The International Journal Of Engineering And Science (IJES)
ISSN (e): 2319 – 1813 ISSN (p): 2319 – 1805
Pages || 134-137 || March - 2015 ||

Texture Assistive Image Reading & Voice Recognized System for Visually Impaired Pedestrians

P.Sangeetha priya[1], (M.E AE), V.Sivaranjini[2], M.E.,
[1]*Student/Dept of ECE, Anna University Chennai*, [2]*Assistant Professor/Dept of ECE, Anna University Chennai*
Jayam College of Engineering and Technology, Dharmapuri DT, India

----------**ABSTRACT**----------
A camera-based assistive text reading and voice reorganization framework to help blind persons read text labels and product packaging from hand-held objects in their daily lives. To isolate the object from cluttered backgrounds or other surrounding objects in the camera view, we first propose an efficient and effective motion based method to define a region of interest (ROI) in the video by asking the user to shake the object. In this system, we add speech recognition with existing method. The microphone fixed in blind peoples or visually impaired people body. The camera helps us to identify the products to the people and people wants select the product just they say "OK" that product will entered in billing list.

I. INTRODUCTION

Of the 314 million visually impaired people worldwide, 45 million are blind. Even in a developed country like the U.S., the 2008 National Health Interview Survey reported that an estimated 25.2 million adult Americans (over 8%) are blind or visually impaired. This number is increasing rapidly as the baby boomer generation ages. Recent developments in computer vision, digital cameras, and portable computers make it feasible to assist these individuals by developing camera-based products that combine computer vision technology with other existing commercial products such optical character recognition (OCR) systems.

Reading is obviously essential in today's society. Printed text is everywhere in the form of reports, receipts, bank statements, restaurant menus, classroom handouts, product packages**,** instructions on medicine bottles, etc. And while optical aids, video magnifiers, and screen readers can help blind users and those with low vision to access documents, there are few devices that can provide good access to common hand-held objects such as product packages, and objects printed with text such as prescription medication bottles.

II. PREVIOUS METHOD

In existing system, a camera-based assistive text reading framework to help blind persons read text labels and product packaging from hand-held objects in their daily lives. To isolate the object from cluttered backgrounds or other surrounding objects in the camera view, we first propose an efficient and effective motion based method to define a region of interest (ROI) in the video by asking the user to shake the object.

This method extracts moving object region by a mixture-of-Gaussians-based background subtraction method. In the extracted ROI, text localization and recognition are conducted to acquire text information.

III. PROPOSED METHOD

The new architecture will have microphone fixed in blind peoples or visually impaired people body. The output of the MIC connected through MATLAB software in PC through voice interface unit. The camera helps us to identify the products to the people and people wants select the product just they say "OK**"** that product will entered in billing list**.**

A.Overall Architecture

The overall functional architecture is depicted in Fig. 1. In this system consists of video and audio reorganization process to detect the product identification and billing system for blind persons. The camera is fixed on forehead of the people and it can be used to capture the image of the object.

The captured image is transmitted through PC through standard universal port. The name of the product is observed from the captured image by using MATLAB coding. The product name is announced in the form of audio to person through speaker from data processing unit.

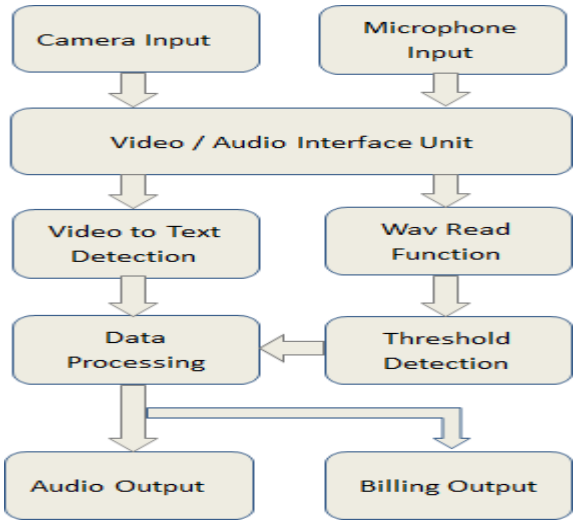


Fig. 1.Functional architecture of proposed method.

