**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**V Semester - CIE2 Component**

**ARTIFICIAL INTELLIGENCE (CS53)**

**TERM: Sep - Dec 2022**

**PROJECT SYNOPSIS**

**04/11/2022**

**PROJECT TEAM MEMBERS**

|  |  |  |
| --- | --- | --- |
| **Sl. No** | **USN** | **Name** |
| 1 | 1MS20CS008 | ADITYA SHARMA |
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|  |  |  |

LIMITATIONS-

* This technology is one that allows a disabled community to further integrate into an abled community, and may be viewed as an assimilation and bending to the rules of privileged community. This may reduce efforts of hearing people to accommodate for deaf people.
* The dataset needs to be diverse enough in order to accommodate people of all skin tones and in all environments. A bias in data could possibly disadvantage deaf people of a certain ethnic group.

CONTRIBUTION TO SOCIETY-

The 2011 Indian census cites roughly 1.3 million people with “hearingimpairment”. In contrast to that numbers from India’s National Association of the Deaf estimates that 18 million people –roughly 1 per cent of Indian population are deaf. These statistics formed the motivation for our project. As these speech impairment and deaf people need a proper channel to communicate with normal people there is a need for a system . Not all normal people can understand sign language of impaired people. Our 5 project hence is aimed at converting the sign language gestures into text that is readable for normal people.

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**Sign Language Detection using ACTION RECOGNITION**

SCOPE-

The Sign Language substantially facilitates communication among people that are either hard of hearing or mute. According to a few research studies, at least 70 million people all across the world communicate through sign language. However, there are only a few hundred thousand speakers, limiting the number of persons with whom they can interact comfortably. Alternative modes of communication, such as written communication, can be inconvenient, impersonal, and even cumbersome on a daily basis, and even more so in an emergency.

OBJECTIVE-

We present an ASL learning platform that employs LSTM neural networks to recognize the users gesture (action recognition) and deliver real-time feedback in order to overcome this barrier and enable dynamic communication.

The main objective of this effort is to explore the utility of two feature extraction methods, namely, hand contour and complex moments to solve the hand gesture recognition problem by keypoint detection model to build a sequence of keypoints which can then be passed to an action detection model to decode sign.

STATEMENT- To leverage a keypoint detection model to build a sequence of keypoints which can then be passed to an action detection model to decode sign language! As part of the model building process you'll be able to leverage Tensorflow and Keras to build a deep neural network that leverages LSTM layers to handle the sequence of keypoints.

**Contents:**

* **Title of the Project:**
* **Statement about the Problem:**
* **Objective :** *(a clear picture of the project),minimum 2 objectives*
* **Scope of the Project:**
* **Working Methodology:** *1.5 pages (you need to justify, how yours is new / better amongst the existing technologies/techniques/methods, also the summary of the project to be incorporated)*
* **Limitations of the proposed system:**
* **What would the project make?**
* **contribution to the society,**
* **References**

*(Include all the Papers that you have chosen for doing Literature review. 15 minimum.)*

**Signature of the Guide with date**

**NOTE:**

* **Guidelines:** Font - Times New Roman Size: 12
* **Excluding cover page, contents should of 2 pages only.**
* **Plagiarism report** should be attached as 4th page.