Mind Hand: A Comprehensive Solution Supports Two-Way Communication for the Deaf Mute

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Over 70 million deaf mute have suffered from many difficulties in various aspects of their lives due to the limitation in their ability to communicate with the others. The deaf mute use the standardized sign languages in order to communicate with each other. However, there are not many people in the community who know sign language to sympathize with them. Therefore, our idea addressing the problem “How to wipe away the barriers in communication and improve the quality of life for them?” is flashed. MIND HAND is a product consisting of an application on Android smartphone and a wrist device. MIND HAND app has the ability to convert two modes of communication. The first conversion from sign language to speech is performed through image processing technology. The second conversion from speech to text is based on Google API Speech To Text. After converted from speech to text, the data will be sent to MIND HAND device via Bluetooth then displayed on the screen. Besides, MIND HAND device is also designed to perform extensive functions. It is capable of not only identifying but also classifying some audio signal sources. Therefore, it is able to provide appropriate instructions and warnings to help users become more active in personal or family care. Simultaneously, MIND HAND device was integrated with a real-time clock to increase utility for users. In conclusion, our project’s work succeeded in building bridges for easier communication between the deaf mute and the community, helping them improve the quality of their lives. Keywords: deaf mute, image processing, communication, sign language, audio signal sources.

Awards Won:
Association for the Advancement of Artificial Intelligence: Honorable Mention