Sign Language using Machine Learning

Nidhi Negi[1], Sonali Punde[2], Akshay Shinde[3], Simran Punjabi[4], Prof. Namdeo Kedare[5]

[1-5]Information Technology, Dhole Patil College of Engineering Pune

---***---

Abstract- The only features human beings use to communicate with each other are speech and vocabulary. Because of our ability to hear, we can see one another's feelings. In order to give instructions right now, we can even use speech recognition. But what if it can't be heard and you can't finally talk about it. Visual communication continues to be the main contact method of people with developmental disabilities and deaf people, and automatic comprehension of sign language is therefore a comprehensive area of study intended to ensure their independent lives. With the use of image recognition and artificial intelligence, a number of techniques and innovations have been proposed in this field. For recognize or convert the signs into an appropriate sequence, each simple sign detection system is built. In this article, the dual-handed Indian foreign languages is collected as a collection of images and interpreted with the aid of Python and then converted into speech and text. The proposed approach is meant to give voice to speechless persons..

Keywords- Image processing, noise removal, feature extraction and matching, static and dynamic gesture.

I. INTRODUCTION

Sign languages are vibrant on a world-wide basis. There are several sign languages in the country that are widely used, such as ASL (American Sign Language) ISL (Indian Sign Language), BSL (Bangladesh Sign Language), MSL (Malaysian Sign Language). These languages are Designed and Created with a lot of effort and realistic research to make it possible for mute people. Any language shall be developed with its term and its meaning. This Language is created as "Sign" and "Action of the Sign." And we can't help them understand the significance of a symbol by writing a phrase here. Since they're deaf and can't listen from birth, we can't teach certain terms.

Artificial intelligence is an implementation of machine learning (AI) that allows structures its opportunity can continuously know or build on knowledge without being directly programmed. Artificial intelligence focuses on the development of computer programmers which can view information and data about themselves

The principle of identification of gestures is to create a context in which individual human gestures can be recognized and used for the transmitting of knowledge. A camera shows the motions of the human body in a gesture recognition device and transmits data to a device that uses gestures as inputs to monitor devices or applications. Creating a human-computer interface is the concept of creating a hand motion recognition system by using recognized movements to access usable data.

II. PROBLEM STATEMENT

A random person if visited to deaf person and if deaf person is in problem and trying to explain it then it is very difficult to understand what exactly he is trying to say. Delay in detecting his Sign Language can turn into big critical problem for that deaf person. These kind of people cannot spend normal life. They face communication issues at every point. Also they get boundaries and limitations to their dreams and professional aims. Hence they get demotivated and Inferiority Complex.

III. MOTIVATION

- To help the people who does not know sign language. To help the clear communication between normal people and deaf mute people.

