Web Accessibility for Blind Users/Persons

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Abstract- *Blind human beings face numerous troubles in their existence, this kind of problems that is the maximum essential one is to get right of entry to net contents when they may be running or surfing internet. get entry to web content continues to be a mission for the visually impaired, as the desires of such network is very numerous. The get entry to is in addition hindered by means of the reality that designers retain to build web sites non-compliant with internet content Accessibility (WCA). Facts on the surroundings permits human beings and vertebrates to understand approximately sources which are in lots of one of a kind direction, mainly signals that are outdoor the detection variety of other senses. Sound source localization is inherently essential for safety-survival and navigation. further to the acoustical cues, the visual cues which includes item detection, monitoring and distance measurement play a vital role inside the navigation not most effective for robots, but also for blind human beings, given that they're regularly depending on artificial intelligence. net accessibility is one of the very vital human senses which are gambling the most important function in human notion approximately surrounding environment. as a result, over the posted papers in this difficulty, a spread of laptop net services and products are proposed by using growing new methods for scene expertise. This paintings goals to introduce a method that restores a principal function of the web gadget which is the accessibility scene interpretation. The purpose of this paper is to analyse the development of a web navigation useful resource for blind and visually impaired humans.*

Keywords- Blind people, Equivalent points, Computer web accessibility, web substitution system, patches matching, Web Content Accessibility (WCA).

I. INTRODUCTION

Web scene or content information is a challenging venture for blind people. In reality, one in every of their best problems is the identification in their environment and its components. The technology & engineering of making clever device is named as artificial intelligence. synthetic intelligence (AI), once in a while referred to as system intelligence, is intelligence confirmed through machines, in comparison to the herbal intelligence displayed by means of human beings. In fashionable, synthetic intelligence is the look at of how to make machine do things which at the moment human do higher. The scope of AI is disputed: as machines emerge as increasingly capable, obligations considered as requiring "intelligence" are frequently eliminated from the definition, a phenomenon called the AI impact, main to the quip, "AI is anything hasn't been executed yet." The web holds exquisite capability for blind computer customers. most web content is fantastically open, represented in virtual codecs that can be mechanically transformed to voice or refreshable Braille. software program packages known as display screen readers can convert a few content materials to an available form, but warfare on content material no longer created with accessibility in thoughts. on this device, we have in short explored existing research concentrated on internet data accessibility for blind customers, starting from traditional techniques (Braille output, display readers, and many others.) to semantically more suitable strategies. Then, we are presenting an on-going framework, exploring internet module for the blind character to go looking in an effort to enhance the representation of heterogeneous internet pages, or the different internet website online including Google, YouTube and many others. in addition, we're going to put in force the letter or the text writing facility using voice command.

II. LITERATURE REVIEW

Mexhid Ferati, Bahtijar Vogel, Arianit Kurti, Bujar Raufi, David Salvador Astals, "Web Accessibility for Visually Impaired People: Requirements and Design Issues" [1] Access to web content continues to be a challenge for the visually impaired, as the needs of such community are very diverse. The access is further hindered by the fact that designers continue to build websites non-compliant with Web Content Accessibility Guidelines (WCAG). To better understand the needs of the visually impaired community, three workshops were organized with various stakeholders coming from three different countries. The results from the workshops suggest that one-solution-fits-all model is inadequate without considering the levels of visual impairment when providing customized web experience. A set of requirements devised from the workshops guided the process of building a middleware prototype. Using eight adaptation techniques, the prototype provides the required user experience based on users level of visual impairment. Preliminary evaluation of the middleware suggests that several adaptation techniques perform better with non-WCAG compliant websites compared to those being compliant.

Hanen Jabnoun, Faouzi Bensarti, and Hamid Amiri, "Visual Scene Prediction for Blind People Based on Object Recognition". [2] Vision is one of the very essential human senses which are playing the most important role in human perception about surrounding environment. Hence, over the published papers on this subject, a variety of computer vision products and services are proposed by developing new methods for scene understanding. This work aims to introduce an approach that restores a central function of the visual system which is the visual scene interpretation.

The proposed pipeline is based on the identification of surrounding objects in dissimilar frames from video scene. Otherwise, the experimental results using feature extractions showed good accuracy for detecting object in natural conditions. Features extraction and Bag of Visual Words correspondence are exploited for scene type understanding.

Mounir Bousbia-Salah, Abdelghani Redjati, Mohamed Fezari, Maamar Bettayeb, "AN Ultrasonic Navigation System for Blind People". [3] The aim of this paper is to investigate the development of a navigation aid for blind and visually impaired People. It is based on a microcontroller with synthetic speech output. This aid is portable and gives information to the user about urban walking routes to point out what decisions to make. On the other hand, and in order to reduce navigation difficulties of the blind, an obstacle detection system using ultrasounds and vibrators is added to this device. The proposed system detects the nearest obstacle via streoscopic sonar system and sends back vibro-tactile feedback to inform the blind about its localization.

