

Virtual mouse using eyes for handicapped

Gayatri Hilgude, Akansha Andhale , Sushmita Kshetre , Pramila Pokale , Prof.Shila Dare.

Student, Student , Student , Student , Guide.

Computer Science and Technology,

Shree Chhatrapati Shivaji Maharaj College Of Engineering Nepti , Ahmednagar, India

Abstract - A disabled person's life is always dependent on someone else who needs aid with mobility or any other task. Individuals with disabilities may face challenges when using computers. The most common way of interacting with computers is using a mouse and keyboard. It is difficult for people with physical disabilities to use them. Facial movements are one of the best possible actions by physically disabled individuals, by recognizing and responding to these movements, it is possible for them to operate the computer using only their eye movements. Eye movement recognition is a contemporary approach to interaction between humans and computers. The proposed system can easily control the computers by using eye movement recognition. It can be a viable replacement for traditional system in the future. This research outlines the techniques utilized in the design, implementation, and evaluation of the experiments conducted and presents the results obtained.

Keywords : Email, Internet, Voice, Speech recognition, physically challenged, Text to speech, blind.

I. INTRODUCTION

In today's world computers are widely used , but there are still some people having a keen interest in computers but are not able to operate them because of their physical disabilities. This people have to rely on a third person to do so or else. There are numerous students out who really have an urge / interest to operate computers and at least perform the basic operations on the computers but due to their disabilities they are not able to do so. This Project has a basic aim of helping out all those people out their and make it an easy task for them to operate computers though they are disabled. This project will definitely help out all these people and have a positive feedback. This project is not just for handicapped but also normal people can use it. The concept of controlling a computer or any digital device with eye movements may seem like science fiction, but it is very much a reality today. This project explores the fusion of cutting-edge eye-tracking technology with software interfaces to create a virtual mouse that is entirely controlled by the user's eye movements. Such a system offers a host of possibilities, ranging from enhancing accessibility for individuals with physical disabilities to improving the efficiency and comfort of everyday computer usage. This project delves into the underlying technologies, methodologies, and applications of a Virtual Mouse using Eye, offering a comprehensive look at its development, implementation, and real-world use cases. By understanding and mastering the intricacies of eye-tracking technology, this project aims to create a user-friendly friendly

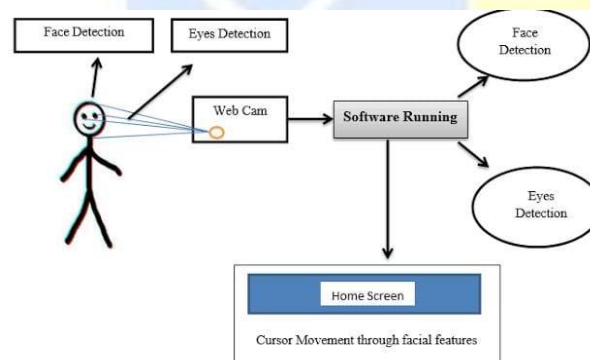


Fig.1 Architecture of model.

II. LITERATURE SURVEY

Muhammad Irsyad Haziq, Ilanur Muhanini Binti Mohd Noor, Raed Abdulla have been found out The focus of the proposed method is to be able to execute the basic actions of a mouse cursor virtually. With the help of ML algorithms, one can track the tip of the fingers, and the gesture made.

III. Working of the model

Controlling of mouse cursor is obtained by face movement as moving face up, down, left and right and mouse events are controlled through eye blinks, and keyboard events are controlled through hand gestures. To perform these operations different algorithms like Haar Cascade algorithm, Dlib.

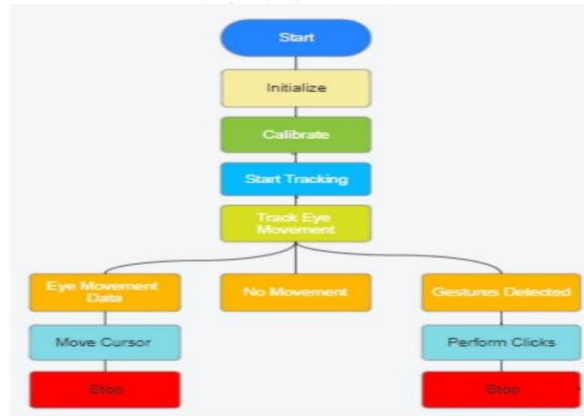


Fig : UML Diagram.

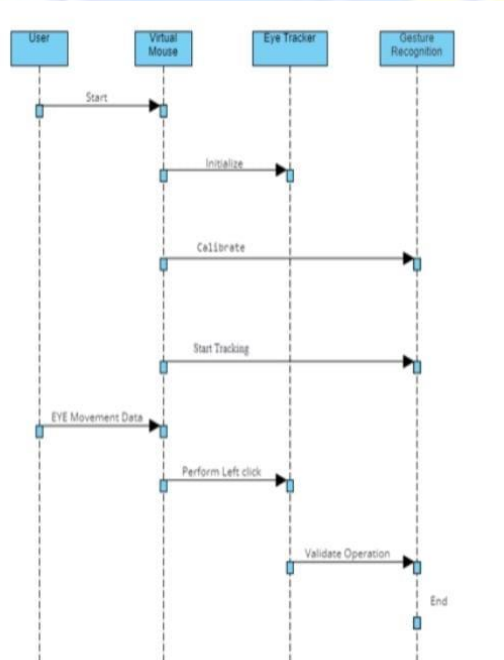


Fig: Sequence Diagram

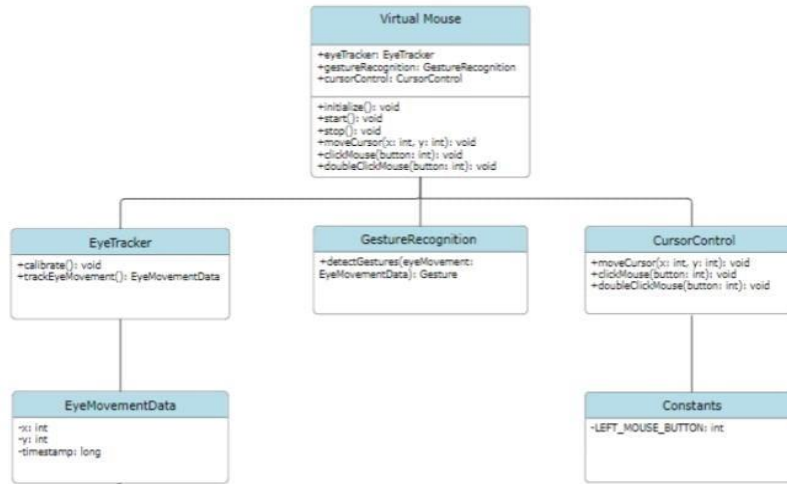


Fig : Class Diagram

IV. CONCLUSIONS

From the results of the model, we conclude that the proposed AI virtual mouse system will perform well and has a good accuracy, and the model overcomes most of the limitations of the existing systems. This project can be used for real-world applications, and it can be used to reduce the spread of COVID-19, since the proposed mouse system can be used virtually using eye gestures without using the traditional physical mouse. The model has some limitations, we will work next to overcome these limitations to produce more accurate results.

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