

Smart Interaction System for Blind and Dumb

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Abstract: *Advancements in technology have paved the way for innovative solutions to improve the quality of life for individuals with disabilities. Among them, the development of smart interaction systems specifically designed for individuals with visual and speech impairments has gained significant attention. This abstract introduces a novel smart interaction system that aims to empower and enhance the communication capabilities of individuals who are blind and dumb. The proposed system utilizes a combination of cutting-edge technologies, including computer vision, natural language processing, and machine learning algorithms. The system employs computer vision techniques to interpret visual information, such as facial expressions and gestures, allowing for effective communication between the user and the system. Additionally, speech recognition algorithms are employed to convert spoken language into text, enabling the system to understand and respond to user commands. To ensure seamless interaction, the system incorporates a user-friendly interface accessible via tactile or auditory cues, which provides a tactile feedback mechanism for individuals with visual impairments and an auditory feedback mechanism for those with speech impairments. Moreover, the system supports multi-modal communication by employing text-to-speech synthesis to convert textual responses into audible speech, enabling individuals with visual impairments to receive information audibly. To evaluate the system's performance, extensive user testing and feedback sessions were conducted with individuals from the target user group. The results demonstrated that the smart interaction system significantly enhanced the communication capabilities of blind and dumb individuals, allowing them to independently interact with the environment, access information, and communicate with others.*

Keywords: Flex Sensor, LCD, APR Speech Kit, Speaker, Arduino Uno

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