BLUE EYES TECHNOLOGY

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Abstract

Progress and development cannot be used to gauge the state of science. It demonstrates the capabilities of the human intellect. It has now developed to the point where "Blue Eyes Technology" is able to detect and regulate human emotions and sentiments via devices. The human body's perception of emotion can be detected through the eyes, fingers, and speech. This study applies a novel method called Emotion Sensory World of Blue Eye Technology, which uses image processing to extract the eye region from a captured image and compare it to images that have already been stored in a database to identify human emotions (such as sadness, happiness, excitement, and surprise). Songs will be played to restore the normal range of human emotion after the mood has been determined.

KEYWORDS: Eyes that are blue, Senses, Emotions, and Visual Processing.

I.INTRODUCTION

The word "blue" refers to Bluetooth, a reliable wireless communication technology. Eyes, since they give us a lot of interesting and important information. Giving the computer human intelligence is the central concept of this technology. Blue Eyes tracks a user's movements and collects critical data using sensing technology. The user's physical, emotional, or informational status is then identified using this data, which can be used to make the user perform expected activities or deliver expected information in order to boost productivity. Blue eyes can be supported by Pod cars, Pong robots, iPads, and cell phones. Part II describes several Blue Eyes Technology [2] techniques, while Section III describes the Emotion Sensory World approach. Section IV defines the technique, Section V draws a conclusion, and Section VI discusses further research.

II. Techniques of Blue Eyes Technology

A. Empathetic Mouse:

The mouse, which has multiple sensors (including a pressure sensor, heartbeat sensor, GSR sensor, and temperature sensor) installed inside it, collects physiological data and information about the user's emotional state by sensing their touch. The personality of the user is then established.

B. Cascading Manual And Gage Input (Magic Pointing)*:*

The user's glints and pupils are instantly determined using a webcam under varying, realistic lighting conditions, and the pointer is wrapped to each new object the user stares at. The user either controls the target by placing a hand near it or dismisses it and moves on to the next one.

C. Artificial Intelligent Speech Recognition:

The user speaks into the computer's microphone, and that voice is filtered and stored in memory. The words being input are scanned and contrasted with the words already present. Finding the best fit despite variations in loudness, pitch, frequency, time interval, etc. is the goal of pattern matching. As a result of the identification, action is performed.

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

When the user makes eye contact with a blue eye enabled suitor, they turn on and quickly recognise the user's search zone and begin searching there. For example, if you read the headline, the story will show in your browser window.

III. Literature Survey

Science cannot be gauged in terms of growth and advancement. It demonstrates the capabilities of the human intellect. The "Blue eyes technology" which can detect and regulate human emotions and feelings through devices has now been developed. The human body's perception of emotion can be detected through the eyes, fingers, and speech. This study employs a revolutionary method known as Emotion Sensory World of Blue Eyes technology, which recognises human emotions (such as sad, joyful, excluded, or shocked) utilising image processing techniques by removing an eye piece from a captured image and comparing it to photographs that have been saved in a database. Songs will be played to restore the normal range of human emotion after the mood has been determined.[1]

IV. WORLD OF EMOTION SENSORY

The effective state, cognitive activity, emotional state, and personality are all apparent manifestations of human emotion. Several studies have been conducted on blue eyes technology, including [5–9]. These publications outline several methods for determining a person's emotional state. According to Ekman [3], the biological programme known as the "facial affect programme," which is partially innate, establishes the connections between various facial muscle movements and specific emotions (happiness or blissfulness, anger or enrage, sorrow or sadness, surprise or amaze). Ekman made the following observations:

Anger: The brows are lowered and inward, and the sclera of the eyes is not discernible.;

Happiness: The gaze are unfocused or unflinching.

Sorrow is characterised by the brows being brought together, the outer corners of the eyes being glazed, and the inner corners of the eyes being lifted.

The eyebrows are lifted and curved, which **surprises**.

