

LITERATURE SURVEY

TITLE : Sign Language Glove With Voice Synthesizer

AUTHOR : Dr.Pramod sharma, Pooja raghav, Arpita Gupta,
Vivek Garg

YEAR : 2017

This project is based on the need of developing an electronic device that can translate finger gesture into text or speech in order to make the Communication take place between the mute communities with the normal people. A data glove is used to convey the finger gesture of a mute person. The data glove is normal rubber or cloth glove, fitted with flex sensors along the length of each finger. Mute people can use the glove to perform hand gesture and the same will be converted into text as well as in speech so that normal people can understand the mute person expression.

**TITLE : Portal Communication Aid for Specially Challenged:
Conversion of Hand Gestures into Voice and vice versa**

AUTHOR : T.Meera devi, K.M.Sharavana Raju

YEAR : 2020

Communications between a normal person and with the person having hearing loss and dumb have constantly been a tough assignment. The work is to develop a portable device for the disabled people those who are not able to communicate with the normal persons properly. The technology development presents a solution to build up a sign language conversion system to support the individual with hearing loss and mute people. The core idea is to build up a real time embedded product for the disabled persons without handheld gloves to assist their announcement in efficient way. Similarly the speech communication by normal persons will be converted into gestures for the disabled persons for their better understanding. This device will act as a two way communication device between normal and disabled persons.

TITLE : Indian sign Language Gesture Recognition

AUTHOR : Neha Baranwal, Kumud Tripathi and G.C.Nandi

YEAR : 2018

Today sign language is a vibrant field of research because it helps us to establish communication between hearing impaired community and normal community. In this paper, we proposed a novel continuous Indian Sign Language (ISL) gesture recognition technique where possibility theory (PT) has been applied. Preprocessing and extraction of overlapping frames are the major issues which is being covered in this paper using background modeling and noble gradient method. These isolated gestures are further processed and classified. Experiments are performed on 10 sentences of continuous ISL having 1000 samples. From analysis of results we found that our proposed approach gives 92% classification results on continuous ISL. A classified isolated ISL gestures are combined for generating a judgment of conviction in the form of text or words.

TITLE : Image Processing Based Language Converter for Deaf and Dumb

**AUTHOR : Koli P.B, Chaudhari Ashwini, Malkar Sonam,
Pawale Kavita & Tayde Amrapali**

YEAR : 2017

This paper presents a language converter for deaf and dumb people. In the present world it is very difficult for the deaf & dumb people to talk with the ordinary people. So it becomes impossible for them to communicate with the ordinary people unless and until ordinary people like us learn the sign language for the purpose of communication. The sign language of deaf and dumb is quite difficult to learn and it is not possible for everybody to learn that language. So every person cannot come and share their thoughts with these physically impaired people. So here is a system which would enable the deaf and dumb to communicate with each and every one. In this system a webcam is placed in front of the physically impaired person. The physically impaired person would be wearing colored rings in his fingers. When he makes the gestures of the alphabets, the webcam will capture the exact positions of the rings and perform image processing using color recognition to determine the co-ordinates of the colors. The co-ordinates captured will be mapped with the one previously stored and accordingly exact alphabet will be captured. Continuing in this way physically impaired person will be able to go through the entire sentence that he wants to communicate. Later on this sentence will be translated into speech so that it would be audible to everyone.

TITLE : Census-Based Vision for auditory depth images and speech navigation of visually impaired users

AUTHOR : soo-chang pei, Yu-Ying Wang

YEAR : 2009

In neuroscience and psychology, visual imagery is the subjective experience of seeing in the absence of visual stimulation. Someone may experience touch or sound as a result of visual imagery. In this paper, a new visual image aid which can provide a different way to visualize the image for visually impaired users is proposed. It is done by applying the depth image to an Image-To-Sound Mapping (ITSM) system. The proposed algorithm utilizes a sparse Census transform (SCT) and color segmentation to obtain an illuminationinvariant depth image. The depth image is applied to the ITSM system and then a clear and simple sound output is obtained for constructing a mental image. Moreover, the reliable three-dimensional (3D) data of close objects are extracted and interpreted as a semantic speech output. Experimental results show that visually impaired users can perceive the image easily and without training by adding verbal description to the visually image aid. In good and poor illuminated environments, the performance is 82% and 80% respectively. The performance of our proposed systems was not influenced by various lighting.

