Deliverable

Team id: PNT2022TMID50453

Paper 1: Caring of Disabilities Deaf Mute Patient with Talking Devices Application Based on Mobile

Publication year: 2018

Author: Nian Afrian Nuari

Journal Name: International Journal of Engineering & Technology

The role of nurses in children with disable is to help in communicating so they can interact with others. Deaf mute requires health care and information on health education. This research focused on an application that facilitates Disabilities Deaf Mute Patient to communicate with other by using a mobile phone. This application based on mobile user by typing letters and it will automatically change into the form of voice (text to speech) that have been arranged into a word so can understood by the other person who use the application. This research helps nurses to communicate by using talking tools application. Development of systems using mobile technology by using Java programming language and talking tool. Results of this study was an application of learning system that helps teachers to communicate with their mute children. The application of mute children will be greatly helped in communicating with the interlocutor.

Paper 2: A Novel Technique for Speech Recognition and Visualization Based Mobile Application to Support Two-Way Communication between Deaf-Mute and Normal Peoples

Publication year: 2018

Author: Kanwal Yousaf, Zahid Mehmood,Tansila Saba

Journal Name: Wireless Communications and Mobile Computing

Mobile technology is very fast growing and incredible, yet there are not much technology development and improvement for Deaf-mute peoples. Existing mobile applications use sign language as the only option for communication with them. Before our article, no such application (app) that uses the disrupted speech of Deaf-mutes for the purpose of social connectivity exists in the mobile market. The proposed application, named as vocalizer to mute (V2M), uses automatic speech recognition (ASR) methodology to recognize the speech of Deaf-mute and convert it into a recognizable form of speech for a normal person. In this work mel frequency cepstral coefficients (MFCC) based features are extracted for each training and testing sample of Deaf-mute speech. The hidden Markov model toolkit (HTK) is used for the process of speech recognition. The application is also integrated with a 3D avatar for providing visualization support. The avatar is responsible for performing the sign language on behalf of a person with no awareness of Deaf-mute culture. The prototype application was piloted in social welfare institute for Deaf-mute children. Participants were

15 children aged between 7 and 13 years. The experimental results show the accuracy of the proposed application as 97.9%. The quantitative and qualitative analysis of results also revealed that face-to-face socialization of Deaf-mute is improved by the intervention of mobile technology. The participants also suggested that the proposed mobile application can act as a voice for them and they can socialize with friends and family by using this app.

Paper 3: Design and implementation of deaf and mute people interaction system

Publication year: 2017

Author: Fahida Noori Hummadi

Journal Name : International Conference on Engineering and Technology (ICET)

The problems faced by the deaf and dumb people at the present time and the difficulties of their communication with normal persons sparked our interest and led us to try to find a solution to their difficulties and to minimize them as much as possible. Because they represent a significant part of society and they need to deliver their ideas in the simplest way by simple devices. So our project aims to bridge this gap by enabling communication between dumb\deaf people on the one hand and normal people on other hand by introducing an inexpensive electronic device that translates the fingers presses into the text and speech.
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Paper 4: Bilateral Communication Device for Deaf-Mute and Normal People

Publication year: 2020

Author: Raven Carlos Tabiongan

Journal Name : Advances in Science, Technology and Engineering Systems

Communication is a bilateral process and being understood by the person you are talking to is a must. Without the ability to talk nor hear, a person would endure such handicap. Given that hearing and speech are missing, many have ventured to open new communication methods for them through sign language. This bilateral communication device can be utilized by both non-sign language users and Deaf-mute together in a single system. Shaped as a box (8in x 8in) with two multi-touch capable displays on both ends, the contraption has several microcontrollers and touch boards within. The latter has the technology of twelve interactive capacity touch and proximity electrode pads that react when tapped, producing quick response phrases audible via speaker or earphone. These touch boards are equipped with an MP3 decoder, MIDI synthesizer, 3.5mm audio jack and a 128MB microSD card. The touch screen modules mounted on top of the microcontrollers transfer data to and from each other in real-time via receiver-transmitter (RX-TX) full duplex UART serial communication protocol. The device is lightweight weighing at about 3 lbs. The prototype device was piloted in an academic institution of special education for deaf-mute students. Participants were 75 normal and 75 Deaf-mute people aged between 18 and 30 years. The experimental results show the overall rating of the device is 90.6%. The device is designed to promote the face-to-face socialization

aspect of the Deaf-mute users to the normal users and vice versa. Several third-party applications were utilized to validate the accuracy and reliability of the device thru metrics of consistency, timing and delay, data transmission, touch response, and screen refresh rates.

Paper 5: Deaf-Mute Communication Interpreter

Communications between deaf-mute and a normal person have always been a challenging task. The project aims to facilitate people by means of a glove based deaf-mute communication interpreter system. The glove is internally equipped with five flex sensors, tactile sensors and accelerometer. For each specific gesture, the flex sensor produces a proportional change in resistance and accelerometer measures the orientation of hand. The processing of these hand gestures is in Arduino. The glove includes two modes of operation – training mode to benefit every user and an operational mode. The concatenation of letters to form words is also done in Arduino. In addition, the system also includes a text to speech conversion (TTS) block which translates Communications between deaf-mute and a normal person have always been a challenging task. The project aims to facilitate people by means of a glove based deaf-mute communication interpreter system. The glove is internally equipped with five flex sensors, tactile sensors and accelerometer. For each specific gesture, the flex sensor produces a proportional change in resistance and accelerometer measures the orientation of hand. The processing of these hand gestures is in Arduino. The glove includes two modes of operation – training mode to benefit every user and an operational mode. The concatenation of letters to form words is also done in Arduino. In addition, the system also includes a text to speech conversion (TTS) block which translates conditions. Recognized gesture is used to convert sign into text and audio output for users.