

ABSTRACT

Micro-expression is a hidden expression of human. This expression occurs in a very short time and very difficult to see or detect in a daily conversation. A system that developed in this research is a system capable of analyzing micro-expressions. The expected output of this system is automation in micro-expression analysis and show the result performance. The method used is by using Convolutional Neural Network (CNN) with VGG19 architecture as feature extractor and random forest as classifier.

The results of this research use SMIC-Cropped database with the distribution of percentage between training:validation of 50:50, 55:45, 60:40, 65:35, 70:30, 75:25, 80:20, 85,15, 90:10. This research obtained accuracy results in the range of 98% - 100% . The distribution percentage of the database which have best performance is obtained when the split is 90:10 with result 99% - 100% accuracy, 99%-100% precision, 100% recall, and 100% f1-score.

Keywords: *Micro-expression, Deep Learning, CNN, VGG19, Random Forest, SMIC*