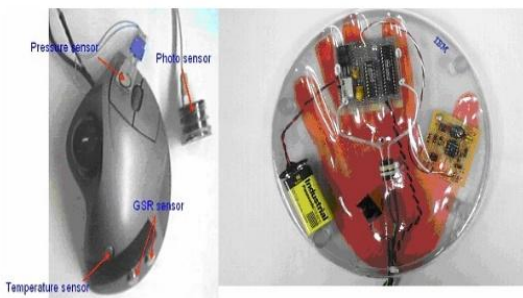

Figure 3: Emotion Mouse

Sentic Mouse:

The sentic mouse is an alternative computer mouse which covers a directional pressure sensor of human and computer for aiding in recognition of emotional valence.

Figure 4: Sentic Mouse and Expression Glass

For Eyes:

Expression Glasses:

A wearable device which allows any viewer to visualize the confusion and interest levels of the wearer. This method helps the computer to find the human beings interest or a confusion which they are handling inside themselves that can be easily found by this system. This is very much useful for this experiment because all the emotions will be found through the eyes at first so that we can allow the viewer to analysis through expression glasses.

- Magic Pointing
- Eye Tracking

For Voice:

- Artificial Intelligence Speech Recognition

V. MANUAL AND GAZE INPUT CASCADED POINTING [MAGIC]

This work gives a variety and uses in utilizing eye gaze for computer input. Gaze tracking has long been considered as an alternative or potentially superior pointing method for computer input. We believe that many fundamental limitations exist with traditional gaze pointing. In particular, it is unnatural to overload a perceptual channel such as vision with a motor control task. We therefore propose an alternative approach, dubbed MAGIC (Manual and Gaze Input Cascaded) pointing. With such an approach, pointing appears to the user to be a manual task, used for fine manipulation and selection. However, a large portion of the cursor movement is eliminated by warping the cursor to the eye gaze area, which encompasses the target. Two specific MAGIC pointing techniques, one conservative and one liberal, were designed, analysed, and implemented with an eye tracker we developed. Our key idea is to use gaze to dynamically redefine (warp) the "home" position of the pointing cursor to be at the vicinity of the target, which was presumably what the user was looking at, thereby effectively reducing the cursor movement amplitude needed for target selection. [3]

A. Artificial Intelligent Speech Recognition

It is important to consider the environment in which the speech recognition system has to work. The grammar used by the speaker and accepted by the system, noise level, noise type, position of the microphone, and speed and manner of the user's speech are some factors that may affect the quality of speech recognition .When you dial the telephone number of a big company, you are likely to hear the sonorous voice of a cultured lady who responds to your call with great courtesy saying "Welcome to company X. Please give me the extension number you want". You pronounce the extension number, your name, and the name of person you want to contact. If the called person accepts the call, the connection is given quickly. This is artificial intelligence where an automatic call-handling system is used without employing any telephone operator. [4]

B. The Simple User Internet Tracker [Suitor]

Computers would have been much more powerful, had they gained perceptual and sensory abilities of the living beings on the earth. What needs to be developed is an intimate relationship between the computer and the humans. And the Simple User Interest Tracker (SUITOR) is a revolutionary approach in this direction. IBM's Blue Eyes research project began with a simple question, according to Myron Flickner, a manager in Alma den's USER group: Can we exploit nonverbal

cues to create more effective user interfaces? One such cue is gaze the direction in which a person is looking. Flickner and his colleagues have created some new techniques for tracking a person's eyes and have incorporated this gaze-tracking technology into two prototypes. One, called SUITOR (Simple User Interest Tracker), fills a scrolling ticker on a computer screen with information related to the user's current task. SUITOR knows where you are looking, what applications you are running, and what Web pages you may be browsing. "If I'm reading a Web page about IBM, for instance," says Paul Maglio, the Alma den cognitive scientist who invented SUITOR, "the system presents the latest stock price or business news stories that could affect IBM. [5]

Advantages

- This blue eyes technology is used for the Prevention from dangerous incidents.
- It is used to monitors the Physiological condition.
- Operator's position detection in blue eyes technology easily.
- The reconstruction of the course of operator's work

Disadvantages

- Doesn't predict nor interfere with operator's thoughts.
- We cannot force the operator to work directly in the blue eyes technology.

CONCLUSION

The BLUE EYES technology ensures a convenient way of simplifying the life by providing more delicate and user friendly facilities in computing devices. Now that we have proven the method, the next step is to improve the hardware. In future we can able to expect more because of these features, and it is very important and useful for this generation people. It may even reach your hand held mobile device. Any way this is only a technological forecast. The Blue Eyes system is developed because of the need for a real-time monitoring system for a human operator. 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. Blue Eyes emphasizes the foundations of the project – Bluetooth technology and the movements of the eyes.

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