Abstract

Human facial expressions can describe a person's emotions, by knowing human facial expressions, the process of recognizing human emotions will be helped. For example is to recognize individual satisfaction of a service. One method that is well-known today for facial expression recognition systems is the Convolutional Neural Network (CNN). In this study, a CNN architecture will be built which has 8 convolution layers, with a depth of 32 layers. Almost all research on facial expression recognition has used datasets of non-Indonesian races. Therefore, the authors conducted an analysis of the non-Indonesian racial dataset with the Indonesian race dataset using the cross dataset technique. In this system the self-built CNN is compared with other popular CNN architectures. The results obtained from this study are the accuracy of the test data by 91.29%, sensitivity or recall or True Positive Rate (TPR) by 91.29%, precision or Positive Predictive Value (PPV) by 91,29%, and overall accuracy by 97.51%. Therefore, with a high recall value and precision, it means that the classes in the test data are handled perfectly by the model built.

Keywords : facial expression recognition (FER), convolutional neural network (CNN), cross dataset.