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Blue Eye Technology

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A B S T R A C T

- Nowadays, technology has progressed to the point that we are sitting in front of a computer that can detect and manipulate human emotion, referred to as "BLUE EYE TECHNOLOGY." - Nowadays, technology has progressed to the point where we are sitting in front of a computer that can detect and regulate human emotion, referred to as "BLUE EYE TECHNOLOGY." In this technology, equipment that can detect human emotion levels, such as facial and speech recognition, are used. Blue Eye Technology's technology can recognize our emotions with a click of a mouse, verify our identification, sense our gifts, and begin communicating with us. This research discusses new approaches called as Emotion Sensory World of Blue Eye Technology, which use image processing techniques to recognize human emotion (sad, glad, surprised).

Keywords: Blue Eyes, Emotionns, Image Processing, Sense, Machine Vision

1.INTRODUCTION

Consider a world in which people communicate with computers. It can acquire information about you and interact with you using advanced techniques such as facial recognition and speech recognition. At the click of a mouse, it can even recognize your emotions. It confirms your identification, senses your gifts, and begins communicating with you. The ability to receive, understand, and integrate audio-visuals and sensor data is crucial to human cognition

1.1Structure

Blue Eye System Software's primary responsibility is to monitor the physiological status of working operators. The software performs real-time buffering of incoming data, real-time physiological data processing, and alarm triggering to display an example reaction on the Operator's state. There are several functional modules available. The Blue Eyes program serves as the system's core, facilitating data transfer between other system modules (e.g., raw data from the Connection Manager to data analyzers, processed data from data analyzers to GUI controls, additional data analyzers, and data). The supervisors have a user interface provided by the visualization module. This software allows the working operator's physiological condition to see a preview of a selected visual source and accompanying sound stream. When an alarm message is received, the supervisor is immediately notified. The goal of the BLUE EYES technology is to create computational computers with human-like perception and sensory abilities. It employs a nonobtrusive sensing technology that makes use of most modern video cameras and microphones to identify the users' movements through the use of sensory abilities provided to them. The computer can figure out what a user wants, where he's looking, and even his bodily and emotional states. BLUE EYES stands for Blue tooth (which permits wireless connection) and eyes since eye movement allows us to absorb a great deal of interesting and useful information.

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1.2 Model

To determine a person's emotional state, an adaptable, clever computer system is used. According to a study (Dryer & Horowitz, 1997), persons with personalities that are similar or compliment each other work well together. According to Dryer, individuals perceive their computer to have a personality (1999). It is critical to create computers that function well with their users.

1.3 Theory

On the basis of Paul Ekman's facial expression study, a correlation between a person's emotional state and physiological data has been demonstrated. Ekman's Facial Action Coding System is described in selected works by Ekman and others on measuring facial behavior (Ekman and Rosenberg, 1997). One of Ekman's investigations involved participants wearing devices that recorded data such as pulse, galvanic skin response (GSR), temperature, somatic movement, and blood pressure. The participants were told to imitate six different facial expressions that represented the six primary emotions. He is defined as having six basic emotions: anger, fear, sadness, disgust, delight, and surprise. Dryer (1993) used this research to figure out how to use physiological measures to discern between different emotional states. Some of the parameters utilized are GSR, heart rate, skin temperature, and general somatic activity (GSA). Data analysis can be divided into two categories. The initial study performed to determine the dimensionality of the data is a multidimensional scaling (MDS) approach.

1.4 Result

The data of each individual consists of scores for four physiological evaluations [GSA, GSR, pulse, and skin temperature, for each of the six emotions (anger, disgust, fear, happiness, sorrow, and surprise)] across the five minute baseline and test sessions. GSA data was collected 80 times per second, and typically 3-4 times GSR and temperature were given, as well as 1 time pulse when a beat was detected. To account for individual physiological variance, the difference between baseline and test scores was measured. If scores deviated by more than one and a half standard deviations from the mean, they were considered missing. Twelve scores were eliminated from the study based on this criterion. The findings demonstrate that the idea underlying the Emotion mouse's operation is fundamentally correct. The physiological measurements are correlated using a correlation model. To create a correlation model, a calibration procedure is used. The statistical analysis of calibration signals created by users with emotions that are measured or known at calibration time is used to interpret the calibration process with a baseline attribute-to-emotion correlation..

