ABSTRACT

Computer Vision is a field of science that studies how a computer can recognize an object that being observed by combining an image recognition and pattern recognition. An important purpose of computer vision is to imitate of how human's eye and brain works. Therefore, it is necessary to have a communication process between humans and computers. The communication process can be in the form of user's body gesture as an input. With the communication process with computers, we can integrate it with a device that can be connected to the computers, that resulting a process of controlling the device.

Based on this circumstances, a control system is designed to turn on and turn off the electric socket using humans body gesture as input of the system. The body gestures will be read by a computer in realtime using a webcam. After the gesture recognition process, the gesture is classified in order to recognize and distinguish a gesture from another. The classification result will be interpreted as an command to turn on and turn off the electric socket.

The result of the final project is that the device can turn on and off automatically based on the humans body gesture, and there is the measurement of voltage, current, and apparent power. The accuracy rate of measurement on the sensor used is 99.95% for voltage, 98.59% for current, and 98.53% for apparent power. The accuracy rate that obtained from 20 times of tests using the k-Nearest Neighbor classification method is 70%, with value of k=3, and using 100 training data.

Keywords : Gesture Recognition, K-Nearest Neighbor, Electric Socket Control