

ABSTRACT

Communication is something that is very important for human sustainability. Communication is one of the main activities to support all activities that we do. But there are some people who cannot communicate well due to their limitations, such as people who are deaf or mute. So, they are communicate using sign language as a communication tool, in Indonesia there are two sign languages, namely Bahasa Isyarat Indonesia (BISINDO) and Sistem Isyarat Bahasa Indonesia (SIBI). The two sign languages have their respective differences in terms of the philosophy of movement and technical movement.

Within these condition, the author have interest to do research in these two sign language. the research intended to recognize and classify sign language gesture and based from those two process can resulted sound output using Deep K-Nearest Neighbors method and it will be implemented in computer.

Based on the results of research conducted, for recognize sign language dynamic gesture are performed using image processing algorithm which have procedure taking three images from one sign language gesture with masking process and resizing pixel size, and then based on those three images, the classification of the gesture is carried out using the D-KNN algorithm. The result from D-KNN algorithm have average error at 43,6%. To complete the D-KNN algorithm, a DNN architecture with 200 neurons in each hidden layer has been selected and a learning rate value of 0.0003 can produce an average training accuracy of 64,48% with an average error of 1,36.

Keywords: Communication, sign language, BISINDO, SIBI, Deep K-Nearest Neighbor