Because the eyes are the "gateway to the soul" and may reveal a lot about a person's internal state just by looking into them, this study proposes a revolutionary technique called "world of Emotion Sensory" of blue eyes technology. A camera will snap an image of a person and focus on the eye area using a texture filtering process, which is then compared to a database of photographs. A song is played after the window displays the image that most accurately captures the user's emotions in order to help them feel more normal.

FIGURE:4.1: Blissful

(a)

FIGURE:4.2: Enrage

(b)

FIGURE:4.3: Sorrow
(c)

FIGURE:4.4: Amaze
(d)

V. Materials and Methods

Step1: Get Snapshot

When someone focuses their attention on their face and taps "Enter," a video stream begins and a photograph is captured. Render a frame-by-frame image from the video input object obj as fast as feasible. The information returned is unrelated to the video input object's Frames Per Trigger property and has no influence/effect on the Frames Available or Frames Acquired values.

One-by-one video input object is required for the object obj. Frame is given back as an H-by-W-by-B matrix.

H → The height of the image .

W → The ROI Position property's picture width.

B → The number of bands listed in the Number of Bands that are connected to the object.

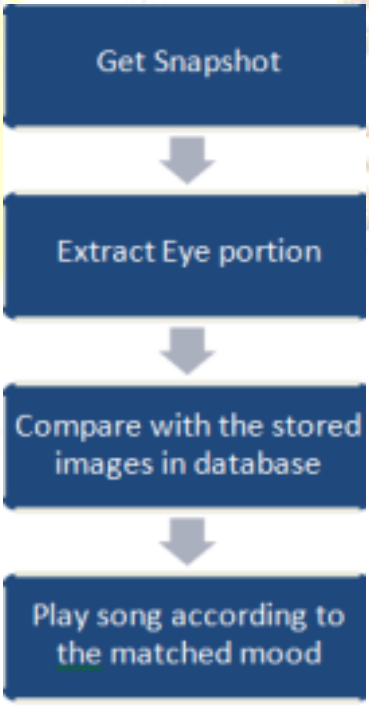

FIGURE:5.1: Person snapshot

$_2^{nd}$ Step: Eye Portion Extraction

i. Face Parts Detection:

a. Input criteria

Detector: A device or an object especially made for detection. The detector's data that should be in uint8.

The bounding box's thickness is optional.

b. Output criteria

It constructs bounding boxes for the face, left eye, right eye, mouth, and nose, flaunt images with faces in them in boxes, and stores these faces as cell arrays in the build. A face features detector object with threshold values for each component is created by the detector.

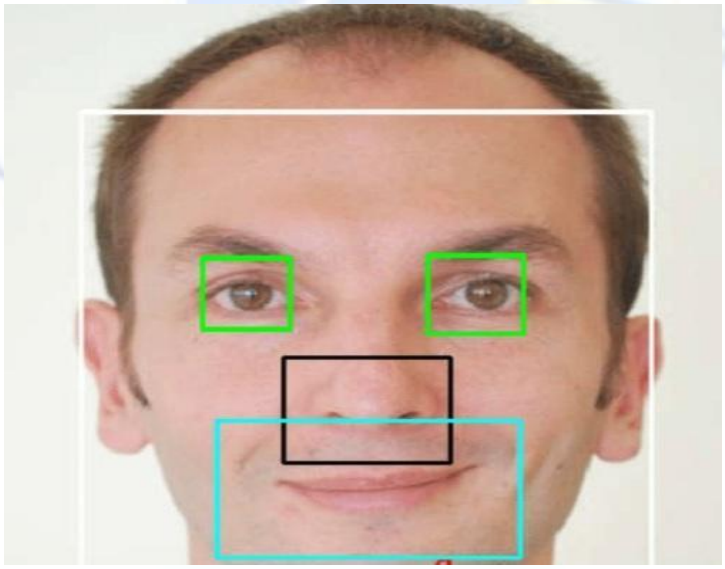

FIGURE:5.2: Detection of Face Parts

ii. Recognizing of Shape and Detection of Edge:

1. After obtaining the eye component, we classify it in accordance with the eye's shape and texture and compare it to the already-existing photos; this procedure is known as a shapes classifier.

