

SYNOPSIS

Report On

AI VIRUAL MOUSE

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**Submitted in partial fulfilment of the
Requirements for the Degree of**

MASTER OF COMPUTER APPLICATIONS

**Under the Supervision of
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Submitted to

**DEPARTMENT OF COMPUTER APPLICATIONS
KIET Group of Institutions, Ghaziabad
Uttar Pradesh-201206**

(MARCH -2023)

ABSTRACT

Many technologies are continually evolving in today's technological environment. The human-machine interface is one such promising concept. For example, there is no way to extend the limit on a wired mouse. Bluetooth hardware and a Bluetooth dongle must be installed on the computer to operate a wireless mouse. The proposed system would have no such limits, depending on gesture recognition. Object identification and image processing are the key technologies applied in this study. The idea is to move the mouse pointer on the screen without using any hardware, such as a mouse, and merely by exploiting finger motions, known as gesture recognition.

We present a unique Human-Computer Interaction approach in this study (HCI) (HCI). A real-time camera is utilised to control cursor movement. This research proposes a camera vision-based cursor control system using hand gestures captured through a webcam. The system will enable the user to move the computer cursor around using their hand carrying point-based lines and other hand gestures. The recommended system is built on a low-resolution camera that functions as a sensor and can follow the user's hand in two dimensions carrying colour point-based lines. Python is used to implement the system. Hand gesture is the most natural and easy means of communication.

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INTRODUCTION

An AI virtual mouse is a computer program that uses artificial intelligence techniques to simulate the behaviour of a physical mouse. It is designed to allow users to interact with their computer without the need for a physical mouse, which can be useful in situations where a physical mouse is not available or practical.

The AI virtual mouse works by tracking the movements of the user's hand or other input devices and translating them into corresponding movements on the computer screen. The program uses algorithms to analyze the user's input and adjust the cursor's movements to match the user's intended actions.

Some AI virtual mouse programs can also recognize hand gestures and other types of input to perform different functions, such as scrolling, clicking, and dragging.

AI virtual mouse technology provides an innovative and convenient way for users to interact with their computer, especially for people with physical disabilities or mobility impairments who may find it difficult to use a traditional physical mouse.

LITERATURE REVIEW

To meet the increasing importance of human-computer interaction (HCI), several mice have been created, from the basic office mouse to an extreme gaming mouse. Because they aren't as ecologically friendly as they seem to be, these gadgets have several drawbacks. For example, you'll need a flat surface and a certain position to utilise the mouse's functions. As a result, part of this technology is useless when remotely communicating with computers because of connection length constraints. Multi-point Interactive Whiteboards may be created with the Wiimote [4]. Wiimote controller, Microsoft.NET framework, Wiimote Connect, and Wiimote Whiteboard software are all required for this setup to operate. An IR pen and 1024 x 786-pixel beamer are also required. The Wiimote controller tracks the whiteboard's infrared source, which sends data to the PC via Bluetooth. Multi-touch teaching stations, an interactive whiteboard and a stylus input conversion tool, are all part of the platform. Most people use the Wii-mote as a virtual marker based on an assessment of relevant research.

Hand gestures are not supported in the current setup, only a mouse and track pad display control system. A hand gesture cannot be used to reach the monitor's display screen from a distance. Even though this is what it mainly seeks to do, the breadth is only limited to the virtual mouse region. In the present virtual mouse control system, the mouse cursor, left-click, right-click and drag are controlled by a hand recognition system. Abolishing the practice of hand recognition will be the new standard in the future. Even though a variety of hand recognition systems are available, Only a few movements are given for each hand-made shape, which leads to a great deal of ambiguity and makes the "still hand" difficult to grasp. It's becoming more difficult to justify using a mouse in the modern world as technology advances. A sensor may be used to move the mouse cursor around the screen (or a built-in camera). The software's dwell delay feature is widely used when a mouse button is unavailable. Clicking may also be accomplished with the aid of a well-placed switch

PROJECT OBJECTIVE

The objective of creating a virtual mouse using hand gesture is to provide an alternative method of controlling a computer without the need for a physical mouse or other input devices. The virtual mouse would allow users to control the computer's cursor and perform various actions by using hand gestures in front of a camera or other sensing device.

The main objectives of creating a virtual mouse using hand gesture are:

- 1) **Improved accessibility:** A virtual mouse using hand gestures would provide an alternative input method for individuals who may have difficulty using a physical mouse or keyboard.
- 2) **Convenience:** A virtual mouse using hand gesture eliminates the need for a physical mouse or other input devices, allowing users to control their computer with natural hand gestures.
- 3) **Improved productivity:** With a virtual mouse using hand gestures, users can quickly and easily perform actions without the need to move their hands away from the keyboard or reach for a physical mouse.
- 4) **Interactivity:** A virtual mouse using hand gesture can provide a more interactive and engaging user experience, especially in applications such as gaming and virtual reality.

PROPOSED TIME DURATION

Procedures	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Requirement Analysis						
Design						
Implementation (Coding)						
Testing						
Maintenance						

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