TITLE: AI Software to communicate with Deaf and mute in Real Time

AUTHOR: Jenso Peter

YEAR: 2019

This project aims to aid the deaf-mute by creation of a new system that helps convert sign language to text and speech for easier communication with audience. The system consists of a gesture recognizer hand-glove which converts gestures into electrical signalsusing flex sensors. These electrical signals are then processed using an Arduino microcontroller and a Python-based backend for text-to-speech conversion. The glove includes two modes of operation – phrase fetch mode and letter fetch mode. The phrase fetch mode speaks out words at once, while the letter fetch mode speaks out individual letters. This project forms a base infrastructure which can later be augmented with addition of different Sign Languages and integrating with other hearing impaired aid systems.

TITLE: Simulation of a BCISystem Based on the Control of a Robotic Hand by Using Eye-blinksStrength

AUTHOR: O. A. Ruşanu, L. Cristea and M. C. Luculescu

YEAR: 2019

Many assistive technologies implemented to help the disabled people. The purpose of this research is to design and implement a new mechanism for disabled people which can be used as a helping hand. Generally, disabled people depend onothers to live their lives. Our target is to make a robotic system that has different characteristics to help the physically challenged people. The robot will be able to move in any direction. An open-source Android application is used to control the robot via Bluetooth. The robot responds to move commands in the forward, backward, left, and right directions. A disabled person, especially those who cannot walk will be able to send this robot any where. The project also implements a robotic arm with pick and place capability. It is able to pick any object and carry it and place it to the required position. The robotic arm is designed such that it can be controlled by a number of different mechanisms, namely a smart phone as the remote control, or human voice command or an RF controller. Disabled people can use any one of these methods according to his or her comfort. The robot al souses an IP camera for video observation as well as video communication with others.

TITLE: On certain integrals of LipschitzHankel type involving products of Bessel functions.

AUTHOR: G. Eason, B. Noble.

YEAR: 2013.

The overall purpose of the research is to locate rest rooms and keep hygiene in consideration for those who are specially- abled. The app will be designed with the assistance of Artificial Intelligence and Machine Learning, providing navigation, every step of the way which will be susceptible to use and comprehend. People with having disabilities implies that having fundamental difficulty accomplishing aspects. They are of numerous types like physical disability in nature, due to amputation inability to walk, sensory like blindness, hearing impairment with the assistance of this app, this gap can be filled. The problems faced by specially abled people have been taken into consideration creating a balanced platform for them. Utilizing the necessary tools and functions required for enabling them to locate and understand where the restrooms are, keeping in mind hygiene and safety factors.

TITLE: A Face based Real Time Communication for speech disabled people.

AUTHOR: Aditya Sharma 1, Aditya Vats 2 , Shiv Shankar Dash 3 and Surinder Kaur.

YEAR: 2020.

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 ofa website.

TITLE: Artificial Intelligence Enabled Virtual Sixth Sense Application for the Disabled.

AUTHOR: Muhammed Usman Tariq.

YEAR: 2020

The main purpose of this research is to enhance the communication of the disabled community. The authors of this chapter propose an enhanced interpersonal-human interaction for people with special needs, especially those with physical and communication disabilities. The proposed model comprises of automated real time behavior monitoring, designed and implemented with the ubiquitous and affordable concept in mind to suit the underprivileged. In this chapter, the authors present the prototype which encapsulates an automated facial expression recognition system for monitoring the disabled, equipped with a feature to send Short Messaging System (SMS) for notification purposes. The authors adapted the Viola-Jones face detection algorithm at the face detection stage and implemented template matching technique for the expression classification and recognition stage. They tested their model with a few users and achieved satisfactory results.