

Real-Time Communication System Powered by AI for Specially Abled

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LITERATURE SURVEY

Introduction:

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.

S NO	TITLE	Authors	Abstract	Drawbacks
1	Sign Language Recognition System for People	Bayan Mohammed Saleh	Communication plays a significant role in making the world a better place. Communication creates bonding and relations among the people, whether persona, social, or political views. Most people communicate efficiently without any issues, but many cannot due to disability. They cannot hear or speak, which makes Earth a problematic place to live for them. Even simple basic tasks become difficult for them. Disability is an emotive human condition. It limits the individual to a certain level of performance. Being deaf and dumb pushes the subject to oblivion, highly introverted. In a	<ul style="list-style-type: none">* They are costly and are difficult to be used.* Classification methods are also varying from researcher

			<p>world of inequality, this society needs empowerment. Harnessing technology to improve their welfare is necessary. In a tech era, no one should be limited due to his or her inability. The application of technology should create a platform or a world of equality despite the natural state of humans. On the other hand, technology is the most innovative thing on Earth for every time the clock ticks, researchers, software engineers, programmers, and information technology specialists are always coming up with bright ideas to provide convenience to everyone. This paper shows how artificial intelligence is being used to help people who are unable to do what most people do in their everyday lives. Aligned with communication, D-talk is a system that allows people who are unable to talk and hear be fully understood and for them to learn their language easier and also for the people that would interact and communicate with them.</p>	
2	Web-Enabled Medical Speech to Sign Language Translator Using Recorded Video	Farhia Ahmed	<p>We describe an experiment in which sign-language output in Swiss French Sign Language (LSF-CH) and Australian Sign Language (Auslan) was added to a limited-domain medical speech translation system using a recorded video method. By constructing a suitable web tool to manage the recording procedure, the overhead involved in creating and manipulating the large set of files involved could be made easily manageable, allowing us to focus on the interesting and non-trivial problems which arise at the translation level. Initial experiences with the system suggest that the recorded videos, despite their unprofessional appearance, are readily comprehensible to Deaf informants, and that the method is promising as a simple short-term solution for this typ</p>	<ul style="list-style-type: none"> • Internet: It would require an internet connection for the working of the website. • Auto-Verification: It cannot automatically verify the genuine users.

3	Real-Time American Sign Language Recognition from Video Using Hidden Markov Models	Thad Starner	Hidden Markov models (HMMs) have been used prominently and successfully in speech recognition and, more recently, in handwriting recognition. Consequently, they seem ideal for visual recognition of complex, structured hand gestures such as are found in sign language. We describe a real-time HMM-based system for recognizing sentence level American Sign Language (ASL) which attains a word accuracy of 99.2% without explicitly modeling the fingers	<p>The Evaluation Problem and the Forward Algorithm.</p> <p>The Decoding Problem and the Viterbi Algorithm</p>
4	Development an Automatic Speech to Facial Animation Conversion for Improve Deaf Lives	Hamidreza Kasaei	In this paper, we propose design and initial implementation of a robust system which can automatically translates voice into text and text to sign language animations. Sign Language Translation Systems could significantly improve deaf lives especially in communications, exchange of information and employment of machine for translation conversations from one language to another has. Therefore, considering these points, it seems necessary to study the speech recognition. Usually, the voice recognition algorithms address three major challenges. The first is extracting feature form speech and the second is	<p>Background noise</p> <p>Proper Pronunciation</p>

			<p>when limited sound gallery are available for recognition, and the final challenge is to improve speaker dependent to speaker independent voice recognition. Extracting feature form speech is an important stage in our method. Different procedures are available for extracting feature form speech. One of the commonest of which used in speech recognition systems is Mel-Frequency Cepstral Coefficients (MFCCs). The algorithm starts with preprocessing and signal conditioning. Next extracting feature form speech using Cepstral coefficients will be done. Then the result of this process sends to segmentation part. Finally recognition part recognizes the words and then converting word recognized to facial animation. The project is still in progress and some new interesting methods are described in the current report.</p>	
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5	Automatic Speech Recognition and Speech Variability	Mohamed Benzeghiba	<p>Major progress is being recorded regularly on both the technology and exploitation of automatic speech recognition (ASR) and spoken language systems. However, there are still technological barriers to flexible solutions and user satisfaction under some circumstances. This is related to several factors, such as the sensitivity to the environment (background noise), or the weak representation of grammatical and semantic knowledge. Current research is also emphasizing deficiencies in dealing with variation naturally present in speech. For instance, the lack of robustness to foreign accents precludes the use by specific populations. Also, some applications, like directory assistance, particularly stress the core recognition technology due to the very high active vocabulary (application perplexity)</p>	<p>Background noise is one of the biggest challenges</p>
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			the existing techniques used in web based blood bank system and at end I will conclude this paper	
6	AI-Enabled Real-Time Sign Language Translator	Yash Patil	<p>Even in recent times with the advancement in technology, there exists a hindrance in seamless communication with the hearing and speech-impaired section of the society. Inclusive communication is instrumental for a society to function as a whole. It is not only essential for exchanging ideas, but also for progress and innovation. A lack of means for spontaneous communication should not stand in the way of socializing, employment or productivity. We propose an android application that interprets American Sign Language into English language using convolutional neural network with an aim to provide real-time translation to facilitate seamless communication. Although there is a presence of computer-based translation application for sign language recognition, the availability of such applications over an android platform is relatively few in number. The proposed sign language translator finds its applicability in gesture-controlled applications like human-computer interaction, providing control action for various home appliances and electronic gadgets that are triggered by gestures when given as an input. The proposed work is aimed to transform hearing and speech abnormality to normality, thus eliminating their dependencies.</p>	people who do not have full use of their hands.