ABSTRACT

Deafness is one of the problems in Indonesia. Deafness can be interpreted as a state of hearing loss that results in a person not being able to catch various stimulation, especially through the sense of hearing. The way to communicate with the deaf is to use sign language or body gestures. Communicating with the deaf will be even more difficult if we don't know the sign language in Indonesia. Therefore, this study discusses how to communicate with the deaf using BISINDO (Indonesian Sign Language) and design an application to learn to communicate with the deaf digitally.

In this study, a prototype application for the deaf was designed using machine learning with video image processing through the python programming language. The algorithm used for this research is a random tree classification or random forest classifier. The tools of this algorithm use library modules from scikit learn and mediapipe holistic . The resulting classification system detects gestures from BISINDO's sign vocabulary directly converted into a text.

In this study, the results of the model evaluation using a confusion matrix and have a scenario testing based on the distribution of training and data testing. From the results of the model evaluation, the accuracy, precision, sensitivity and f1-score each value reach 100%. This research is expected to help deaf people in communicating with normal people so that social inequality does not occur and i hope that this research can be continued to the next research.

Keywords: Deaf, Machine learning, scikit learn, mediapipe holistic, Python, random forest, confusion matrix.