2. Simply distinguishes the box limits of the face from the ocular region.

3. Change an RGB image to a grayscale one.

4. Limit the image To get ready for boundary tracing utilising black and white borders, convert the image to black and white.

5. Flip the binary image over.

6. Recognize the limits Just pay attention to the boundaries on the outside. By prohibiting bw borders from looking for interior contours, option "no holes" will hasten the processing.

7. Identify the qualities of shapes.

8. Sort Forms based on their characteristics Flat, swollen, wrinkled, etc.

FIGURE:5.3: Eye Portion Extraction

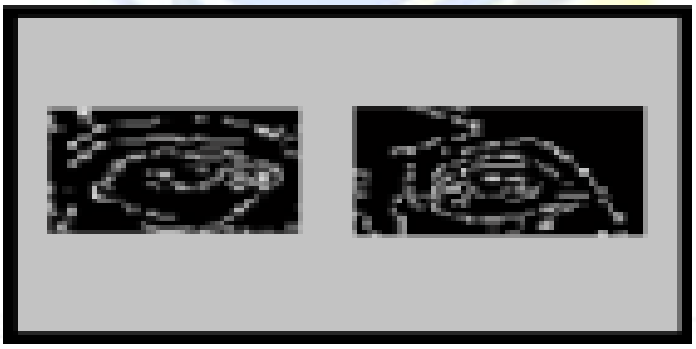

FIGURE:5.4: RGB to Grayscale conversion

3rd Step: Comparison with stored Images in data base:

The goal is to develop a function that returns the difference between two postures in the [0, 1] range by matching the taken image with data entries in our database, which are then converted to grayscale. This means that for the two images that are being compared, posture and, by extension, the subject's emotions, are our only interests (a grey region). As an example, if we pass 4 to my function, the result will be 0. (Because if postures or feelings are identical, the outcome is 1; otherwise, it is not).

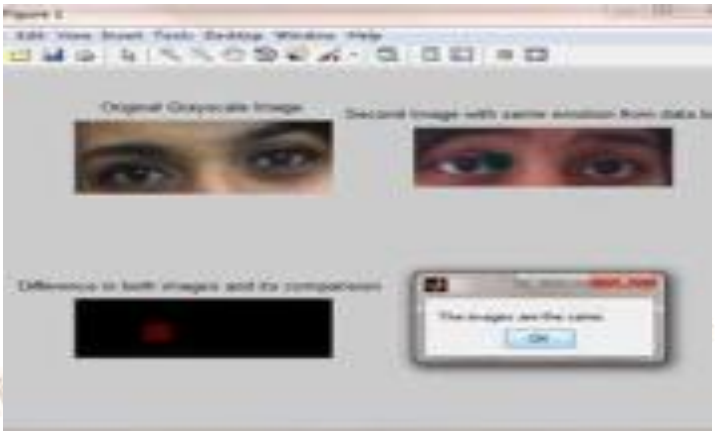

FIGURE:5.5: Comparison of eye with the store images

In the database used for training, there are 25 photos. To create a database, open "create db.m" and load the picture. It will recognise the eyes, save the left and right eyes in a database, and save this information in the file "Database.dat".

database{a,b}

a=entry /serial no,

b=1 Left Eye

b=2 Right Eye

b=3 emotion(mood's) name

Coding can be modified to store multiple entries in a database:

('database.dat', '-mat');

%entries=size (database, 1);

and change: database{1,1}=x;

with database{entries+1,1}=x;

then it will add a new entry each time and save all entries in database. database {1,2}=b;

with database{entries+1,2}=y;

database {1,3}='x';

with database{entries+1,3}='x';

(or)

a=entry/serial no, b=1 in database Right Eye b=2 Left Eye b=3 Emotion(mood's) name

Coding can be modified to store many entries in a database:

('database.dat', '-mat'); %entries=size (database, 1); and database1,1=x with database entries+1,1=x will add a new entry each time and save all of the database's current entries.

database 1,2, equals "y," with database entries 1,2, equal "y," and database 1,3, equal "x," with database entries 1,3, equal "x,".

