SMART SHOPPING FACILITATOR FOR VISUALLY IMPAIRED USING ARTIFICIAL INTELLIGENCE

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ABSTRACT

Nowadays visual impairment is the state of a person in which one has to depend on others for his or her personal needs. This challenge is evolved to make the lifestyles of blind humans easy because he or she can't see anything in the world. Thus far numerous techniques had been proposed to enhance the existence style of visually impaired and blind humans. Nonetheless buying products within the e-buying application without others support is tricky one for them. For this reason this software honestly benefits blind and visually impaired humans and for that reason making their work of identifying products smooth and this system that provides the easy way for them to choose and purchase their products inside the supermarket software.

The audio instructions will help them in the supermarket application based on the actual time conditions. To make the supermarket in a wiser way the billing device is computerized. Hence it eliminates the existing queuing machine inside the grocery store. The ultimate intention of this machine is to take away others assist for visually impaired people in purchasing and offer them a handy and sophisticated surroundings. On imposing this gadget, it allows the blind people shopping, store the consumer's time and promotes business income.

Index Terms*: Artificial Intelligence, Voice Assistance, Shopping Facilitator,Visual impairment peoples, etc.*

I. INTRODUCTION

This challenge is evolved to make the lifestyles of blind humans easy. That is very useful in case of locating out the outline of packaged items to the blind humans and for that reason supporting them in identifying to purchase a product or no longer in particular which are packaged. That is because it becomes very difficult for the blind humans to distinguish among the packaged goods. For this reason this software honestly benefits blind and visually impaired humans and for that reason making their work of identifying products smooth. On this smart global, no one can come to be the day without the use of any form of embedded gadget products. It makes our human lifestyles very smarter and to feel comfy. In international, the super remorse aspect is visible impairment. Primarily based on the records of worldwide fitness business enterprise (WHO) in 2012, 285 million humans are visually challenged in the world. Among them 39 million humans are blind and 246 million having low power vision. Approximately 90% of them are residing in developing international locations. Purchasing is a place where people get their everyday necessities ranging from meals products, fabric- ing, electrical home equipment etc. Occasionally customers have issues regarding the unfinished statistics about the product on sale and waste of pointless time at the billing counters. Continuous improvement is required within the traditional billing gadget to improve the exceptional of shopping enjoy to the customers. Now day's numbers of huge in addition to small purchasing programs has extended throughout the global because of growing public demand spending. On the time of gala's, unique reductions, holidays, and so forth. There may be a huge rush in shopping mall. At present, many supermarkets nonetheless undertake traditional shopping mode and bar code scanning, that's a waste of manpower and cloth resources. Additionally, long time waiting to pay and the tire of pushing shopping cart all make customers go through lots and can motive passenger extent cross down. Therefore, the needs to assist lessen queuing time for customers to check-out and to free human beings from pushing the shopping carts hard had been an pressing trouble to tackle. So right here the paper introduces a gadget to reduce and possibly put off the total ready time of clients and may avoid manpower. Here the device enables to discover the required merchandise from the buying cart. Right here it uses feature extraction and prevent-phrase filtering era to become aware of the product as per your wishes and to determine the exact product lists from available objects as well as the person. The charge and name of each product taken through the man or woman is delivered to the invoice in addition it is displayed at the display screen and is announced the use of speaker. The billing may be achieved the use of assertion techniques.

II. PROBLEM STATEMENT

People who are sighted have the luxury of looking at items and reading the labels on clothing to make decisions about what to purchase. People who are visually impaired can feel the items, but they cannot easily tell the color of the garment, the type of clothing, or the care of the garment. In essence, the fashion industry is criminates against visually impaired people by not making the standard information available to them in a form that they can read. The fashion industry should identify an acceptable way for visually impaired individuals to identify specific characteristics of interest about the clothing they purchase.

III. LITERATURE SURVEY

Xiaodong Yang ,Shuai Yuan , YingLi Tian, **"Assistive Clothing Pattern Recognition for Visually Impaired People"** [1] Choosing garments with complicated patterns and colours is a difficult task for visually impaired individuals. Automatic article of clothing pattern recognition is additionally a difficult analysis downside due to rotation, scaling, illumination, and particularly massive infraclass pattern variations. We've got developed a camera-based image system that acknowledges article of clothing patterns in four class plaid, striped, pattern less, and irregular and identifies eleven articles of clothing colours. The system integrates a camera, a mike, a computer, and a Bluetooth headphone for audio description of article of clothing patterns and colours. A camera mounted upon a try of glasses is employed to capture article of clothing pictures. The article of clothing patterns and colours are described to blind users verbally. This method will be controlled by speech input through mike. To acknowledge article of clothing patterns, we propose a completely unique Run Signature descriptor and a schema to extract applied math properties from ripple sub bands to capture global options of article of clothing patterns.