Nazli Mohajeri, Roozbeh Raste, Sabalan Daneshvar, "An Obstacle Detection System for Blind People". [4] Blind people face several problems in their life, one of these problems that is the most important one is detection the obstacles when they are walking. In this research, we suggested a system with two cameras placed on blind person's glasses that their duty is taking images from different sides. By comparing these two images, we will be able to find the obstacles. In this method, first we investigate the probability of existence an object by use of special points that then we will call them "Equivalent points", then we utilize binary method, standardize and normalized cross-correlation for verifying this probability. This system was tested under three different conditions and the estimated error is inacceptable range.

Larisa Dunai Dunai, Ismael Lengua Lengua, Ignacio Tortajada, Fernando Brusola Simon, "Obstacle detectors for visually impaired people". [5] This paper carries out a review on Electronic Travel Aid Systems (ETAS) for visually impaired people and describes a new wearable Cognitive Aid System for Blind People (CASBliP) developed within the frame of European CASBliP project, in which the authors are taking part. Information on the environment enables humans and vertebrates to know about sources that are in many different directions, particularly signals that are outside the detection range of other senses. Sound source localization is inherently important for safety-survival and navigation. In addition to the acoustical cues, the visual cues such as object detection, tracking and distance measurement play an important role in the navigation not only for robots, but also for blind people, since they are often dependent on artificial intelligence.

Due to the fact that blind people make maximum use of sound not only to know the obstacle presence, but also how dangerous it is, in order to avoid it effectively, the CASBliP devices use acoustical sounds in order to represent the visual information detected by the sensors and artificial vision systems.

III. SYSTEM ARCHITECTURE OVERVIEW

Accessibility is described as the minimum time spent by way of the person to attain a selected piece of information. on this context, blind customers face many problems even as surfing net. As stated previously, many hardware and software primarily based strategies have been advanced for this reason. On one hand, maximum hardware answers (e.g., Braille Keyboard and Braille output) are normally pricey and require special equipment to be hooked up on each laptop system. however, software program answers (e.g., audio-primarily based speech synthesis: screen readers and speaking browsers and gesture-primarily based navigation on touchscreens which have been shown particularly beneficial when using smartphones). hence we proposed a machine of web accessibility for blind individual on this gadget in depth simulation outcomes suggest that the planned machine considerably we supplied necessities accumulated from three workshops held with one of a kind stakeholder to pick out the wishes of visually impaired customers. the novelty of this look at become the identity of two critical elements relevant whilst addressing the wishes of visually impaired people. the primary issue recognized become the context of use, which influences the accessibility of virtual content material for the visually impaired customers. the second one element become the need to evaluate consumer's degree of visual impairment earlier than applying any model method on the prevailing web content.
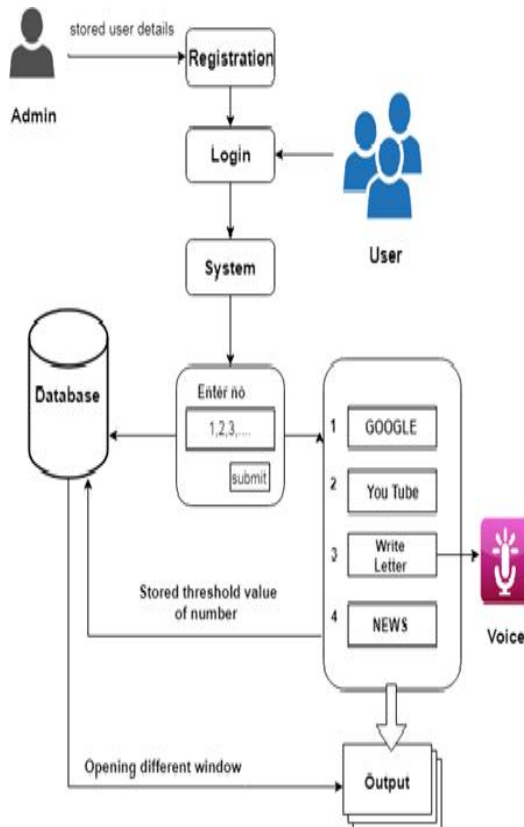
Fig.1 (System Architecture)

IV. RESULTS

We present a new smart system to help for blind persons, named Web Accessibility for Blind Users/Persons, in that we present an ongoing framework, exploring web module for the blind person to search in order to improve the representation of heterogeneous Web pages, or the Different web site such as Google, YouTube etc. The contributions of our work include:

- To convert speech command into text (letter writing).
- To provide equal access and equal opportunity to people with disabilities.
- To make easy access to the website.
- To explore convenient way to find the things on web.

V. CONCLUSION

On this system, we've got in brief explored current studies focused on web records accessibility for blind users, ranging from conventional strategies (Braille output, display readers, and many others.) to semantically stronger strategies.

Then, we're offering an on-going frame work, exploring web module for the blind individual to look to be able to improve the representation of heterogeneous net pages, or the special internet web page inclusive of Google, YouTube and many others. further, we're going to put into effect the

letter or the textual content writing facility the use of voice command. To construct a web page for blind or visually impaired man or woman to enhance their lives, there arises the want for greater web primarily based, speech to textual content and text to speech packages.

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