FIGURE:5.6: Emotions of eye

By flattening the matrix into a vector and calculating the correlation coefficient, the results were close to 0.987, suggesting a perfect match. Although it wasn't necessary in this case, we could have aligned the images using regular alteration and measured scaling.

4th Step: Play a music that fits your mood.

The resulting script creates a database of these sounds from a list of audio files by utilising the emotion detection specified in the database for each song, and then plays one or more audio files that correspond to the emotion of the earlier created image database. The analysis of a collection of sound files yields a single database file. Wav, mp3, and AAC sound file formats are supported. Our database files are encoded and have the.wav extension. The database sound file can then be saved as a wav file using the WAVWRITE method and then loaded using the WAVREAD function. The sampling rate (Fs) in Hertz, as well as the number of bits per sample (n bits) utilised to encode the data. The sampling rate (Fs) in Hertz and the number of bits per sample (n bits) used to encode the data in the file are returned by the played sound.

VI. RESULT AND FUTURE WORK

This research project can be expanded to include household equipment that, using blue eye technology, can carry out a variety of duties inside the home. A number of human occupations can be reduced in size using emotion sensory world tools as the world digitises and we move closer to a robotic future. Robots are equipped with a tool or system that uses their eyes to detect emotions. The robot can then respond appropriately.

FIGURE:6.1: Waveform of song played

ARTIFICIAL INTELLIGENT SPEECH RECOGNITION

A certain setting for the voice recognition system to operate in is desired. The grammar used by the speaker and accepted by the system, noise level, noise type, microphone position, and the user's speaking pace and style are a few factors that may affect the quality of speech. When you dial a large corporation's phone line, you are likely to hear the grandiloquent voice of a cultured lady who responds to your call with kindness by stating, "Welcome to business A." Please provide me with the desired extension number. You state the extension number, your name, and the name of the individual you wish to contact. If the person being phoned accepts the call, the connection is made immediately. Artificial intelligence enables the adoption of an automatic call-handling system without the need for a phone operator.

 The Technology:

In essence, artificial intelligence (AI) is based on two concepts. The first is the fact that it includes research on how people think. The second is that it incorporates machine representations of those operations (like computers, robots). The behaviour of a machine that performs tasks just like human intelligence is known as artificial intelligence (AI). AI gave computers intelligence, making them more practical and affordable than natural intelligence. Natural language processing (NLP) is an artificial intelligence method for communicating with a computer in a human language such as English. The action is started by the NLP software after reading the input. Input words are scanned and compared to internally stored lists of known words. When a key word is recognised, something happens. In this way, a user can interact with a computer in their own language without the need for special commands or computer languages, which eliminates the necessity for software developers to construct programmes in specialised languages.

‘VII. APPLICATIONS

1. One of the primary benefits of a speech recognition system is that it allows users to perform numerous tasks at the same time. so the user may focus on observation and manual labour while yet having voice input commands for machine control. Speech processing is also used extensively in military operations. One example is weapon control by voice. Pilots can talk into their mics to communicate with computers using reliable voice recognition technology; they don't even need to use their hands.

2. Another fascinating example is a radiologist who analyses hundreds of X-rays, ultrasonograms, and CT scans while simultaneously dictating findings to a voice recognition system connected to word processors. Instead of typing out the words, the radiologist may focus on the photos.

