Abstract

Facial expression has a very important role in human communication. Expression can convey a message that can not be conveyed through words in human interaction interface. Because carries unique information, facial expression has an important role where there is interaction between man and machine. Expression recognition system can be a component in the interface between human and machine interaction that requires input from the user's emotional state using the system.

In this final project will be implemented human facial expression recognition system with Haar Features and Support Vector Machine (SVM). Haar Features will be used to obtain the coordinates of the features of the eyes and mouth to be weighted to get the features used for classification. Expression recognition system classifies facial expressions into five categories: angry, happy, sad, surprised and neutral.

The results showed that the system can not recognize expression well as the best accuracy that can be achieved the system is 63.3% on the test images, and 80% on a real-time testing. The best performance of the system work on the parameters of the number of features, namely 8 features a selection of the eyes and mouth, and the mapping kernel Support Vector Machine is RadialBasisFunction. This result is due to the feature extraction method that is not good enough so that the system can not properly recognize human facial expressions.

Keywords: face detection, facial expression recognition, *Support Vector Machine* , SVM, *Haar*