2.llustrations

2.1 Emotion Sensors

1)Types of Emotion Sensors for Hand:

a) Emotion Mouse

b) Sentic Mouse

2)Types of Emotion Sensors for Eyes:

a) Expression Glasses

b) Magic Pointing

c) Eye Tracking

2.1.1 Emotion Mouse

One goal of human-computer interaction is to create an active, smart computer system (HCI). This type of project could involve gesture recognition, facial recognition, eye tracking, and speech recognition. Another non-invasive technique to learn about someone is to touch them. People utilize computers to collect, store, and alter data. In order to create smart computers, the computer must begin gathering information about the user. The mouse is one of the proposed methods for obtaining user information through touch via a computer input device. The physiological data collected from the user can be used to determine the user's emotional state. The user's emotional state is linked to the task he or she is working on at the time. A user model will be created in order to get a sense of the user's personality over time. The goal of the project is to provide a more productive working environment by allowing the computer to adapt to the user. Emotion Mouse (Fig. 1)

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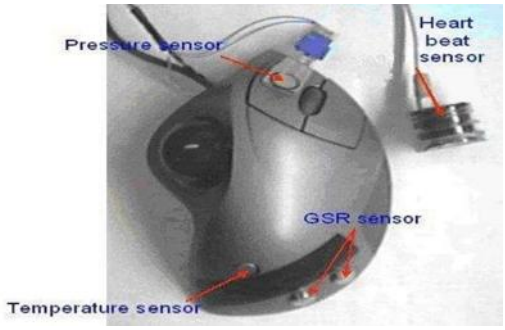

Fig 1:- Emotion Mouse

2.1.2Sentic Mouse

The Sentic Mouse is an experimental concept inspired by Peter J. Lang, Ward Winton, Lois Putnam, Robert Kraus, and Dr. Manfred Clynes' work.This lays the groundwork for developing a tool to assess a person's emotional valence reaction. Emotional valence refers to any emotional response to stimuli, ranging from positive (associated with pleasure, liking, and attraction) to negative (related with dissatisfaction, dislike, avoidance, or aversion). Quantitative values can be applied to emotions in this experiment, resulting in a predictive model for emotional theory. Peter J. Lang and colleagues invited participants to score their emotional response to a sequence of images. Ward Winton, Lois Putnam, and Robert measure the subject's heart rate and skin conductance as he is being tested in this experiment. Dr. Manfred Clynes conducted a series of sentic studies in which data was collected from every vertical and horizontal component of finger pressure. -Sensitive Mouse (Fig. 2)

Fig 2: -Sentic Mouse

2.2 Eye

2.2.1 Expression Glass:

Expression Glass is an application-based wearable gadget that serves as an alternative to general-purpose machine vision face recognition systems. These emotion glasses detect all facial muscle movements and apply pattern recognition to determine meaningful expressions such as perplexity or interest. For these types of glasses, a prototype has been created and tested. The employment of hidden piezoelectric sensors in a visor extension to a pair of glasses provides the qualities of compactness, user control, and anonymity. Untrained users may recognize an expression with a 94 percent accuracy using these glasses. Recognize the expressions of perplexity or curiosity with 75% accuracy. Significant progress is being achieved as a result of the extent of use and some feedback. With extended use, it appears that going above these levels is achievable. Expression Glasses (Figure 3)

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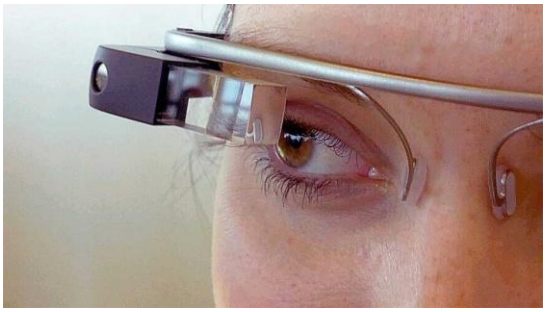

Figure3: ExpressionGlasss

3.RESULTS AND DISCUSSION

The Blue Eyes system provides technical means for monitoring and recording the physiological condition of human workers.

1.Measurement of visual attention (eye motility analysis)

2.Detection of the operator's position and monitoring of physiological conditions (pulse rate, blood oxygenation) (standing, lying)

3.Recorded data playback, physiological data, operator's voice, and overall picture of the control room

The Blue Eyes system can be used in any work setting that requires constant operator attention:

1.In the control rooms of power plants

2.Control towers for aircraft

3.Professional chauffeurs

4. Conclusion

The BLUE EYES technology enhances the computer's intelligence and makes it behave like a person. It makes people's lives easier by giving more opulent and user-friendly services in computer gadgets. We've shown the process thus far; the next step is to upgrade the hardware.

By giving more delicate and user-friendly features in computing equipment, Blue eyes technology ensures a convenient manner of simplifying life. The next step is to upgrade the hardware now that the process has been proved. It will be preferable to employ smaller and less intrusive units to obtain information about the user rather than unwieldy modules. It won't be long before this technology infiltrates your home, making you more sedentary. The blue eyes technology is designed to be a stress reliever, and it is powered by smart technology that analyzes facial expressions to determine the level of stress being managed. Industry, transportation, military command centers, and operating theaters are all examples of new possibilities.

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