The MIC can be used for blind people to select the product by using their own voice. The micro phone is used to convert the audio signal into electrical signal and also convert the wav read function through audio interface unit.

The voice system can be used to recognize by using threshold detection method and it applied to the input of data processing unit. The billed output can be taken from data processing unit.

The product name is announced in the form of audio to person through speaker from data processing unit. The MIC can be used for blind people to select the product by using their own voice. The micro phone is used to convert the audio signal into electrical signal and also convert the wav read function through audio interface unit.

The voice system can be used to recognize by using threshold detection method and it applied to the input of data processing unit. The billed output can be taken from data processing unit.

C.Framework and Algorithm

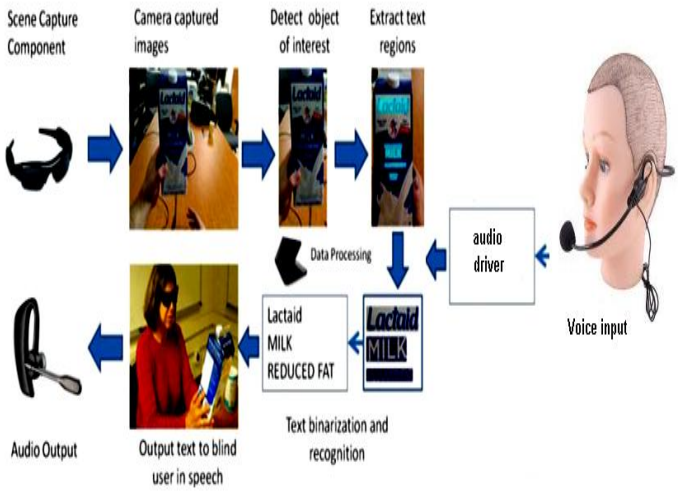


Fig. 2. Framework and Algorithm.

The framework and algorithm shown in Fig. 2.

A frame sequence *V* is captured by a camera worn by blind users, containing their hand-held objects and cluttered background. To extract text information from the objects, motion based object detection is first applied to determine the user's object of interest *S* by shaking the object while recording video.

Where *Vi* denotes the *i*th frame in the captured sequence, |*V* | denotes the number of frames, *B* denotes the estimated background from motion-based object detection, and *R* represents the calculated foreground object at each frame. The object of interest is localized by the average of foreground masks.

In this system consists of video and audio reorganization process to detect the product identification and billing system for blind persons. The camera is fixed on forehead of the people and it can be used to capture the image of the object.

D.Automatic Text Extraction

We design a learning-based algorithm for automatic localization of text regions in image. In order to handle complex backgrounds, we propose two novel feature maps to extracts text features based on stroke orientations and edge distributions, respectively.

Here, stroke is defined as a uniform region with bounded width and significant extent. These feature maps are combined to build an Ada-boost based text classifier. The automatic text extraction flow has shown below in the figure3.

