# HUMAN COMPUTER INTERACTION BY EYE BLINKING ON REAL TIME

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**ABSTRACT**

*There are a lot of disabled people who can't control some parts of their bodies such as ALS and real-time human-computer interaction systems can help them. In this paper, a real-time vision system is presented to provide a communication way to people has severe disabilities. Patients will be able to choose words on an alphabet tree which is designed on a binary tree by blinking right and left eye, thus they will make sentences.*

## INTRODUCTION

Technology is all about serving mankind. People are getting needy for technology as time is clicking. Technologists love to break obstacles; it is what they are doing for ease of homo sapiens. In addition to it, we have also lodged a model to engineer modish thing with technology. Statistics suggest that there are many cases of paralyzed people noticed every year including people suffering from locked-in syndrome; is a medical model in which most of the body muscles are paralyzed except the movement of eyes. Our project strives to mould the life of such people effortless, painless and manageable to re-establish the happiness, satisfaction, cheerfulness and self-possession of such people.

**Built an eye-controlled device for disabled people:**

Eyes can be considered the most salient and stable features in the human face in comparison with other facial features. Usually, the eye tracker products measure/determine the eyeball position in several ways that may be classified within three groups: contact lens-based, electrooculogram based and video-based. Eyeblink data is being frequently analyzed and processed for different application fields such as wearable technologies, intelligent driver warning systems, etc. Eye blinking is partly subconscious fast closing and reopening of the eyelid. So, by keeping all things in mind we aim to make an eye-controlled device through the movement of eyes.

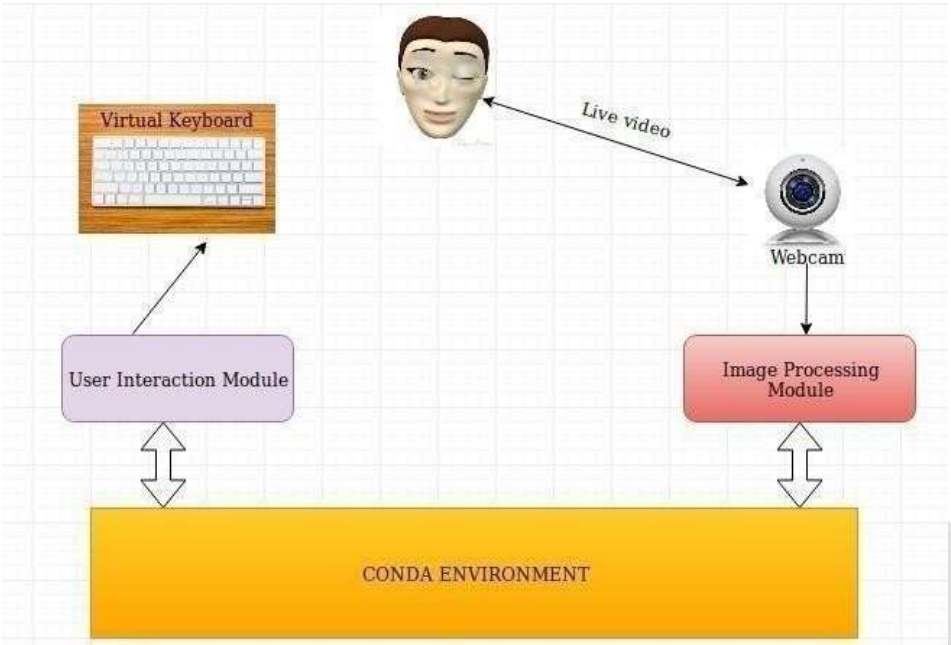
**Allow paralysis victims to communicate independently.**

Many paralysis victims already use eye blinks as a form of communication. It is common for nurses and caretakers to read a patient's eye blinks and decode the pattern. The ALS association even offers a communication guide that relies on eye blinks. Our project automates this task. The software reads a person's eye blinks and converts them into text. This allows patients to record their thoughts with complete independence no nurse caretakers are required. Not only does this reduce the financial burden on paralysis patients, but this form of independence can be morally uplifting as well.

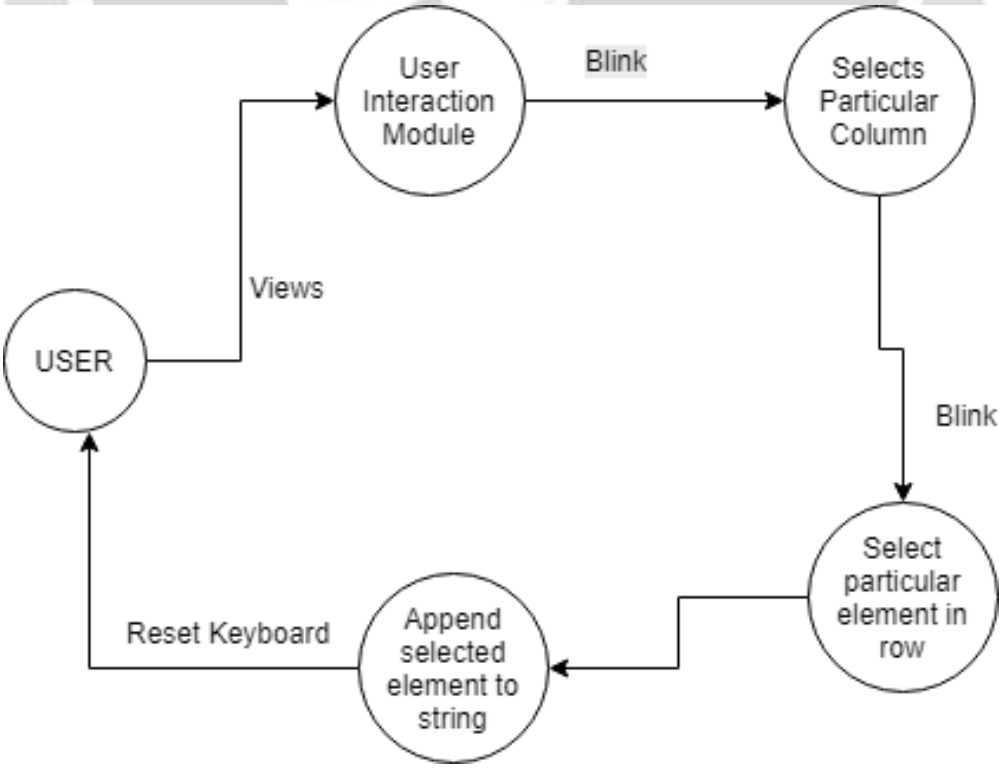
**Be accessible to people with financial constraints.**

Many companies are developing technologies that are controlled by eye movement. These technologies rely on expensive hardware to track a user`s eyes. While these devices can absolutely help LIS victims, they are only available to people that can afford the technology. Our project focuses on a different demographic that are often ignored. The software runs on wide variety of low end computers. The only required peripheral is a basic webcam. Not only is this software accessible to paralyzed people, but paralyzed people of almost all financial classes as well.

**1.1 SYSTEM ARCHITECTURE**




**1.2 Data flow diagram**



## CONCLUSION

The human computer interaction is important for every person of this century. In today's era most of the work is done through computers. Blink-to- Text can be a helpful tool for those who cannot use the keyboard by their hands due to a number of reasons. It can be used by the paralyzed and differently able people to effectively communicate with the outside world through the use of our software. The implementation of other systems that are available in market require hardware like EEG headsets which is costly to use in daily life. Thus our tools provide efficient solution to this problem.

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