Project Report

Sign Language Detection

By:

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Problem:

Deaf people suffer from the way of communicating with others, especially in dealing with government and private agencies, public services, and stores, With the difficulty of providing a sign language translator for all parties, The difficulty of communication for them is increasing.

Solution:

Develop a technical solution that translates sign language and makes it understandable to all people by using deep learning

DATA DISCRIPTION:

The data for this project are videos of Arabic sign language

Tools:

pandas

scikit learn
machine learning in Python

jupyter

MediaPipe

OpenCV

K Keras
A deep learning library

Contents:

- **Importing the required libraries.**
- **Collecting the data as videos .**
  - **Using mediapipe library**
  - **Convert Data to np.array**
- **Data Modeling**
  - **LSTM Model**
  - **GRU Model**
- **Results:**
  - **getting a real time translating of Arabic Sign language**

Conclusion:

In this project, we applied several types of machine learning models in a data set of different words to learn about the Arabic sign language. We also noticed the diversity of words and some machine learning algorithms trained the system on Match gestures with words and expressions more accurately. Finally, the main purpose of our project is to help people from the deaf community to be able to communicate more easily with others.