

Laser Powered Virtual Events

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Abstract:- As high growth of technology, devices are becoming affordable to general people and people are more attracted towards Artificial Intelligence and new ways to interact with computer devices. Laser Powered Virtual Events is a system that detects the laser point stroke on any flat surface. Here we can make any flat surface such as wall or book as virtual events and a press of laser light acts as key press on keyboard. Laser Powered Virtual Events uses webcam to monitor the selected area, detects if any laser light comes to any segment and then does the equivalent of pressing a specified keyboard key. Laser Control is a gesture system created using a laser pointer by pointing defined areas on a wall. Here to interact with media device i.e. camera we use .NET. With gesture recognition, all we have to do is make a gesture anywhere in the camera's field of view.

Keywords—Laser Point, Key Board, Flat Surface, Automatic Events.

I. INTRODUCTION

Computer is used by many people either at their work or in their spare-time. Special input and output devices have been designed over the years with the purpose of easing the communication between computers and humans, the two most known are the keyboard and mouse[4]. Almost all new device can be seen as an attempt to make the computing system more intelligent and making humans able to perform more complicated functions. It is possible due to the result oriented efforts made by computer professionals for creating successful human computer interfaces. Complexities of human needs continues to grow so, the need for Complex programming ability and intuitiveness are critical attributes of computer programmers and developers to survive in a competitive and difficult computing environment. The computer programmers have been incredibly successful in easing the communication between computers and human. Every upcoming new product in the market concentrates on reducing the complexity of jobs performed. Earlier, Computer programmers were avoiding such kind of complex programs as the focus was more on speed than other modifiable features. The idea is to make computers understand human language and develop a user friendly human computer interfaces (HCI). Human computing interaction (HCI) is one of the important area of research were people try to improve the computer technology[8]. Nowadays we find smaller and smaller devices being used to improve technology.

II. SYSTEM ANALYSIS

A. Present System

Currently people use only computers to operate it and do any work. Even at some high tech places we can see laser keyboard which is expensive and out of reach for common people. Here the major drawback with all the types is people need to keep the keyboard near to them and press the keys manually[7].

B. Proposed System

We propose a system where remotely a person could be able to access the computer. To make the system affordable to general public we would make use of low price webcam and a laser point to for operation. Our system would be capable to map any flat surface as virtual keypad and translate laser stroke as key press[2]. A camera is used to record the location of the laser pattern, and then the laser pattern is detected. Once a pattern has been detected its trace is recorded spatially until the laser pointer is switched off. According to laser pattern, the application will be communicated with the system, and the system will perform some operation regarding the pattern. The operation will be like handling the system's applications[3].

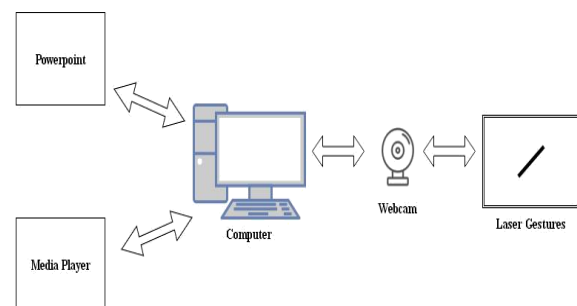


Fig. 1: System Block Diagram

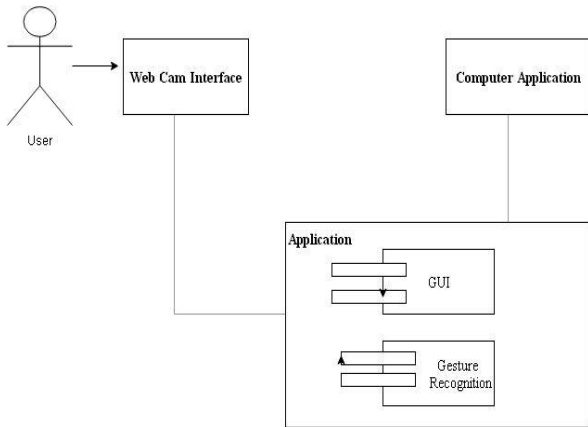


Fig. 2: Deployment Model

III. METHODOLOGY

A. User Module:-

- The user runs the application
- The user can draw laser pattern in any flat surface where the camera is faced.

B. Webcam Module:-

- The webcam will detect the pattern and send to the application[1].
- Our application does live capturing of the ongoing video and display it in the application frame.
- We can set the attributes for the camera and resolution settings or it would take directly from the video Properties file.

C. Laser Point Identifier Module:-

- Here a fixed camera captures a scene which is analysed as frames.
- Every time next frame gets compared with the previous frame for the changes.
- In this module we write program for pixel colour change detection in frames.

- Here we analyse the base frame pixel colours and match with the next frame pixels.
- Because of the brightness of laser point it gets detect by our application.

D. Application Module:-

- The application will detect the pattern.
- After the detection of the pattern, some operations are performed on system.
- The operations like handling the system installed applications.

IV. IMPLEMENTATION

Laser Powered Virtual Keyboard uses webcam to monitor the selected area. Detects if any laser light comes to any segment and then does the equivalent of pressing a specified keyboard key. Laser Control is

.NET oriented that using a webcam detects when a laser pointer is in a specified hotspot and then does the equivalent of pressing a specified keyboard key[2]. Thus we can control Media Portal or applications. The hotspots can be set by the user as well as the actions taken. We can make our wall as a remote control.

The User will start the application then the Web Camera connects with the GUI display from which the Gesture Recognition System is initialized and the Pattern Recognition begins. User does Laser Gestures which is recognized and command is sent[5].

The Background is detected and then the color of the Laser is detected and separated from other light rays[6]. The pattern of the Laser Gesture is matched and the action on the application is performed.

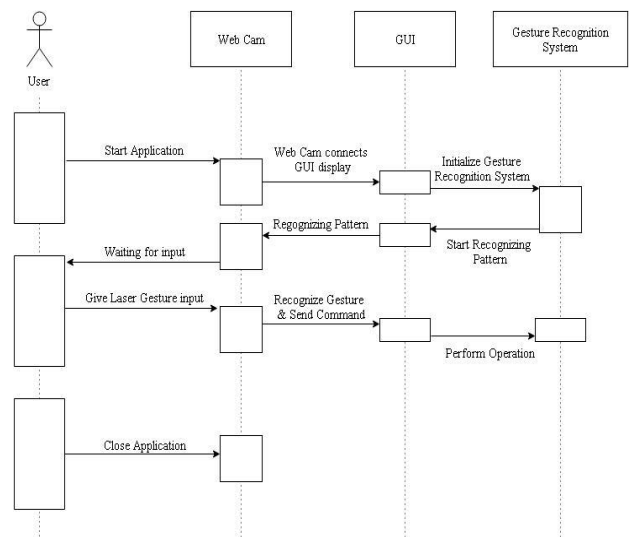


Fig 3: Sequence Diagram

V. CONCLUSION

This application uses webcam to monitor the segmentation area, detects if any laser light comes to any segment and then does the equivalent of pressing a specified keyboard key. Here to interact, we use a webcam detects when a laser pointer is in a specified hotspot and then does the equivalent of pressing a specified keyboard key. Thus we can control various applications installed in our system. The hotspots can be set by the user as well as the actions taken. We can make our wall as a remote control.

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