

Transcribe Glasses

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Abstract—This article describes the design of converting speech to sign for deaf and hard of hearing people. The device is low cost, uses low power and can operate completely offline. Speech recognition is implemented through the open source API Pocketsphinx library. In this study, we present a language-based model that evaluates the similarity between speech recognition and pre-speech to determine outcomes.

Keywords—*component, formatting, style, styling, insert (key words)*

I. INTRODUCTION (HEADING 1)

GLASSES WITH THE ABILITY TO CONVERT SPEECH TO TEXT FOR THE HEARING IMPAIRED REPRESENT AN INNOVATION IN ASSISTIVE TECHNOLOGY. THESE GLASSES USE ADVANCED SPEECH RECOGNITION TECHNOLOGY TO INSTANTLY CONVERT SPOKEN WORDS INTO TEXT, ALLOWING DEAF PEOPLE TO INSTANTLY ACCESS INFORMATION THROUGH VISUAL VISION. BY INTEGRATING THESE TECHNOLOGIES INTO WEARABLE GLASSES, COMMUNICATION BARRIERS ARE REDUCED AND GREATER PARTICIPATION AND ACCESSIBILITY IS ACHIEVED IN MANY ASPECTS FOR THE HEARING IMPAIRED.EASE OF USE

It is estimated that more than 430 million people worldwide, including 34 million children, suffer from hearing loss, and 2.5 billion people are expected to be at risk of hearing loss by 2050. On the other hand, students who are deaf and hard of hearing (HID) often progress academically and require additional educational support, but if education is not sufficient to support HID, student performance in school can be negatively impacted.

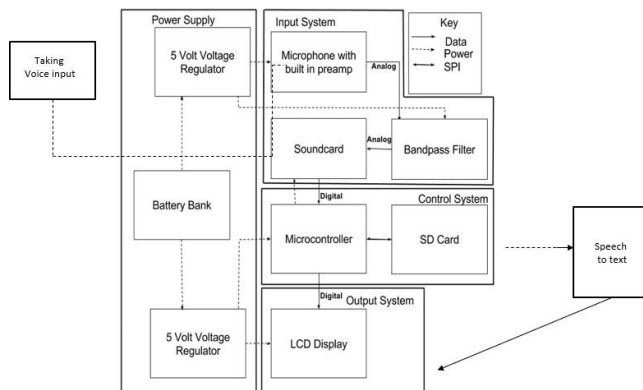
OBJECTIVE OF PROJECT

- **Organic light-emitting diode (OLED)** : technology represents a significant advancement in display technology and offers many advantages over traditional liquid crystal displays (LCDs) and light-emitting diodes (LEDs). OLED displays consist of a thin

organic film sandwiched between two electrodes that emit light in response to an electric current. Unlike LCD, which requires a backlight, OLED is self-luminous. This means that each pixel emits its own light, delivering deeper blacks, higher contrast ratios, and wider viewing angles.

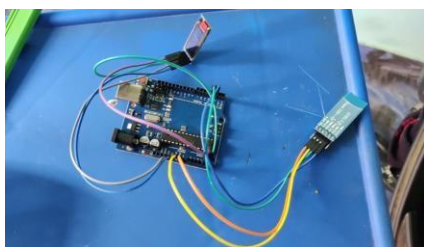
- **Arduino Uno** : Arduino Uno is a microcontroller board based on the ATmega328P microcontroller. Developed by Arduino LLC, it is designed for both beginners and experts and provides a versatile platform for creating a wide range of electronic projects.
- **Automatic speech recognition (ASR)** :technology has advanced significantly in recent years, allowing computers to more accurately convert speech into text. This technology, combined with the computing power of the Raspberry Pi, creates a cost-effective and portable real-time speech-to-text solution
- A real-time operating system (RTOS) is an operating system designed to manage and execute tasks with specific timing requirements, prioritizing tasks based on factors such as fairness and throughput. execution. Guaranteed. Number equations consecutively. Equation numbers, within parentheses, are to position

2. SYSTEM DEVELOPMENT



As mentioned earlier, the main goal of the project is to prove the concept. Smart glasses as a multitasking tool for people with low vision. The glasses design described in the literature review is used. The basic idea of this design is to use Raspberry Pi to power all models. Various modes are provided, and users can select and run the desired mode. In this case, when you enter the GPIO port of the Raspberry Pi, the switch will look like this: The main Raspberry Pi program starts as shown. Depending on the selected input data, the Simulink model interacts with the user. Provide feedback or instructions through audio output and provide the final result.

- 1- A model has been implemented to detect text with a red border. That is why Materials must be placed in specially designed red frames.
- 2- The data is assumed to have explicit content that the model can provide.
Good quality output.
- 3- Material orientation is important. The model will try to help in identification of only one voice at a time



3. TECHNOLOGY

- **OLED**
- **Lithium Batter**

- **Transparent glass:**
- **Arduino**

An intergrade circuit for OLED displays used to display typed text. This is the default option.

Communication protocol between Raspberry Pi and display. The resolution of the OLED display and is best suited for Raspberry-Pi Zero compatible development boards.



4. CONCLUSION

The Transferred Glass Project presents innovative solutions designed to make improvements.

Achieving communication for the hearing impaired through the integration of cutting-edge technologies. system User settings.

Seamlessly convert speech to text and display real-time captions on wearable glasses. Promotes effective communication. Throughout the design and development process, Several considerations were taken to ensure the system's ease of use, accuracy and adaptability.

The proposed use case diagram shows the various interactions between actors and use cases. Demonstrates the extensive capabilities of the Transcribed Glass system. users, external devices, and Cloud services play a key role in system functionality and provide a user-centric, connected system. experience.

ACKNOWLEDGMENT (*Heading 5*)

This paper provided valuable information about the design considerations and technical challenges associated with spectacle reading technology. The results of this paper helped us understand users' needs and preferences for decoding glasses in real-world environments. We appreciate the methodology and experimental approach described in this paper, which guided the implementation and testing process. The theoretical framework presented in this article contributed to the conceptualization and development of our project goals. The discussion and conclusions drawn from this article stimulated critical thinking and further exploration of related topics within our project research.

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