



# Blue Eye Technology

N.Santhiya<sup>1</sup> E.Maheswari<sup>2</sup>

<sup>1,2</sup>Student, Department of Computer Science, Sri Krishna Arts and Science College, Coimbatore, Tamilnadu, India

**Abstract:** Human error is still one of the most frequent causes of catastrophes and ecological disasters. The main reason is that the monitoring systems concern only the state of the processes whereas human contribution to the overall performance of the system is left unsupervised. Since the control instruments are automated to a large extent, a human – operator becomes a passive observer of the supervised system, which results in weariness and vigilance drop. Thus, he may not notice important changes of indications causing financial or ecological consequences and a threat to human life. It therefore is crucial to assure that the operator’s conscious brain is involved in an active system supervising over the whole work time period. Blue Eyes the system developed intended to be the complex solution for monitoring and recording the operator’s conscious brain involvement as well as his physiological condition. This required designing a Personal Area Network linking all the operators and the supervising system. As the operator using his sight and hearing senses the state of the controlled system, the supervising system will look after his physiological condition. The main objective of Blue eyes technology is to develop a computational machine having sensory and perceptual ability like those of humans. The Blue Eyes technology system is a combination of a set of hardware and software systems. The hardware consists of a central system unit (CSU) and data acquisition unit (DAU).

**Keywords:** Analyzing Emotional state, Facial expression, Imparted Informational state, Perceptual abilities, Productive Sensory, Computational Machines

## I. INTRODUCTION

Animal survival depends on highly developed sensory abilities. likewise, human cognition depends on highly developed abilities to perceive, integrate, and interpret visual, auditory, and touch information. without a doubt, computers would be much more powerful if they had even a small fraction of the perceptual ability of animals or humans. adding such perceptual abilities to computers would enable computers and humans to work together more as partners. toward this end, the blue eyes aims at creating computational devices with the sort of perceptual abilities that people take for granted blue eyes is being developed by the team of poznan university of technology& microsoft. it makes use of the “blue tooth technology “developed by ericsson.

### BLUE EYES TECHNOLOGY - MONITORING HUMAN OPERATOR AND INTELLIGENCE SENSING SYSTEM

Blue Eyes is a technology conducted by the research team of IBM at its Almaden Research Center (ARC) in San Jose, California since 1997. Blue eyes technology makes a computer to understand and sense human feelings and behavior and also enables the computer to react according to the sensed emotional levels. The aim of the blue eyes technology is to give human power or abilities to a computer, so that the machine can naturally interact with human beings as we interact with each other. All human beings have some perceptual capabilities, the ability to understand each other’s emotional level or feelings from their facial expressions. Blue eyes technology aims at creating a computer that have the abilities to understand the perceptual powers of human being by recognizing their

facial expressions and react accordingly to them. Imagine, a beautiful world, where humans collaborate with computers!! .The computer can talk, listen or screech aloud!! .With the help of **speech recognition and facial recognition systems**, computers gathers information from the users and starts interacting with them according to their mood variations. Computer recognizes your emotional levels by a simple touch on the mouse and it can interact with us as an intimate partner. The machine feels your presence; verifies your identity and starts interacting with you and even it will dial and call to your home at any urgent situations. This all is happening with this “**Blue Eyes**” technology.

### TECHNOLOGIES USED

- Emotion Mouse
- Manual And Gaze Input Cascaded (MAGIC)
- Artificial Intelligent Speech Recognition
- Simple User Interest Tracker (SUITOR)
- The eye movement Sensor

### Types of Emotion Sensors

- For Hand
- Emotion Mouse
- Sentic Mouse
- For Eyes
- Expression Glasses
- Magic Pointing
- Eye Tracking
- For Voice
- Artificial Intelligence Speech Recognition



## II. ARTIFICIAL INTELLIGENT SPEECH RECOGNITION USED IN BLUE EYES TECHNOLOGY

For implementing the Artificial Intelligent Speech Recognition system in Blue Eyes technology, the working environment should be very important. The manner of the user's speech, grammar, noise type, noise level and the position of the microphone are some important factors that may influence the features of speech recognition system. In Artificial Intelligent Speech Recognition system, an automatic call handling method is implemented without any telephone operator. Two basic ideas are included in the Artificial intelligence (AI),

- Study the thought of human beings.
- Represents the thought process of human beings through robots, computers etc.

Actually Artificial intelligence (AI) denotes the behavior of a computer or any machines but it is carried out by the humans is called as 'intelligent'. This AI makes machines more power full, useful, and smarter and also it is less expensive compared to natural intelligence. Natural language processing (NLP) makes artificial intelligence systems to communicate English. The main goal of the Natural language processing (NLP) is to understand the users input and react according to these inputs. The input data or words are continuously scanned and finds matches against inside stored known data or words. And after identifying the key words, the corresponding actions are carried out by the machine. In this way the Blue Eyes technology enables the users to communicate with the machines with their own languages.

## III. LIMITATIONS AND FUTURE ASPECTS

The prototype has several limitations, which are not the result of the project deficiency but are rather caused by the constraints imposed by the Project Kit and small budget. The unique feature of system relies on the possibility of monitoring the operator's higher brain functions involved in the acquisition of the information from the visual environment. The new possibilities can cover such areas as industry, transportation (by air, by road and by sea), military command centers or operating theaters (anesthesiologists). It is intended that the system in its commercial release will help avoid potential threats resulting from human errors, such as weariness, oversight, tiredness.

## IV. APPLICATIONS

- In retailing record and interpret customer movements
- In automobile industry

Below figure shows a usage of Blue eye technology.



Fig.1: Usage of Blue eye technology

## V. CONCLUSION

BLUE EYE technological approach assure a convenient technique, that simplifies the life by supporting more elegant and user friendly provision in computing devices. The day is very near, that this Blue Eyes technology will advance its way towards your house hold devices and makes you lazier. In future, even this Blue Eyes will reach as your hand held mobile device.

## REFERENCES

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