

GestureLink: Immersive Hand Guided Virtual Interface

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Abstract: *This report introduces an innovative Hand Gesture Mouse Controlling system that utilizes hand gestures captured via a webcam through a colour detection technique. This system enables users to navigate the computer cursor and perform clicking and dragging actions using different hand gestures. The proposed system relies solely on a low-resolution webcam functioning as a sensor, effectively tracking the user's hand gestures in multiple dimensions. The implementation will utilize Python and OpenCV for seamless integration. Hand gestures offer a natural and effortless means of communication. The camera's output will be displayed on the monitor, and shape and position information of the gestures will be acquired through colour detection. Additionally, the report outlines the implementation of a file transferring scheme using Python server programming.*

Keywords: Virtual Mouse, Hand Gestures, Image Capture, Image Processing, Colour Detection