Blue Eyes Technology with Electric Imp Explorer Kit

Ankita Shaily*, Saurabh Anand

Department of Information Technology, Poornima College of Engineering, Jaipur, Rajasthan, India

ABSTRACT

The world of technology cannot be always constant. It shows how far the human mind thinks beyond edge of the earth. Every time human mind created something new so, in terms of technology we called it as Research Based Technology. Now the time has to be come where we deploy The Blue Eyes Technology on to the IOT device (Electric Imp Explorer Kit). The main aim of this Research Paper is how to reduce the manpower and improve the efficiency of computer or Smartphone. The Blue Eyes Technology was conceived by the research team of IBM in California since 1997. The Technology have ability to sense and control human emotions through gadgets like Laptop, Smart Television, Smartphone's etc. It give power to computer so, machine start interacting with human beings as an intimate partner and identify their emotions Sad, Happy, Angry, Surprise. The sensors were embedded onto the Emotion Mouse or Expression Glasses which understand the emotions or feelings of human through facial expressions of muscles movement. When the blue eyes technology will extend with "Electric imp Explorer Kit" then the system will able to check the current temperature or humidity of electronic devices like Refrigerator, Television, Laptop as well as current temperature and humidity of the room. The concept of Explorer kit or EyeTribe is the implementation part of this Research Paper.

Keywords: Emotion Mouse, Expression Glass, IBM Almaden Eye Tracker, EyeTribe Tracker, Electric Imp Explorer Kit with imp card 001.
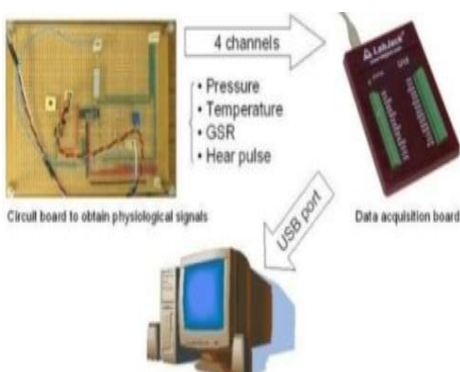
I. INTRODUCTION

The term blue eyes is made from the two words "Blue + Eyes". Blue is basically used for Bluetooth, which enables wireless Communication where as Eye means to obtain the psychological data. It give power to computer so, machine start interacting with human beings as an intimate partner and identify their emotions (Sad, Happy, Angry, Surprise) using Pressure sensor, Temperature sensor and Galvanic Skin Response sensor etc. The sensors were embedded onto the Emotion Mouse or Expression Glasses which understand the emotions or feelings of human through facial expressions of muscles movement. The main aim of this technology is reduce the manpower or balance the coordination between machine and human beings.

Imagine the world when you go to home and see on power button then your laptop will open, the necessary mail will screening automatically all the documents were arranged according to your virtual mind through eyes, machine feels your presence; verifies your identity and starts interacting with you and even it will dial and call to your home in a urgent situations. All the above things will be possible when we were using Eye Tribe Tracker in the blue eyes technology. The blue eyes technology work on the

two hardware portable device that is (a)Data Acquisition Board (b)Central System Unit. The traditional system is working upon the sensors which were embedded into Emotion Mouse or Expression Glasses. It detects the emotion when anyone touch the magical mouse then the psychological data of human is fetched by data acquisition board and transferred to central system unit using Bluetooth connection which show the result of human moods. The same things were happen in Expression Glasses. It detects the emotions with the help of facial movements.

Figure 1. working of overall System

The blue eye technology has ability to read the emotion of human beings with the help of Emotion mouse and Expression Glasses which consists the variety of sensors. In natural world there are some unique identities of every humans like eyes, fingers, speech which help to sense the emotions. It can even understand your emotions at the single touch of the mouse. The blue eyes technology check your presence and starts interacting like a another human beings. For example, It realizes the urgency and dial your emergency contacts, and establishes a connection. The system can understand the feeling of human beings and acquire the knowledge from users

mind that what a user wants. The emotion level can be measured by anyone on any system but the problem is that the result is not always accurate because the sensor fetch the psychological data on the basis of surrounding. This was the great challenge since 1995 so, to remove the drawback the IBM introduce the new concept that is called as to be "IBM Almaden Eye Tracker". It was introduce by the IBM Company since 1997. Almaden Eye Tracker capture the ray of eye, for every intensity there is predefined expression for example the intensity between 10-20 is predefined for sad, 60 -70 is predefined for angry. The result of Almaden Eye Tracker is detected easily in a nanosecond and the result is always 100% accurate.[5] www.ibm.almaden.com.