L. Atzori, A. Iera, and G. Morabito, **"From Smart Objects to Social Objects: The Next Evolutionary Step of the Internet of Things"** [2] Iris recognition verification is one amongst the foremost reliable personal identification strategies in statistics. With the fast development of iris recognition verification, variety of its applications are proposed as yet together with time group action system etc. during this paper, a wireless iris recognition attendance management system is meant and enforced exploitation Dogmans algorithmic program (Dogman, 2003). This method based mostly statistics and wireless technique solves the matter of spurious group action and the hassle of birth the corresponding network. It will create the users attendances a lot of simply and effectively.

Rubi, Chhavi Rana, **"Review on Speech Recognition with Deep Learning Methods"** [3] The most common mode of communication between humans is speech. As this is often this can be often the foremost most well liked manner, humans would like to use speech to act with machines together. That's why; speech recognition has gained numerous recognition. Many approaches for speech recognition exist like Dynamic Time warp (DTW), Hidden mathematician Model (HMM). The main objective of this paper is printed a three stage neural integrated model speech signal sweetening and use the decomposition integrated HMM model for speech feature transformation. For the feature extraction of speech distinct wavelength work on (DWT) has been used that provides a set of feature vectors of speech wave kind. The work has been done on MATLAB and experimental results show that system is during a position to acknowledge words at sufficiently high accuracy.

Vladimir A. Kulyukin, Aliasgar Kutiyanawala, **"Accessible Shopping Systems for Blind and Visually Impaired Individuals: Design Requirements and the State of the Art"** [4] Independent grocery searching is one among the foremost functionally difficult tasks for visually impaired and blind people. Several helpful searching systems are developed to handle the matter of blind grocery searching. During this article, we have a tendency to establish many style necessities for helpful searching systems and analyze existing approaches to envision however well they meet them. Our objective is to shed some lightweight on potential analysis and development directions for the accessible blind searching community and to supply designers of accessible searching solutions analysis tools which will be used as initial points of comparison.

C. Magnusson, K. Rassmus-Grohn, C. Sjostrom, H Danielsson, **"Navigation and recognition in complex haptic virtual environments reports from an extensive study with blind users"** [5] The result of these project show that blind users can easily handle also quite difficult object and environments, and that realistic virtual environments in few cases.It appear easy to handle than more abstract test environments. This highlights the importance of context, and thus the importances of other input channels beside the purely haptic one. Another factor observed to be important for this is haptic scanning strategy. Tentative results for age, gender and blindness from birth are ready, and the importance of correct haptic models is pointed out.

C. Sjostrom, **"Touch Access for People with Disabilities"** [6] Haptic computer interfaces are creating new possiblities of interaction among computers. Sound and graphics will be accompanied by virtual touch. As possible we can feel our way around the computer desktop. Certec has been implementing on touch interfaces – haptic interfaces – since 1995, exploring the number of ways they can offer people with different kinds of disabilities. With a haptic computer interface, a blind person can do many things like play haptic computer games, learn mathematics by tracing touchable curves, and get best access to graphical user interfaces like Windows.

Zeeshan Ali, Reena Sonkusare **"RFID Based Smart Shopping and Billing"** [8] An Overview "Information Communication and Embedded Systems (ICICES), 2014 International Conference on Year 2014". To date various methods had been proposed to enhance the life style of visually impaired and blind people. Still purchasing products in the supermarket without others support is challenging one for them. The paper describes a system that gives the guidance for them to identify and purchase their products in the supermarket. Quick Response code (QR code) technology is used to identify the product which is far better than existing RFID technology . The audio instructions will guide them inside the supermarket based on the real time situations. It provide obstacle detection to navigate inside supermarket without colliding with any 3D object. Billing system is also automated, which makes system smart. Hence it eliminates the existing queuing system in the supermarket, hence improves the service.

Eu Jin Wong, Kian Meng Yap **"Towards a Platform of Haptic-Audio Based Online Shopping for the Blind People"** [10] This paper examined and reported results on a website design which could allow the visually impaired to navigate, access, interpret and haptically interact with the web content, indivisually without help. Some of our qualitative analysis suggests that a consistent threesection webpage design with static content along with the aim of directional cues and audio information are feasible to design online shopping website for blind people. Also, for effective haptic analysis of online products, the complete model and different parts of the model should be rendered separately in order to provide the user with a better perception about the product.

