ABSTRACT

The communication gap between the public and the deaf community presents a significant social challenge that hinders interaction and information accessibility. This issue is further complicated by lexical variations within Indonesian Sign Language (BISINDO), such as the dialect used by the DPC Gerkatin community in Bandung, which is not widely understood. This research aims to bridge this communication divide by designing and developing an accessible translation system for the Bandung BISINDO vocabulary. The proposed solution is a web-based application that utilizes deep learning with a Long Short-Term Memory (LSTM) architecture to perform real-time translation via the user's device camera. The implementation process involved several stages: collecting a dataset of sign language videos, extracting movement keypoints using MediaPipe, training the LSTM model, and integrating the trained model into a web interface built with the Flask framework. The test results demonstrate excellent model performance, achieving an average accuracy of 96.30% and a precision of 96.83%. Concurrently, black-box testing validated that all website functionalities operate correctly as specified.

Keywords: *BISINDO, deep learning, LSTM, website, real-time.*