LITERATURE SURVEY

Real-Time Communication System Powered By AI For Specially Abled

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1) A Signer Independent Sign Language Recognition with Coarticulation Elimination from Live Videos: an Indian Scenario
P.K. Athira, C.J. Sruthi, A. Lijiya (2019)

Advantage: Economical can be implemented with a mobile camera which makes it very user-friendly

Disadvantage: Not efficient under cluttered backgrounds and different illumination conditions

2.) White, J.J.: Fairness of AI for people with disabilities: problem analysis and interdisciplinary collaboration. ACM SIGACCESS Access. Comput. 125, 1 (2020)

Much has been written about the potential of artifcial intelligence (AI) to support, and even transform, the lives of disabled people. It is true that many advances have been made, ranging from robotic arms and other prosthetic limbs supported by AI, decision support tools to aid clinicians and the disabled themselves, and route planning software for those with visual impairment. Many individuals are benefting from the use of such tools, improving our accessibility and changing lives. But what are the true limits of such tools? What are the ethics of allowing AI tools to suggest diferent courses of action, or aid in decision-making? And does AI ofter too much promise for individuals? I have recently undergone a life changing accident which has left me severely disabled, and together with my daughter who is blind, we shall explore the day-to-day realities of how AI can support, and frustrate, disabled people. From this, we will draw some conclusions as to how AI software and technology might best be developed in the future.

3) A Deep Learning based Indian Sign Language Recognition System
Sruthi C. J and Lijiya A (2019)

Advantage: Training accuracy of 99.93% and with testing and validation accuracy of 98.64%.

Disadvantage: Facial expression and context analysis are the other part not included.

4) Deep Convolutional Neural Networks for Sign Language Recognition G. Anantha Rao, K. Syamala, P.V.V. Kishore, A.S.C.S. Sastry (2018)

Advantage: A less amount of training and validation loss is observed with the proposed CNN architecture.

Disadvantage: The database is not available publicly.

5) Bigham, J. P., Jayant, C., Miller, A., White, B., & Yeh, T. (2010, June). VizWiz::Locate It-enabling blind people to locate objects in their environment. In 2010 IEEE Computer Society Conference on Computer Vision and Pattern Recognition-Workshops (pp. 65-72). IEEE.

The sixth sense is a multi-platform app for aiding the people in need that is people who are handicapped in the form of lack of speech (dumb), lack of hearing (deaf), lack of sight (blind), lack of judicial power to differentiate between objects (visual agnosia) and people suffering from autism (characterized by great difficulty in communicating and forming relationships with other people and in using language and abstract concepts). Our current implementation of the product is on two platforms, namely, mobile and a web app. The mobile app even works for object detection cases in offline mode. What we want to achieve using this is to make a better world for the people suffering from disabilities as well as an educational end for people with cognitive disabilities using our app. The current implementation deals with object recognition and text to speech and a speech to text converter .The speech to text converter and text to speech converter utilized the Web Speech API (Application Program Interface) for the website and text to speech and speech to text library for the mobile platform. The object recognition wouldn't fetch enough use out of a website. Hence, it has been implemented on the mobile app utilizing the Firebase ML tool kit and different pre-trained models, which are both available offline as well as online.