IV. PROPOSED SYSTEM

Paper introduces a smart shopping facilitator for blind. The machine mainly meant for blind also can be used for ordinary human beings. Automatic Billing is added within the smart statement techniques. And payment the usage of coins on transport or on line can be carried out inside the device. In order that ready long for billing can be averted. The audio instructions will help them inside the supermarket application based at the real time conditions. And these Audio instructions assist the blind people buy product within the grocery store software. The guidelines are given to pick out products. While studying product id and all the information about product are given via the microphone.

This project is useful for blind person shopping. The main objective of Ambient Assisted Living is to provide blind people the facility to shop themselves without help of anyone or detect household stuff by themselves. The scope is to provide the facility of text to speech conversion for impaired person to shop independently by solving the navigation problem for blind person with less number of hardware requirements.

V. IMPLIMENTATION

Overview: The architectural design of the system is as follow which contain the some important points such as algorithm etc.
a. Two protocol for authentication, password-based authentication and voice assistance based authentication that uses visualization by technique for increased reality to give both high security and high convenience. Both conventions offer great circumstances in light of visualization both as far as security and convenience.

b. Model utilization as Web applications which demonstrate the convenience of our conventions in true organization settings.

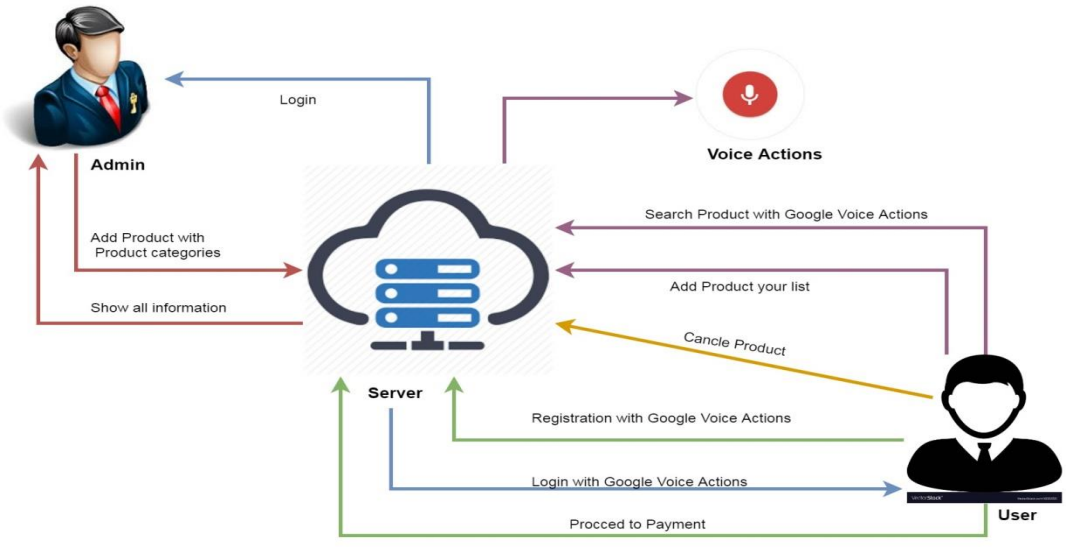

Fig.1: System Architecture

VI. RESULT

- It is convenient for the blind people to do the online shopping performance.
- The system contains five major components:
  1) Database which contain clothing images, a microphone for speech command input.
  2) Speech converter that convert the input speech into text format.
  3) Display of resulting product on the screen of desktop or wearable computer along with speech technique.
  4) Select Product and Perform Payment method, audio instruction guide is available for that.
  5) Perform Transaction by any method which is suitable for you and Logout.

VII. CONCLUSION

The clever shopping application creates an automatic central Billing system (ACBS) for supermarkets utility the usage of pid (product identification), clients will not have to wait near cash counters for their bill price. Due to the fact their purchased product records is transferred to vital billing system, customers will pay their bill via credit score/debit cards as well. The proposed smart purchasing system intends to assist buying in-individual with a view to reduce the sizable amount of time spent in shopping as well as to time required in finding the favored product without problems. The customer simply needs to speak the name of the product, and the cart will routinely manual him/her to the product/s on display screen. The gadget proposed is noticeably reliable, authentic, truthful and time-effective. There can be reduction in income quantity given to personnel and additionally discount in robbery since it reduces the guide duties.

FUTURE SCOPE

The development of the areas of improvement is: sensible Phone may be replaced by the other device if obtainable and therefore the data of things on top of and below the presently detected item are contending within the user's sensible phone.

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