

## ABSTRACT

Nowadays, communication has become a very important thing and cannot be separated from human life. The interaction among humans has become borderless caused by technology development. But, it doesn't happen to the Deaf. Language constraint is the real border for them to communicate with society normally and freely. The SIBI dictionary which is used in Indonesia now cannot be accessed by everyone; it's also expensive and thick. Different interpretation might also happen because the explanation and description about Sign Language gestures is not so clear.

This research implemented a Sign Language translator system based on video processing, image processing, and neural network ART-2. The recognizing parameter used in this research was hand shape, because almost all words in SIBI dictionary are based on hand shape which shows certain letter. The hand shape was taken from the last moving frame. Then, it would be processed and the features were taken using Histogram feature extraction. Neural network ART-2 was used as the recognizer of each hand shape. Over all, there were some processes done in this research, they are : frame difference to show movement, capturing to get the hand shape, counting the pixel 1 appearance as the feature extraction, and the last was recognizing using ART-2.

Output of this research was a system that was able to visualize SIBI dictionary and to recognize each hand shape in the end of movement. The testing result showed that this system was able to recognize Sign Language hand shape with highest accuracy was as much as 100% with total testing videos that were used was 90.

**Keywords:** Sign Language, hand shape, histogram, ART-2