

## **ABSTRACT**

*Sign language is the main method of communication for people with hearing and speech impairments. However, different sign languages in different countries cause difficulties in recognizing them, so communication between people with disabilities and people who do not understand sign language is limited. This research aims to develop a device that can help translate sign language using sensors to detect hand gesture patterns. The device is designed to recognize sign language related to health conditions, such as asthma, cough, dizziness, depression, and tonsils. An Artificial Neural Network (ANN) model is used to process and recognize the patterns. The test results show that the ANN model developed has excellent performance, with accuracy, precision, recall, and F1-Score values of 98% each. The test was conducted after the model was implemented in the device and tested in recognizing the predefined sign language. Based on the results of the confusion matrix analysis, the device shows a high level of accuracy in translating sign language related to health conditions. Thus, this device is expected to be a solution for people with disabilities in conveying health information more easily and accurately.*

**Keywords:** *Disabilities; Sign Language; Artificial Neural Network; Machine Learning*