

CONCLUSION: A SMARTREADER FOR VISUALLY IMPAIRED DEVICES

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INTRODUCTION-Machine replication of human functions like reading is an ancient dream. However, over the last five decades, machine reading has grown from a dream to reality. Visually impaired people report numerous difficulties with accessing printed text using existing technology, including problems with alignment, focus, accuracy, mobility and efficiency. We present a smart device that assists the visually impaired and travellers which effectively and efficiently reads paper-printed text. The proposed project uses the methodology of a camera based assistive device that can be used by people to read Text document. The framework is on implementing image capturing technique in an embedded system based on Raspberry Pi board. The design is motivated by preliminary studies with visually impaired

people, and it is small-scale and mobile, which enables a more manageable operation with little setup. In this project we have proposed a text read out system for the travellers and visually challenged. The proposed fully integrated system has a camera as an input device to feed the printed text document for digitization. Speech is probably the most efficient medium for communication between humans. To extract the text from image we use optical character recognition technique (OCR). Optical character recognition has become one of the most successful applications of technology in the field of pattern recognition and artificial intelligence. Optical character Recognition (OCR) is a process that converts scanned or printed text images, handwritten text into editable text for further processing. Speech synthesis is the artificial

synthesis of human speech. A Text-To-Speech (TTS) synthesizer is a computer-based system that should be able to read any text aloud, whether it was directly introduced in the computer by an operator or scanned and submitted to an Optical Character Recognition (OCR).

ASPECTS- Human communication today is mainly via speech and text. To access information in a text, a person needs to have vision. However those who are deprived of vision can gather information using their hearing capability. The proposed method is a camera based assistive text reading to help blind person and the travellers in reading the text present on the text labels, printed notes and products in their own respective languages. It combines the concept of Optical Character Recognition (OCR), text to Speech Synthesizer (TTS) and translator in Raspberry pi. Optical character recognition (OCR) is the identification of printed characters using photoelectric devices and computer software. It converts images of typed, handwritten or printed text into machine encoded text from scanned document or from subtitle text superimposed on an image. Text-to-Speech conversion is a method that scans and reads any language letters and numbers that are in the image using OCR technique and then translates it into any desired language and at last it gives audio output of the translated text. The audio output is heard through the raspberry pi's audio jack using speakers .

CONCLUSION-A survey of existing smart reading assistance for blind and visually impaired is carried out. The existing systems have many drawbacks. Here we propose a new idea where the system provides an autonomous page turning mechanism and interactive dictionary querying feature, ultimately giving a feeling of comfort for BVI. Once developed it can act as a perfect

personal device for the user. The system even finds small applications in Schools, Libraries etc.

In this paper, the development of Book Reader for Blind People has been discussed. The Book Reader is developed using an IoT device; Raspberry Pi, which is low on power consumption, and being small in size that contributes to a high portability device for blind people. The product also can be realized with the help of IoT supporting network protocol such as WiFi and 4G. By using this book reader, most of the blind and visually impaired people can enjoy various books just as much as ordinary people, without being concerned with the Braille system. Book Reader will read aloud a book without the need for touch like Braille. According to the survey made through the reference papers, the smart reader for blind produces a positive outcome when applied in practical world. Since the OpenCV platform is used for text detection, it is very handy and convenient to use compared to the PC platform. This system is useful for visually impaired persons to access information which is in the form of documents, texts or printed forms. The future implementation may include accuracy and fulfil the limitations of existing systems. In this analysis, we've got represented a epitome system to scan written text and handheld objects for helping the blind individuals. This project is based on hardware and software implementation. Also it is made on various platform like python programming optical character recognition (OCR) & text-to-speech (TTS) conversion which are run on Raspberry Pi 3B model. We have implemented an image to speech conversion technique using raspberry pi. The simulation results have been successfully verified and the hardware output has been tested using different samples. Our algorithm successfully processes the image and reads it out clearly. This is an economical as well as efficient device for the visually impaired people. We have applied our algorithm on many images and found

that it successfully does its conversion. The device is compact and helpful to the society.

Applications-

- Web applications
- Email readings
- Mobile applications for intelligent speaking system
- Querying features This system finds its interesting applications in libraries, auditorium, offices where instructions and notices are to be read.

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