

REAL TIME COMMUNICATION SYSTEM POWERED BY AI FOR SPECALLY ABLED

IBM – LITERATURE SURVEY

UNDER THE GUIDANCE OF

INDUSTRY MENTOR(S) NAME: Divya

FACULTY MENTOR(S) NAME : Varadharajan M

SUBMITTED BY

AISHWARYA R - 210919106006

DHARANI M - 210919106022

JAYANTHINI S - 210919106034

KANIMOZHI V – 210919106037

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

LOYOLA INSTITUTE OF TECHNOLOGY

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OBJECTIVE:

The project aims to develop a system that converts the sign language into a human hearing voice in the desired language to convey a message to normal people, as well as convert speech into understandable sign language for the deaf and dumb.

ABSRTACT:

In our society, we have people with disabilities. The technology is developing day by day but no significant developments are undertaken for the betterment of these people. Communications between deaf-mute and a normal person has always been a challenging task. It is very difficult for mute people to convey their message to normal people. Since normal people are not trained on hand sign language. In emergency times conveying their message is very difficult. The human hand has remained a popular choice to convey information in situations where other forms like speech cannot be used. Voice Conversion System with Hand Gesture Recognition and translation will be very useful to have a proper conversation between a normal person and an impaired person in any language. This project aims to develop a system that converts the sign language into a human hearing voice in the desired language to convey a message to normal people, as well as convert speech into understandable sign language for the deaf and dumb.

LITERATURE SURVEY:

PAPER TITTLE	AUTHORS	YEAR	MEASURES
Robust hand gesture recognition based on finger-earth mover's distance with a commodity depth camera.	Zhou Ren Junsong Yuan Zhengyou Zhang Authors Info & Claims	2019	This paper focuses on building a robust hand gesture recognition system using the Kinect sensor. To handle the noisy hand shape obtained from the Kinect sensor, we propose a novel distance metric for hand dissimilarity measure, called Finger-Earth Mover's Distance (FEMD). As it only matches fingers while not the whole hand shape, it can better distinguish hand gestures of slight differences. The extensive experiments demonstrate the accuracy, efficiency, and robustness of our hand gesture recognition system
Hand Gesture Recognition Based on Deep Learning	Jing-Hao Sun Ting-Ting Ji Shu-Bin Zhang Jia-Kui Yang	2017	This paper realizes the segmentation of hand gestures by establishing the skin color model and AdaBoost classifier based on haar according to the particularity of skin color for hand gestures, as well as the denaturation of hand gestures with one frame of video being cut for analysis. In this regard, the human hand is segmentd from the complicated background, the real-time hand gesture tracking is also realized by CamShift algorithm.
Adaptive Hand Gesture Recognition System Using Machine Learning Approach	Rina Damdoo Kanak Kalyani and Jignyasa Sanghavi	2020	In gesture recognition system particularly hand gesture recognition provides a much effective and natural way for non-verbal data exchange when working with HCI system. This paper presents a real time vision approach for recognizing hand gesture based on machine learning using MATALB. Information gathering is a first step in our proposed approach where we will develop dynamic hand gesture dataset of sign language.
Static Hand Gesture Recognition using Convolutional Neural	Md. Zahirul Islam. Raihan Ul Islam . Mohammad Shahadat	2018	Recent research has proved the supremacy of Convolutional Neural Network (CNN) for image representation and classification. Since, CNN can learn complex and non-linear relationships among images, in this paper, a static hand gesture recognition method using CNN was proposed. Data augmentation like rescaling, zooming, shearing

REFERENCES:

*Reda MM, Mohammed NG, Azeem RAR, Seoud A (2018) SVBicomm signs voice bidirectional communication systems for normal, deaf and dumb and blind people based on machine learning. In: 1st international conference on computer application and information security (ICCAIS). IEEE, Riyadh

*Kumar S, Yadav G, Singh HP, Malhotra S, Gupta A (2018) SSVM classifier and hand gesture based sign language recognition. In: International conference on intelligent circuits and systems (ICICS). Phagwara

*Tao W, Leu MC, Yin Z (2018) ASL alphabets recognition using conventional neural networks with multiview augmentation and inference fusion. Eng Appl Artif Intell 76:202–213