Ideation Phase

Literature Survey

Date	19 September 2022
Team ID	PNT2022TMID09247
Project Name	Real-Time Communication System Powered by AI for Specially Abled

S No	Reference Paper	Abstract
1.	Saed Mian Qaisar, Sarah Niyazi, Abdulhamit Subasi, “Efficient Isolated Speech to Sign Conversion Based on the Adaptive Rate Processing”; Procedia Computer Science, Vol. 163, PP. 35–40, 2019.	The process of discourse to sign was executed based on the adaptive rate processing. The algorithm used for the project was Mel frequency cepstral coefficients also known as MFCC. The final result achieved was the conversion of speech into the text which in turn converts to sign language. This system had some issues, speech was converted into individual alphabets instead of sentences. Thus, phrases were difficult to decipher due to individual alphabet cluttering.
2.	T. Bohra, S. Sompura, K. Parekh and P. Raut, "Real-Time Two Way Communication System for Speech and Hearing Impaired Using Computer Vision and Deep Learning" International Conference on Smart Systems and Inventive Technology (ICSSIT), pp. 734-739, 2019.	The author has implemented the speech conversion through Python language. The phrase that needs to be converted is inputted which is parsed for tagging through NLP libraries. The sign equivalent to the tagged phrase is fetched from the database for display. Today’s technological advancement in Computer Vision through Deep Learning has progressed way ahead by automating speech to sign conversion.
3.	Ma, Jiyong, Wen Gao, Jiangqin Wu, and Chunli Wang. "A continuous Chinese Sign Language recognition system." In Proceedings Fourth IEEE International Conference on Automatic Face and Gesture Recognition (Cat. No. PR00580), pp. 428-433. IEEE, 2000.	This paper introduced as contribution to the Statistical Markov Model for a concurrent framework intended to recognize CSL (Chinese Sign Language). Information from two Data-Gloves and a three-dimensional tracer is assembled. To section the training sentence into essential components, Dynamic Programming (DP) method was utilized. Assessing was finished by the Welch-Baum algorithm. Experiment outcomes utilizing 80 sentences showed 94.7% acknowledge rates.
4.	Vogler, C., and D. Handshapes Metaxas. "Movements: Multiple-Channel American Sign Language Recognition." Gesture-Based Communication in Human-Computer Interaction. Lecture Notes in Computer Science: 247-258.	In this paper, American Sign Language acknowledge is done using Parallel Hidden Markov models (PaHMMs). They expressed that phoneme can be utilized rather than unabridged signs for a constant identification system.

5.	Pavlovic, V, Sharma, R., &Huang T., “Visual Interpretation of Hand Gestures for Human-Computer Interaction (HCI): A Review”, IEEE TOPAMI, VOL. 19, NO. 7, 1999.	This paper analyses about the ocular translation of hand signs for HCI (Human - Computer Interaction). The paper published on 1997 underlines the three-dimensional model of the human hand or a picture aspect model of the human hand utilization. 3D models offered a strategy for more intricate demonstrating of hand gestures, at the time this paper was published. But this led to computational obstacles that had not been conquered given the constant necessities of HCI.