TOPIC : REAL TIME COMMUNICATION FOR SPECIALLY ABLED PERSON

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

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

YEAR : 2020

ABSTRACT :

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 toolkit and different pre-trained models, which are both available offline as well as online.

TITLE : Artificial Intelligence Enhances Accessibility for people with disabilities

AUTHORS : Bayan Mohammed Saleh1, Reem Ibrahim Al-Beshr2, Muhammad Usman Tariq3

YEAR : 2020

ABSTRACT :

Communication plays a significant role in making the world a better

place.Communication creates bonding and relations among the people, whether persona, social, or political views. Most people communicate efficiently without any issues, but

many cannot due to disability. They cannot hear or speak, which makes Earth a problematic

place to live for them. Even simple basic tasks become difficult for them. Disability is an

emotive human condition. It limits the individual to a certain level of performance. Being

deaf and dumb pushes the subject to oblivion, highly introverted. In a world of inequality, this society needs empowerment. Harnessing technology to improve their welfare is

necessary. In a tech era, no one should be limited due to his or her inability. The application

of technology should create a platform or a world of equality despite the natural state of

humans.On the other hand, technology is the most innovative thing on

Earth for every time the clock ticks, researchers, software engineers, programmers, and

information technology specialists are always coming up with bright ideas to provide

convenience to everyone. This paper shows how artificial intelligence is being used to help

people who are unable to do what most people do in their everyday lives. Aligned with

communication, D-talk is a system that allows people who are unable to talk and hear be

fully understood and for them to learn their language easier and also for the people that

would interact and communicate with them. This system provides detailed hand gestures

that show the interpretation at the bottom so that everyone can understand them. This

research allows the readers to learn the system and what it can do to people who are

struggling with what they are not capable of and will provide the technical terms on how the

system works.

TITLE : Sign Language Recognition System for people with disabilities using AI

AUTHORS : Dalia Nashat1, Abeer Shoker1, Fowzyah Al-Swat2 and Reem AlEbailan2

YEAR : 2014

ABSTRACT :

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 DeafDumb 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 : Artificial Intelligence and Communicatin Technology Accessibility

AUTHORS : Majzoob Kamal Aldein Omer, Mohmed Sirelkhtem Adrees, Osama E. Sheta

YEAR : 2015

ABSTRACT :

The study aims to apply the strategy to help deaf students and dumb in academic achievement by using mobile learning technology application , This sample of the students have a high potential for the use of mobile applications and has a capacity of great learning via mobile. Smart mobile phones have the ability to create a good educational content of images, shapes, graphics and illustrations appropriate signs to the Deaf and Dumb students and the production of educational content suitable for individual differences in education between them and meets their needs mental and their interests that a re different from ordinary students in Education. The paper focuses on the educational content of the component images, graphs , and illustrations appropriate signs to the Deaf and Dumb students because it is not easy to understand by a normal li stener on the opposite and to make things worse. In fact the techn ology is used to achieve the interaction between deaf and dump chi ldren with others.

TITLE : Artificial Intelligence Enabled Virtual Sixth Sense Application For the Disabled

AUTHOR : Muhammed Usman Tariq

YEAR : 2020

ABSTRACT :

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 behaviour 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. The enhanced real time behaviour monitoring system is an assistive tool to improve the quality of life for the disabled by assisting them anytime and anywhere when needed. They can do their own tasks more independently without constantly being monitored physically or accompanied by their care takers, teachers, or even parents. The rest of this chapter is organized as follows. The background of the facial expression recognition system is reviewed in Section 2. Section 3 is the description and explanations of the conceptual model of facial expression recognition. Evaluation of the proposed system is in Section 4. Results and findings on the testing are laid out in Section 5, and the final section concludes the chapter.

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

AUTHOR : Jenso Peter

YEAR : 2019

ABSTRACT :

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 signals using 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.