

ABSTRACT

Camera is connected to a computer to record digital images of human hands to interpret human posture or attitude. Patterns on the human hand has been widely used for various mechanisms of Virtual Reality and an ongoing research in human computer interaction (Human-Computer Interaction). Ease of interaction between humans in operating the computer mouse is needed.

To implement this interaction, the recognition system is designed using four stages, those stages are, 1) acquisition, 2) pre-processing, 3) feature extraction, and 4) classification. In classification, the features with a purpose built of hand postures and compared according to the similarity measures and the most suitable posture is used as a mouse to control the operation of a computer cursor. In this final task, classification system was simulated using the decision tree method and finite state machine..

The simulation system which has been done, found that the system is using 886 of Th1 and 127 of Th2 on a decision tree classification system parameters. And the value of the time parameter classification system finite state machine to double-click the command obtained at 1180.8 milliseconds or about 1.2 seconds. Values on the simulation accuracy for the fist posture is 100%, 93.3% of palm posture, 100% for thumb-finger posture, and 86.67% for the fore-finger posture. With an average accuracy of 95%. It is obtained at a distance of 50cm between the camera and the object arms. As well as computing time averages about 590.4 milliseconds.

Keywords : Virtual Reality, Virtual Mouse, Decision Tree, Finite State Machine