3.Computer voice recognition could be utilised for bookings at hotels and airlines. Only the user's needs must be stated in order to make a reservation, cancel a reservation, or enquire about the schedule.

4. Provide safeguards against threatening situations.

5. Brought about a decline in ecological effects Threat of financial loss to human life.

6. The Blue Eyes system offers technical tools for keeping track of and documenting the physical state of the human operator. The key features of the system are:

7. Visual monitoring of attentiveness (analysis of eye motility)

8. Monitoring of physiological status (pulse rate, blood oxygenation)

9. Detect position by the operator (sitting,standing)

10. Acquiring wireless data with Bluetooth technology.

11. user-defined alarm triggering in real time.

12. Physiological data, voice of the operator and an overview of the recording from the control room.

VIII. CONCLUSION

The paper suggests two major conclusions about the emotional sensory environment. First, observation demonstrates that altered emotions are caused by changing eye colours and their intensity. Without providing any shape or real observed emotion information, it changes. It is used to successfully identify four distinct eye emotions. It is possible to apply this created methodology to various endeavours. Second, results for convergent positive feelings were obtained utilising a combination of features, forms, and colours based on eye locations. Following the successful capture of eye spots, it will be possible to determine a person's attitude and provide cheer by playing music or other sources. This study's goal ultimately turns out to be a source of economic growth. where it can use blue eye technology to carry out a variety of duties inside the house. A number of human occupations can be reduced in size using emotion sensory world tools as the world digitises and we move closer to a robotic future. Robots are equipped with a tool or system that uses their eyes to detect emotions. The robot can then respond appropriately.

REFERENCES

[1] Mizna Rehman Mizna; Mamta Bachani; Sundas Memon, **"Blue eyes technology",** eighth international conference on digital management ,ICDIM (2013).

[2] Slide Sharing by S. Madhumitha, Blue Eyes Technologies (March 2013).

[3] Texture-Based Expression Modeling for a Virtual Talking Head,Daniel Hoglind, Stockholm Sweden;Stockholm University, (2006).

[4] Psychologist World, Eye Reading Language (Body Language) ,Psychologist World (July 2013).

[5] A Novel Neuro Fuzzy Method to Human Emotion Determination by Suvam Chatterjee and Haoshi was published in the International Conference on Digital Image Computing Techniques and Applications (DICIA) on (2010).

[6] "Human Computer International Research And Realization Based On Leg Movement Analysis", Apperceiving Computer And Intelligence Analysis (ICACIA), 2010 International Conference. Fu Zhizhong, Lu Lingqiao, and Xian Haiying Xuju.

[7] Renu Nagpal, Pooja Nagpal, and Sumeet Kaur, "Hybrid Method for Human Facial Emotion Detection," International Journal of Advanced Computer Science And Applications, Vol. 1 No. 6 (December 2010).

[8] Adriana Tapus and Amir Aly, "Towards an Online Fuzzy Modeling For Human Internal States Detection," 2012 12th Internal Conference On Control, Automation Robotics And Vision, Guangzhou, China, December 5-7, 2012 (ICARCV2012).

[9]. Affective-MIT Facial Expression Dataset (AMFED): Naturalistic and Spontaneous Facial Expressions Collected In-the-Wild, The 2013 IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops (CPRW 10), Portland, OR, USA, (June 2013). McDuff D., Kaliouby R., Senechal T., Amr M., Cohn J., and Picard R.W.

[10] M. Sumithra and Dr. S. Malathi, "A Novel Distributed Matching Global and Local Fuzzy Clustering (DMGLFC) FOR 3D Brain Image Segmentation for Tumor Detection", IETE Journal of Research, doi.org/10.1080/03772063.2022.2027284,(2021)

[11] B.Buvanswari and T.Kalpalatha Reddy, "A Review of EEG Based Human Facial Expression Recognition Systems in Cognitive Sciences" International Conference on Enenrgy, Communication,Data analytics and SoftComputing(ICECDS),CFP17M55-PRJ:978-1-5386-1886-8",August 2017.

