Real-Time Communication System Powered by AI for specially abled

An IBM guided project

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Literature survey

1.Sign Language Recognition

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ABSTRACT:

Millions of people around the world suffer from hearing disability. This large number demonstrates the importance of developing a sign language recognition system converting sign language to text for sign language to become clearer to understand without a translator. In this paper, a sign language recognition system using Backpropagation Neural Network Algorithm is proposed based on American Sign Language. The neural network of this system used extracted image features as input and it was trained using a back-propagation algorithm to recognize which letter was the given letter with accuracy of respectively 70% and 85% with two proposed classifiers.

2.Real-Time Recognition of Indian Sign Language

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National Engineering College, Kovilpatti, Tamil Nadu, India

ABSTRACT:

The real-time sign language recognition system is developed for recognising the gestures of Indian Sign Language (ISL). Generally, sign languages consist of hand gestures and facial expressions. For recognising the signs, the Regions of Interest (ROI) are identified and tracked using the skin segmentation feature of OpenCV. The training and prediction of hand gestures are performed by applying fuzzy c-means clustering machine learning algorithm. The gesture recognition has many applications such as gesture controlled robots and automated homes, game control, Human-Computer Interaction (HCI) and sign language interpretation. The proposed system is used to recognize the real-time signs. Hence it is very much useful for hearing and speech impaired people to communicate with normal people.

3.Sign Language Recognition

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ABSTRACT:

It presents a novel system to aid in communicating with those having vocal and hearing disabilities. It discusses an improved method for sign language recognition and conversion of speech to signs. The algorithm devised is capable of extracting signs from video sequences under a minimally cluttered and dynamic background using skin color segmentation. It distinguishes between static and dynamic gestures and extracts the appropriate feature vector. These are classified using Support Vector Machines. Speech recognition is built upon a standard module - Sphinx. Experimental results show satisfactory segmentation of signs under diverse backgrounds and relatively high accuracy in gesture and speech recognition.

4.SIGN LANGUAGE RECOGNITION USING PYTHON AND OPENCV

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ABSTRACT:

It focuses on a review of the literature on hand gesture techniques and introduces their merits and limitations under different circumstances. The theories of hand segmentation and the hand detection system, which employ the Haar cascade classifier, may be used to construct hand gesture recognition using Python and OpenCV. The use of hand gestures as a natural interface motivates research in gesture taxonomies, representations, and recognition algorithms, as well as software platforms and frameworks, all of which are briefly covered in this paper. We represent a comprehensive review of vision based sign recognition algorithms published in the previous 16 years, emphasizing the importance of taking these things into consideration in addition to the algorithm's recognition accuracy when predicting its success in real world applications.