

ABSTRACT

The interaction between human and machine can be achieved by implementing human gesture applications known as human computer interaction (HCI). It has been developed for years, and now it can be easily found in many applications in real world e.g. in virtual reality, games, robotics, sign language recognition, etc. Gesture recognition has the potential to offer a natural way of communication between humans and machines. The most popular methods in human gesture application are hand gestures recognition. However, when trying to recognize hand gesture accurately, several of hand gestures recognition methods still have the same problems. This is caused by the existence of the uncontrolled environment problem, especially complex background. This study offered a method that can handle the complex background in hand gesture recognition by analyzing the pattern in spatio temporal domain. The system could reduce irregular noise in complex background significantly that affected to the recognition of hand gestures. The experiments were conducted based on our own recorded 180 videos with total of 15 gestures. The result of experiment showed that the proposed method could recognize 15 hand gestures with an accuracy of 98.33%.

Keywords: human computer interaction, hand gesture recognition, complex background, spatio temporal domain.