Abstract

Large numbers of input devices are available for human interaction with modern computer systems which are operated by hands and a few of them through gestures made using fingers and body movements. The advancements in assistive technology have proposed many concepts for controlling the input and mouse movements by detecting the basic eye movements of a user with the help of the eye tracking systems. We place our focus on the implementation of the computer mouse which is designed to detect the relative position of the cornea with respect to the initially calibrated centre and calculate the attributes like angle and speed at which the movement of mouse cursor has to be initiated. The basic Houghman circle detection algorithm is used to process the incoming video frames to detect the cornea which lies in the centre of the pupil and the position of the cornea is compared with respect to the calibrated centre point with the help of a square grid on which an algorithm is applied to calculate the speed and angle at which the mouse should move with respect to x axis.

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**Index Terms**

Computer Science Pattern Recognition

**Keywords**

Eye operated Mouse Houghman Circle Detection Grid MATLAB image processing disabled paralyzed
Computer Mouse using Eye Tracking System based on Houghman Circle Detection Algorithm with Grid Analysis