ABSTRACT

Our project deals with controlling the mouse pointer and carrying out the functions of a trackpad with the help of hand gestures. Moving our hand would allow us to change tabs, double click an item, drag objects and carry out other simple tasks. In existing research, an external camera is used for better image capture and detection but that makes is uneasy to use in everyday life. Using an external camera also requires extra battery usage and has an added hardware cost. Since our software will be using the computer webcam, there would not be any extra cost. Our software can make everyday life very easy. If the computer is kept at a distance, the person would not have to get up but instead can interact with the computer by just gesturing with their hands. It could greatly help partially paralysed or bedridden people who cannot walk or get up to use their computer kept at a distance. There would no longer be any need to keep laptops on the bed while using it as it is harmful to keep the laptop on bed. This problem faces lots of issues as mostly those solutions cater to only a few gestures and for the remaining gestures there is a need to use the mousepad. But we plan on making a complete replacement for a mouse which will not require any mouse input. The one thing which would be unique about our project would be its precision. We will design it in such a way that the user can easily point to buttons and select anything on the screen without having trouble in moving the pointer to a very small distance. Our pointer will also be having mouse assist which will be helping the user to effortlessly maneuver the pointer. We aim to create a robust software which could actually be used in everyday life and does not remain as just a project. It would be as user friendly as possible and we will make it in a way that people can actually use it.

INTRODUCTION

PC innovation has massively grown over the previous decade and has turned into a vital piece of ordinary life. The essential PC hardware for Human Computer Interaction (HCI) is the mouse. The mouse isn't appropriate for HCI in some genuine circumstances, for example, with Human Robot Interaction (HRI). There have been numerous explores on elective strategies to the PC mouse for HCI. The most characteristic and natural strategy for HCI, that is a reasonable swap for the PC mouse is with the utilization of hand motions. This task is subsequently gone for examining and building up a Computer Control (CC) framework utilizing hand motions. Most workstations today are outfitted with webcams, which have as of late been utilized instability applications using face acknowledgment. So as to tackle the maximum capacity of a webcam, it tends to be utilized for vision based CC, which would adequately dispose of the requirement for a PC mouse or mouse cushion. The handiness of a webcam can likewise be extraordinarily stretched out to other HCI application, for example, a communication via gestures database or movement controller. HCI utilizing hand motions is instinctive and powerful for balanced connection with PCs and it gives a Natural User Interface (NUI). There has been broad research towards novel gadgets and strategies for cursor control utilizing hand signals. Other than HCI, hand motion acknowledgment is additionally utilized in communication via gestures acknowledgment, which makes hand motion acknowledgment much increasingly noteworthy. Human Computer Interface mainly focus on the development of an efficient and easy to use interfaces. The personal computers have a variety of options to interact with different applications efficiently with the use of mouse, track-pad, Joystick etc. Nowadays touchscreen technology is available for devices like mobile phones. But this technology is still costly when used in the personal computers. And the devices currently used to interact are frequently breakable. Our objective was to make an alternative technology to interact with the computer which not as costly as the touchscreen technology and is easy to operate with.