ABSRTACT

Facial Expression Recognition is the development of the concept of facial recognition which can include machines to know or classify human expressions. Expression on the human face is a means of non-verbal communication. In the talent search event, the facial expressions shown by the judges when watching the participants become one of the components to see whether the participant who is performing can pass to the next round or he will fail.

Convolutional neural network or CNN model is used to classify human expressions. The use of the Fer-2013 dataset with 5 expressions namely *Angry*, *Disgust*, *Happy*, *Neutral*, *Surprise* which was trained using the CNN Alexnet Architecture to obtain a classification model. Haar cascade is used to detect the faces of the judges and the use of fuzzy algorithms to predict the judges' decisions based on the number of expressions displayed by the judges.

The alexnet architecture modification in the expression classification process has a validation value of 5% higher than the original alexnet and has a test accuracy of 83% with an average precision value of 80%, an average recall value of 79% and an average f1-score of 80 %. The jury's decision prediction system based on facial expressions is rated as 90% effective in predicting decisions correctly.

Keyword: AlexNet, CNN, Facial Expression Recognition, Fuzzy, Haarcascade