

Project Proposal: Sign Language Detection System

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Objective:

This project's goal is to create a computer vision-based system capable of recognizing and translating sign language motions into text. The suggested system would recognize sign language motions from camera movies using deep learning models. The technology will then convert the movements into text, making it handy for deaf or hard of hearing people.

Background:

Sign language is a visual language used to communicate by people who are deaf or hard of hearing. It consists of hand movements, face emotions, and body language. While sign language is an efficient mode of communication, it can be difficult for those who do not understand it. As a result, establishing a computer vision-based system capable of recognizing and translating sign language into text can aid in closing the communication gap between those who are deaf or hard of hearing and those who do not understand sign language.

Approach:

Deep learning models will be used in the proposed system to recognize sign language motions from camera videos. The procedure consists of the following steps:

- **Data Gathering:** Compile a dataset of sign language videos for various gestures.
- **Data Preprocessing:** Normalize the pictures in the sign language videos before training the deep learning models.
- **Deep Learning Model:** Create and train a deep learning model that can recognize sign language movements from videos, such as a Convolutional Neural Network (CNN) or a Recurrent Neural Network (RNN).
- **Sign Language Detection:** Use the trained deep learning model to recognize sign language motions in camera videos.
- **Translation:** Using Natural Language Processing (NLP) techniques, translate the identified sign language motions into text.

Expected Outcome:

The proposed method is expected to recognize and interpret sign language motions into text with high accuracy. The system will recognize sign language motions from camera videos using deep learning models, making it beneficial for people who are deaf or hard of hearing.