[12] M. Sumithra and Dr. S. Malathi, " Modified Global Flower Pollination Algorithm-based image fusion for medical diagnosis using computed tomography and magnetic resonance imaging", International Journal of Imaging Systems and Technology, Vol. 31, Issue No.1, pp. 223-235, 2021

[13] K. Sridharan , and Dr. M. Chitra "SBPE: A paradigm Approach for proficient Information Retrieval , Jokull Journal" , Vol 63, No. 7;(Jul 2013)

[14] M. Sumithra and Dr. S. Malathi, "3D Densealex NET Model with Back Propagation for Brain Tumor Segmentation", International Journal OfCurent Research and Review, Vol. 13, Issue 12, 2021.

[15] B.Buvaneswari and Dr.T. KalpalathaReddy,"EEG signal classification using soft computing techniques for brain disease diagnosis",Journal of International Pharmaceutical Research ,ISSN : 1674-0440,Vol.46,No.1,Pp.525-528 (2019).

[16] K. Sridharan , and Dr. M. Chitra "Web Based Agent And Assertion Passive Grading For Information Retervial", ARPN Journal of Engineering and Applied Sciences, VOL. 10, NO. 16, September 2015 pp:7043-7048

[17] M. Sumithra and Dr. S. Malathi, "Segmentation Of Different Modalitites Using Fuzzy K-Means And Wavelet ROI", International Journal Of Scientific & Technology Research, Vol. 8, Issue 11, pp. 996-1002, November (2019).

[18] M. Sumithra and S. Malathi, " A Survey of Brain Tumor Segmentation Methods with Different Image Modalitites", International Journal of Computer Science Trends and Technology (IJCST) – Vol. 5 Issue 2, (Mar – Apr 2017).

[19] B.Buvaneswari andDr.T. Kalpalatha Reddy, "High Performance Hybrid Cognitive Framework for Bio-Facial Signal Fusion Processing for the Disease Diagnosis", Measurement,ISSN: 0263-2241, Vol. 140, Pp.89-99,(2019.)

[20] M. Sumithra and Dr. S. Malathi, "A Brief Survey on Multi Modalities Fusion", Lecture Notes on Data Engineering and Communications Technologies, Springer, 35, pp. 1031-1041,(2020).

[21] M. Sumithra and S. Malathi, "A survey on Medical Image Segmentation Methods with Different Modalitites", International Journal of Engineering Research and Technology (IJERT) – Vol. 6 Issue 2, (Mar 2018).

[22] B.Buvaneswari and Dr.T. KalpalathaReddy,"ELSA- A Novel Technique to Predict Parkinson's Disease in Bio-Facial",International Journal of Advanced Trends in Computer Science and Engineering, ISSN 2278-3091,Vol.8,No.1,Pp. 12-17 (2019).

[23] K. Sridharan , and Dr. M. Chitra , Proficient Information Retrieval Using Trust Based Search On Expert And Knowledge Users Query Formulation System, Australian Journal of Basic and Applied Sciences, 9(23) July 2015, Pages: 755-765.

[24] B.Buvaneswari and Dr.T. Kalpalatha Reddy, "ACPT- An Intelligent Methodology for Disease Diagnosis",Journal of Advanced Research in Dynamical and Control Systems,ISSN : 0974-5572,Vol.11,No.4,Pp.2187-2194,2019.

[25] Sumithra, M., Shruthi, S., Ram, S., Swathi, S., Deepika, T., "MRI image classification of brain tumor using deep neural network and deployment using web framework", Advances in Parallel Computing, 2021, 38, pp. 614–617.

[26] K. Sridharan , and Dr. M. Chitra "RSSE: A Paradigm for Proficient Information Retrieval using Semantic Web" , Life Science Journal 2013;10(7s), pp: 418-425