**CONTROLLING MOUSE AND VIRTUAL KEYBOARD USING**

**EYE-TRACKING AND COMPUTER VISION**

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**OBJECTIVE**

To provide an alternative input for people with physical diabilities. By analyzing facial expressions, particularly eye and mouth movements this system allows users to interact computers hand-free. The virtual keyboard even be operated by blinking the eyes to desired keys.

**ABSTRACT**

The most common used input device in a computer is the virtual keyboard and mouse, whereas the usage of the same input device is complex for people suffering from (Paralyzed and persons with disabilities) by enabling them to carry out basic functions used in the conventional input system. The proposed system provides an alternate solution for the people who are suffering from paralysis and with physical disabilities by using their facial expression through the web camera as the basic input system instead of a physically handled virtual keyboard and mouse. The system works by facial expressions like movement of eye ball and mouth movement. By applying Haar classifier the system identifies the region of the face, eyes, and mouth are detected and extracted for processing. It controls the action of the virtual mouse and virtual keyboard by providing a hands-free interaction between humans and computers. It allows disabled people to scroll up, scroll down, scroll left, scroll right, right-click, left-click, and to perform cursor movement in virtual mouse.

**INTRODUCTION**

Using the human face & eye motions to interface with the computer instead of the conventional mouse. It is designed to make computer usage efficient and simple for those who are physically disabled and lack hands. It deals with how computers can gain a deeper understanding of visual data

**HARDWARE & SOFTWARE REQUIREMENTS**

**RAM:** 8GB  
**Processor:** Intel Pentium 4  
**Operating System:** Windows 10  
**Coding Language:** Python  
**IDE:** Visual Studio

**EXISTING SYSTEM**

The existing system such that the interaction amongst the computer and human is carried out with eye-tracking and blink-detection. In this concept, human computer interface system exists which tracks the direction of the human eye. The particular motion and the direction of iris is employed to drive the interface by positioning the mouse cursor consequently. The location iris is completed in batch mode. Here the frames are stored in a permanent storage device and are retrieved one by one. Each of the frames is processed for finding the location of the iris position and there by placing the mouse cursor consequently.

**PROPOSED SYSTEM**

Includes face identification, face tracking, eye detection, and comprehension of an eye sequence in the proposed system. For operating a non-intrusive human-computer interaction, blinks in real-time. Human eye movements take the role of the standard mouse and virtual keyboard technique of computer interaction. users were asked to write the word ”HI THERE” using the virtual keyboard. The whiteboard containing the typed word has been depicted in Fig. 10. The users tend to more erroneous in the beginning, but as they got used to the keyboard the number of wrong character typing decreases.

**CONCLUSION**

It is evident from the procedure used that the computer pointer may be moved by eyeball movement without the need of hands. People with disabilities will find this useful when utilising the physical components of a system to control the pointer points and virtual keyboard operations. Because one's eyes alone can move the mouse and perform virtual keyboard activities, without no outside assistance.

**REFERENCES**

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