The limitations of IBM Almaden Eye Tracker are:-
- The connectivity of structure is so complex, huge kit are require for connection so it take lot of time for establishing the initial connection.
- The biggest challenge of IBM Almaden Eye Tracker is, only experienced person or specialists with Ph.D.'s can used so it was expensive technology in those time.

Figure 2. IBM Almaden Eye Tracker

II. CHALLENGES IN BLUE EYES TECHNOLOGY

The following are the challenges of Blue Eyes Technology:-

1. After the limitation of IBM Almaden Eye Tracker the blue eyes technologywas no longer to used. No solution was implemented to track the correct way, in 2005 the technology almost gone to extinct.

2. There are so many new technology was implemented like Magic Pointing, Gaze Tracker but all have certain limitation that's was the main cause so, the technology was no longer to used.

3. There are so many Eye Tracker was implemented after the Almaden Eye tracker but no one can fulfill the market strategy.

III. FACTORS WHICH CREATED THE CHALLENGES

I think that poor results aren't the fault of the technology its totally depends upon the researcher mind that how far human work and think.

There are three major factor which created the challenges:-

A. Poor Communication between IT sector and market

Poor communication between Information Technology Research Department's which is productivity which create the issue between Research Departments and IT sector. Before launching the products in market it is necessary to check the customer satisfaction, if the technology were not working according to users choice then they not reached up to a final edge and these things are created due to the poor communication in between users and IT sectors.

B. Lack of IT governance-
Like the newest or most popular technology may be appealing, so the system be not care about the running technology implementation they switch on to the new technology.

C. Alignment issues-
Technology needs to do work properly but due to inappropriate relations among the industry caused the problem of alignment.

IV. SOLUTION TO IMPROVE THE BLUE EYES TECHNOLOGY

The Eye Tribe Tracker eliminates all the challenges of by delivering a platform for self-service that puts the value of "Blue Eyes Technology".

The benefits of Eye Tribe Tracker are:-

- It give response in nanoseconds.
- The result will always accurate.
- Eye Tribe Tracker is a portable device so, there is no need to establish connection.
- No any specialist is required, there is few line of code after that anyone can used.

Eye Tribe is one of the fortune 8 favorite gadgets. The starting price of tracker is 5,000$ and it support c-sharp, java, c++. The tracker enables eye control on display screen allowing eye navigation and control cloud-based data analytics. It was started seven years ago by the four students of IT University at Copenhagen. Sun Alstrup Johansen is the CEO of EyeTribe company. The technology was launched on 10th August 2017 by the Eye Tribe Company. All the impossible things is came to be true after the implementation of EyeTribe Tracker like machine sense your work with the help of eye and start doing work according to that.

Figure 3. Eye Tribe Tracker

Eye tracking is a technology which calculate the eye gaze point of a user as he or she looks around.[4] www.eyetribe.com

Eye tracker is externally equipped on to the gadgets which enables the users to use their eye gaze as an input modality that can be combined with other input devices like mouse, keyboard, touch and gestures.

The eye gaze coordinates are calculated with respect to a screen the person is looking at, and are represented by a pair of (x, y) coordinates.

