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Method To Control Mouse Movement Using HAAR Classifier

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Abstract: *Computers that have been developed today have a increase in amount of power. Most of this power is used by software's for processing data. In the past twenty years we've got seen a large amendment within the quantity of information that a laptop will method and also the speed at that it will do that.. But the primary input devices haven't been a major change in the user interfaces for the past 10 years this project analyzes the biometric identification and tracking related technologies of human computer interaction Based on face detection algorithm which does not depend on specific biometric identification and tracking. This system can be used for upper limb peoples who fails to use traditional mouse and keyboard it can also be used for general computer users to do neck rehabilitation training gamesetc.*

Keywords: *camera mouse, visual face tracking, Hand Free Control, Perceptual user interface*

I. Introduction

The main user of this application is people who do not have reliable control of hand but who can move their head. The system environment is using windows operating system which fits with JAVA Runtime Environment (JRE) and JAVA Media Framework (JMF) To control the mouse pointer, various points tracked ranging from the middle distance between eyes and noise tip. In able to do that Face Detection Algorithms are used. Six segmented rectangular filter used to reduce the area in which focus looking for faces and eyes. To recognize 2D gestures and uses them as input for computer devices. To create platform on software for using more sophisticated hardware devices to achieve greater accuracy. To have system ready for deployment in fields such as classrooms, presentations, gamingetc.

Swing was developed to provide additional refined set of graphical user interface elements than the sooner Abstract Window Toolkit. Swing Provide a native look and feel that emulates the design and feel of many platforms and additionally supports pluggable look and feel that permits application to own look and feel to underlying platform. It has additional powerful and versatile elements than AWT additionally to acquainted elements like label panel, scroll pane, tree, tables, etc.

II. Literature Survey

PG.yawal, Abeer.Alsadoon, P.W.C Prasad in their paper "Some individuals who have the disability of the limbs cannot use the computer with their limbs". Theirsystem is aimed to propose a new robust method for the implementation of the camera mouse for such disabled people. This method consists of the face recognition and extraction of user eyes location. The experiment is conducted to verify the results that were more accurate than the current solution to camera mouse which is described in the Experiment and result section of this system. It aims to introduce how this system operates and analyze its advantages of the device. It also identifies the problems associated with past developments of systems. However the main purpose of this paper is to put forward a modified version of the system.[1]

Hong.Chen, Te-Son Kuo, Yu-Luen Chen in their paper "the motivation of this research is to improve the ability of ambulation for people with a certain degree of disability." The control method is using two tilt sensors as an input-controlling module. One of the tilt sensors detects the anterior/posterior tilting of the head and moves the wheelchair or mouse cursor forward/backward, the other distinguishes the left/right swing of the head. In order to increase the safety of this system, the M3S protocol established by the European Commission is also applied to this research. The system based on M3S protocol has the advantage of real-time monitoring for people with severe disabilities.[2]

M. NazmusShadat, Arish Alreja, MaysamGhovanloo in their paper "Simultanoeus multimodal PC access for people with disabilities is a highly integrated wireless assistive technology in the form of a lightweight wearable headset that ultilizes three remaining key control and communication abilities in people with severe physical disabilities such as tetraplegia, to provide them with effective access to computers Lip movement for discrete/switch based control, head tracking for proportional control and speech recognition for typing, all available simultaneously The MTDS architecture is presented here with new sensor signal processing algorithm for head tracking multimodal simultaneous discrete and propotional control input options of MTDS,

plus rapid typing is expected to provide more effective computer access to people with severe physical disabilities[3]

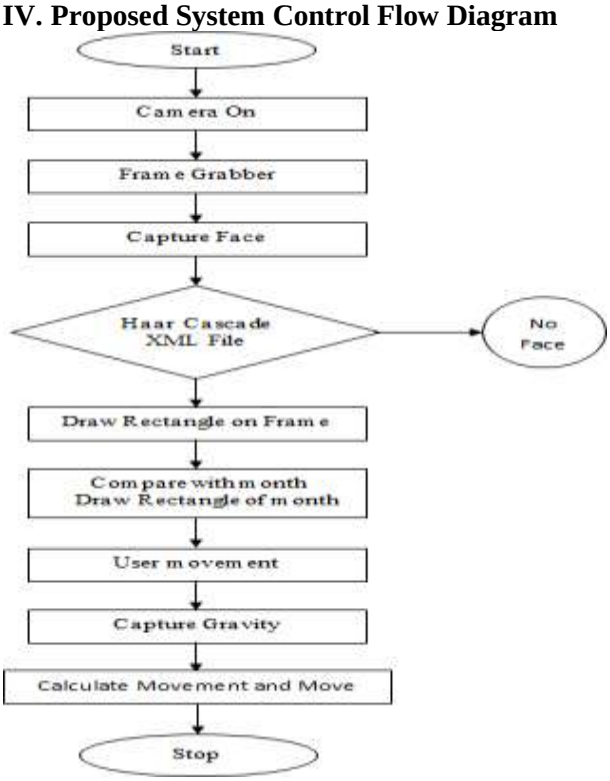
III. Proposed System

In our proposed system, we use mouth position interval data between front-frame and therefore the next-frame in video frames of head motion to verify if a mouth pursuit is movement data or command data, once a movement data has been determined, we have a tendency to use a mapping perform that is ready up by relationship between MMA and screen to map mouth position, then the $64000 mouse position can be got, by this manner we will operate mouse pointer in OS.

On the opposite ways in which, if click command data is decided, we will capture the mouth movement pursuit, and so use recognition machine to acknowledge the pursuit to work out which command it is. We have created experiments on Windows XP System to judge that our algorithmic rule will represent an honest impact for human-computer interface.

Real time Facedetection:
We are within the world that fast-paced and modernization. Now every day the usage of force has been reduced by the digitalized systems. So, day to day desires of the human is dynamical in to machine based mostly digital system. These changes are creating easier the activities for United States of America and scale back our mistakes.
Aim & Objective*:* The identified objectives that are to be archived by developing this application arelisted:
To develop an application for helping people with disabilities to control the mouse pointer on a computer by moving their head and eyesblinking.
To implement image processing techniques for face recognition and facetracking.
To implement in GameDevelopment.
To implement it in securityapplication
To implement it in Payment Processing.
To create a platform on software for using more sophisticated hardware devices to achieve greateraccuracy.
Tohavethesystemreadyfordeploymentinmultiplefieldsofengagementsuchasclassrooms, presentations,factorycontrolrooms,gamingetc.Betke et al. proposed a system that tracks the facial features and then translates them into the movements of the mouse pointer on the screen. Nabati and Behrad conferred a completely unique approach to estimate the 3D head cause from a monocular camera pictures for the management of mouse pointer movements on the screen andclicking events.

IV. Proposed System Control Flow Diagram



V. Future Scope

To recognize 2D Face gestures and uses them as input for a computer device. To create a platform on software for using more sophisticated hardware devices to achieve greater accuracy. To have the system ready for deployment in multiple fields of engagement such as classrooms, presentations, factory control rooms, gaming etc.

VI. Conclusion

Based on HAAR classification face detection algorithm this project discussed the detection algorithm Of head movement including head up, down, left, right. On the basis of these algorithm we designed the head trace mouse software system for disabled which can replace the traditional mouse by detecting user's head movements through a camera.The system has been offered to a number of upper limbed disabled, and obtained positive evaluation from them.

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