IV. SYSTEM ARCHITECTURE
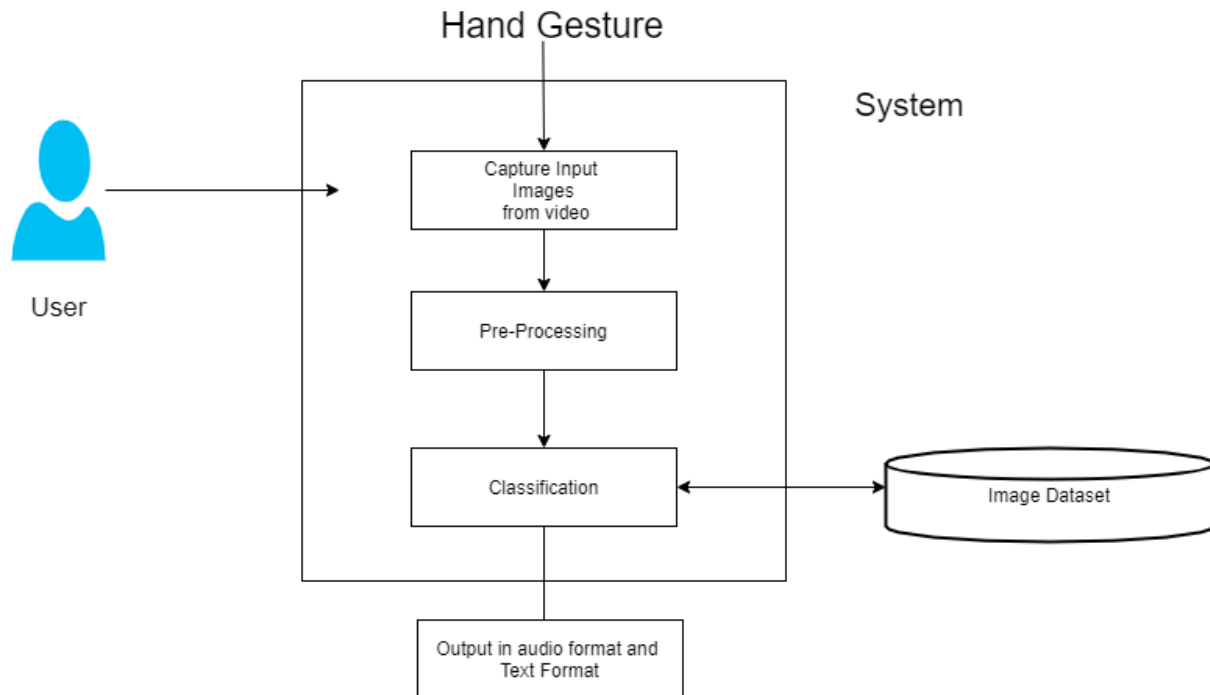
V. EXISTING SYSTEM

The field of sign language to text is less advanced, although some recent breakthroughs have been made with data gloves for positional extraction. We are seeking to bridge cultural gaps with technology as a tool. We plan to make technologies accessible to deafmutes, too to allow them to communicate better with people who do not know sign language.

VI. CONCLUSION

The initialization was then achieved for recording live streaming of the camera. Two motion detections, like a palm and a hand, of a green rectangle shaped by integral pictures. The second stage is the extracted text of the file, which is compared to the stored positive negative integral image dataset and performs the fingertip monitoring by signal detection

REFERENCES

[1]2015, Truong Quang Vinh, "Real-Time Traffic Sign Detection and Recognition System Based on FriendlyARM Tiny4412 Board".

[2] 2016, Rafael C. Gonzalez and Richard E. Woods, "Digital Image Processing", Third Edition, - Pearson Education, pp. 864-874.

[3] Wang Jingqiu, Jhang Ting ," ARM Based Gesture Recognition System using data glove", 26th Chinese control and Decision Conference,2016.

[4] Shubhangi G Shinde, Rajashri R Itkarkar, Anil kumar,"Gesture to speech conversion For Sign Language Recognition", International Journal of Innovation and advancement in Computer science, Volume 6, Issue 9 , Sep 2017.

[5] S.K.Imam Basha, S.Ramasubba Reddy," Speaking System To Mute People Using Hand Gestures", International Research Journal of Engineering and Technology, Volume 05, Issue:09, Sep 2018.

[6] Ashwini V Rewatkar, Abid G M Sheikh, Mohini S Rakshak, Neha D.Ranyat,"Implementation of Gesture To Voice Conversion For Hearing and Speech Diability, March 2016.

[7] Sunitha K A, Anitha Sarswathi P, Aarthi M, Jayapriya K ,Lingam Sunny ,"Deaf Mute Communication Interpreter" International Journal of applied Engineering Research-A Review, Volume 11,pp 290- 296,2016.

[8] Anbarasi Rajamohan, Hemavathy R, Dhanalakshmi M. "Deaf-Mute Communication Interpreter", International Journal of Scientific Engineering and Technology",Volume 2, pp:336-341, May 2015.