TITLE : Sign Language Detection and Transulate in
Speech AUTHOR : Ashutosh Porwal, Ashish Oswal,
Nihal Mehta, probal Das
YEAR : 2017

Communication is a fundamental form of human interaction, but sometimes it becomes inconvenient, problematic and expensive for deaf-mute people to communicate with non ASL speakers. This paper aims to bridge the communication gap between people with inability to speak and Non-ASL speakers to communicate conveniently. In the current work, we developed a smart glove which detects gestures using flex sensors and accelerometer/gyro-meter to detect the motion of hand in space. The experimental results implies that system is accurate and cost effective. The gestures are then mapped to a database of supervised data using KNN algorithm to recognize English alphabets, numbers and basic sentence.

TITLE : Image Processing Based Speaking System for Mute People Using Hand

AUTHOR : Koli P.B, Chaudhari Ashwini, Malkar Sonam, Pawale Kavita & Tayde Amrapali

YEAR : 2011

This paper presents a sign to speech converter for dumb people.[1] In the present world it is very difficult for the dumb people to talk with the ordinary people. So it becomes impossible for them to communicate with the ordinary people unless and until ordinary people like us learn the sign language for the purpose of communication. The sign language of dumb is quite difficult to learn and it is not possible for everybody to learn that language. So every person cannot come and share their thoughts with these physically impaired people. So here is a system which would enable the dumb people to communicate with each and every one.[2] In this system a webcam is placed in front of the physically impaired person. The physically impaired person would put his finger in front of the web camera and the webcam will capture the hand gesture and perform image processing using principle component analysis algorithm (PCA).[3] The co-ordinates captured will be mapped with the one previously stored and accordingly exact picture from the database will be identified. Continuing in this way physically impaired person will be able to go through the entire sentence that he wants to communicate. Later on this sentence will be translated into speech so that it would be audible to everyone.

TITLE : Image Processing Based Language Converter for Deaf and Dumb

AUTHOR : Koli P.B, Chaudhari Ashwini, Malkar Sonam, Pawale Kavita & Tayde Amrapali

YEAR : 2011

One of the most popular handicaps is the deaf and dumb type, which prevent person from listening and talking. The number of deaf and dumb in the world continuously increasing and they are introverted closed society. Therefore, Deaf-Dumb people do not have normal opportunities for learning. Uneducated Deaf-Dumb people face serious problem in communication with normal people in their society. It is notable, however, that most available application focus only on learning or recognition of sign language. In this paper, we introduce an integrated android application to blend uneducated Deaf-Dumb people within society, and help them to communicate with normal people. The introduced application proposes an easy translator in keyboard form that can translate any word from sign language to Arabic or English language and vice versa. This application also contains most daily words for teaching deaf and dumb kids in attractive way (colors, pictures, animations, quiz ...etc). Moreover, it introduces some games that help them to communicate and entertain.

TITLE : The Real time Indian Sign Language Recognition System to aid Deaf-Dumb People

AUTHOR : Subha Rajam, Balakrishna Ganesh

YEAR : 2011

The Sign Language is a method of communication for deaf - dumb people. This paper proposes a method that provides a basis for the development of Sign Language Recognition system for one of the south Indian languages. In the proposed method, a set of 32 signs, each representing the binary 'UP' & 'DOWN' positions of the five fingers is defined. The method has been developed with respect to single user both in training and testing phase. The static images have been pre-processed using feature point extraction method and are trained with 10 numbers of images for each sign. The images are converted into text by identifying the finger tip position of static images using image processing techniques. The proposed method is able to identify the images of the signer which are captured dynamically during testing phase. The results with test images are presented, which show that the proposed Sign Language Recognition System is able to recognize images with 98.125% accuracy when trained with 320 images and tested with 160 images.

TITLE : Image Processing based on Deep Neural Networks for Detecting Quality Problems in Paper Bag Production

AUTHOR : Anna Syberfeldt and Fredric Vuolatera

YEAR : 2021

The use of deep neural networks to perform automatic quality inspections based on image processing to eliminate the current manual inspection. Manufacturers must identify quality issues in production and prevent defective products from being delivered to customers. They investigate deep neural network was implemented in a real-world industrial case study, and its ability to detect quality problems was evaluated through the use of deep neural networks to perform automatic quality inspections based on image processing to eliminate the current manual inspection and analysis. Their results show that the network has an accuracy of 94.5%, which is considered good in comparison to the 70–80% accuracy of a deep neural network implemented in a real-world industrial case study, and its ability to detect quality problems was evaluated, and trained human inspector to analyzed. Future work could focus on improving the solution so that it can assess not only the geometry of bags but also faults in print, coloring, and other purely aesthetic defects that are important to customers even though such flaws do not affect the function of the bag. The personnel at the company did indicate that issues with print and color are somewhat predictable, often happening when refilling printing materials or switching between product variants. Although it might not be critical to automatically detect aesthetic defects, doing so would reduce the burden on the operators in the line. It is thus