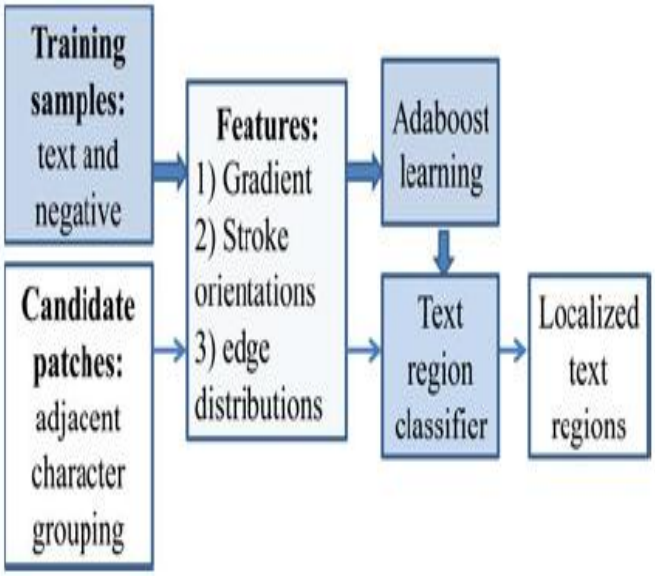


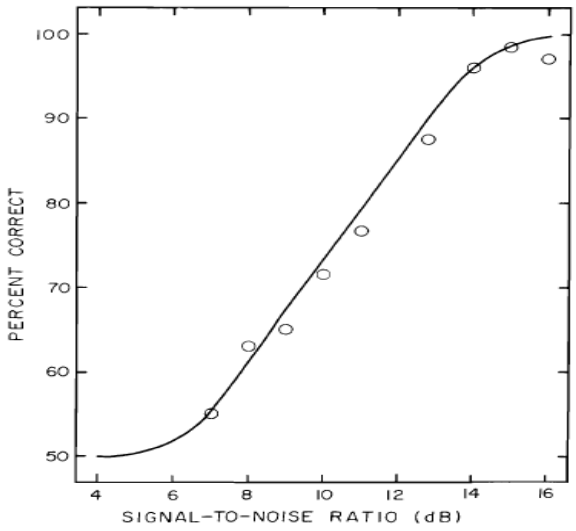
Fig. 4.Functional architecture of proposed method

E.Threshold as a measure of measurement

Threshold and the Psychometric Function The term *threshold* can be defined in several ways. In the strictest sense, a threshold is the value of a stimulus dimension.

Usually intensity, above which the stimulus always elicits a response and below which there is never a response. Because *always* and *never* are difficult to establish, it is necessary to redefine threshold in terms of measurable probabilities.

.



In psychoacoustic experiments, for example, threshold often is defined as the stimulus level resulting in some proportion of correct responses. Viewed in this way, a threshold is simply a point on a *psychometric function.*

A psychometric function is a graph relating a measure of performance to a stimulus dimension.

IV. CONCLUSION

In the future, the focus can be on reducing the noise or background disturbance that is introduced in the speech samples automatically while recording. Modified discrete cosine transform (MDCT) will be future compression algorithm, whether standalone or combination of speech and still or moving images.

The various filtering techniques can be applied in order to reduce disturbance. By using these various filter techniques speech recognition will be more accurate and fast.

ACKNOWLEDGMENT

I would like to take this opportunity to express my sincere gratitude to all my professors who have guided, inspired and motivated me for my project work. It gives me immense pleasure to acknowledge their co-operation.

REFERENCE

[1] Chucai Yi, Student Member, IEEE, Yingli Tian, Senior Member, IEEE, and Aries Arditi.
[2] Aseem Saxena, Amit Kumar Sinha, Shashank Chakrawarti, Surabhi Charu Suresh Gyan Vihar University, Jaipur, Rajasthan, India.
[3] Ms. Rupali S Chavan*1, Dr. Ganesh S. Sable2 *1, 2 Department of electronics engineering, avitribai Phule Women's Engineering College, Aurangabad - 431005, Maharashtra, India..
[4] Ms. Rupali S Chavan*1, Dr. Ganesh S. Sable2 *1, 2 Department of electronics engineering, avitribai Phule Women's Engineering College, Aurangabad - 431005, Maharashtra, India.
[5] Deepak, Vikas Mittal Department of Electronics & Communication Engineering, Maharishi Markandeshwar University, Mullana (Ambala), INDIA.
[6] Prof. Ch.Srinivasa Kumar Prof. and Head of department. Electronics and communication Nalanda Institute of technology Guntur.
[7] Prabhakar V. Mhadse1, Amol C.Wani Electronics & Telecomm Engineering Department, SSBT's COET, Bambhori, Maharashtra, India