Figure 4. Fighter Tie Game

In this paper there are two implementation part the first one is EyeTribe Tracker and the second is Explorer Kit. The Electric Imp Explorer kit is basically a IOT(Internet of Thing) device which work on the Bluetooth or Ethernet that's why it is called to be as **Portable Explorer Kit.** It is used to measure the current temperature or humidity of electronic equipment with help of server or Cloud based application. we can measure the readings using electric imp app in smart phone or laptop. It work on Saas (Software as a Service) platform so it can easily accessible from anywhere at any time. If you connect your devices through Explorer kit then you can manage your home automation work from anywhere so, it can reduce the gap between Electronic and Physical world. The Electric Imp Explorer Kit consist the two hardware device for running the application from anywhere.
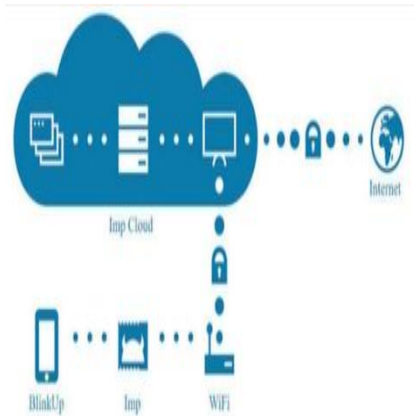
The hardware devices are:-

1. Explorer Kit:- It is a self-contained connected device. It uses the blink-up process to establish the connection and act as a interface between connected device.

2. Imp card:- It is the sensor which is used to check the current temperature or humidity with the help of approval or alerts which is generated by the Electric Imp application. Imp card have certain extension like(001-010). For every extension there is predefined work. In this paper I am using imp card 001 which is a temperature or humidity sensor.

V. WORKING AND SETUP OF EXPLORER KIT

The smartphone is connected with Explorer kit using blinkup process once the connection is complete the electric imp application start working. The information or data will send in Imp Cloud then it will

trap the receiver and give the result of running process.

Figure 5. Working module of Explorer Kit

The following are setup of Electric Imp Explorer Kit-

1. Download the electric imp application from playstore- When the app has been downloaded then sign in and login into your account using username and password.

2. Select your Wi-Fi network- After the login in account there are two choice of connection first is from Bluetooth and second is Ethernet then the will send into the imp cloud.

3.Perform a Blink-Up- It tells you to power up your impExplorer Developer Kit with the mini USB cable (connected to either a USB AC adapter or a USB port on your computer). The on-board imp001's status LED will now begin blinking orange if you have a brand new impExplorer Developer Kit, or red if it has been used before for perfect connection it should be stable green.

VI. APPLICATION OF OVERALL SYSTEM

- Now a days games which require co-ordination and Fast reaction like (fruit & Ninja, Fighter Tie).
- Automobile industry for manufacturing the parts.
- Perpetrators were easily caught.
- It reduces the gap between electronic and physical world.
- It manage the "Traffic Collision Avoidance System"(TCAS).
- Used in ship navigation.

VI. FUTURE ASPECTS

The blue eyes technology reduce the gap between electronic & physical world in near future. The aim of this technology is to deploy the human skills on machine so, our work is automatically done. In future it interact with all system and start talking with humans and maintain the coordination between human and machine.

VII. CONCLUSION

The Blue Eyes Technology have certain limitation which was overcame by IBM Almaden Eye Tracker, but the structure of Almaden was giant and complex. So, the concept of Eye tribe Tracker was introduced by Eye Tribe company in 2017. It capture the emotion as well as behavior of humans in just a nanosecond and manage the co-ordination or response. Instead of that it manipulate the work of human like screening of email etc when the Electric imp (IOT) concept added with this technology then it will totally reduce the man power. A kind of sense automation will generated if the Blue Eyes Technology will extend through Electric Imp ExplorerKit.Imagine the world

when you go to home and see on power button then your laptop will open, the necessary mail will screening automatically all the documents were arranged according to your virtual mind through eyes.

X. REFERENCES

[1]. McDuff D., Kaliouby R., Senechal T., Amr M., Cohn J., Picard R.W., "Affective- MIT Facial Expression Dataset (AMFED): "Naturalistic and Spontaneous Facial Expressisons Collected In-the-Wild.", The 2013 IEEE Computer Society Conference on Computer Vision and Pattern Recognition Workshops (CVPRW'10), Portland, OR, USA, June 2013.

[2].   http://technicalpages.blogspot.in/2008/02/blue-eyes-technology.

[3]. Swati, , "Blue Eyes Technology", International Journal of Advance Research In Science And Engineering. http://www.ijarse.com, April 2015 ISSN-2319-8354(E).

[4]. www.eyetribe.com

[5]. www.almaden.ibm.com

[6].www.research