# ABSTRACT

Difficulties for people who are deaf and speech impaired in interacting in society are often experienced. Especially if people who are deaf and speech impaired are still new due to the lack of Indonesian people understanding of sign language. The Indonesian state often uses the SIBI (*Sistem Isyarat Bahasa Indonesia*) sign language as a sign language that the government has standardized. To make it easier for the Indonesian people to understand sign language, research with a system for translating the SIBI language solves these problems.

This study designed a SIBI sign language classification system with static hand motion based on FMCW (Frequency Modulated Continous Wave) radar with a deep learning method with a CNN (Convolutional Neural Network) algorithm. The FMCW radar works to transmit signals, and then there is a reflected signal that is acquired from detecting static hand movements that are detected and generates a dataset. The dataset will be used as a training and *test* sample on the CNN algorithm, which has feature learning and classification stages. The processed CNN data will be used for the classification of SIBI words in order to facilitate interaction and communication between deaf and speech impaired people in the community.

This study aims to obtain a classification accuracy rate of more than 90%. The results were obtained by *test*ing the comparison parameters of the number of convolution *layer*s, the effect of the number of epochs, and two pooling *layer*s. The *test* parameters show that getting the overall accuracy by using these parameters each get an accuracy of 99.91% and 99.97%. This study met the proposed objectives, and SIBI sign language with static hand movements can be classified well.

**Keywords**: *SIBI Language, Radar FMCW, CNN.*