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Mouse Cursor Control using Eye Movements

Shinde Sakshi Sakhahari[1], Nirmal Shravani Bapu[2], Khaire Rashmi Ramesh[3], Vaidya Vedika Abhijit[4], Mrs. R. P. Kumawat[5], Miss V. D. Vaidya[6]
Department of Cloud Computing and Big Data[1,2,3,4,5,6]
Padmashri Dr. Vitthalrao Vikhe Patil Institute of Technology and Engineering (Polytechnic), Pravaranagar

Abstract: *Controlling the mouse by a physically challenged person is really a tough one. To find a solution for the people who cannot use the Mouse physically, we have proposed this mouse cursor control using Eye Movements. Eye gaze is an alternative way of accessing a computer using eye movements to control the mouse. For someone who fine touchscreens, mouse inaccessible, eye gaze is an alternative method to allow a user to operate their computer, using the movement of their eyes.*

Eye movement can be regarded as a pivotal real-time input medium for human-computer communication, which is especially important for people with physical disability. In order to improve the reliability, mobility, and usability of eye tracking technique in user-computer dialogue, a novel eye control system is proposed in this system using Webcam and without using any extra hardware.

The proposed system focuses on providing a simple and convenient interactive mode by only using user's eye. The usage flow of the proposed system is designed to perfectly follow human natural habits. The proposed system describes the implementation of both iris and movement of cursor according to iris position which can be used to control the cursor on the screen using webcam and implemented using Python.

Keywords: Eye movement tracking, gaze-based control, human-computer interaction (HCI), cursor control, assistive technology, electrooculography (EOG)