Abstract

Of the 37 million visually impaired people across the globe, over 15 million are from India. [1]. The world today demands people to be independent, irrespective of their challenges, mentally or physically [2]. Despite an increased amount of technologies and systems designed to address the navigational requirements of the visually impaired community, current research has failed to sufficiently address the human issues associated to their design and use [3]. Sensors hold a wide scope of development, implementation and improvement in this area. Several technologies have been developed, based on sensors to meet the day to day needs of this community. But they have not proved to be very helpful due to various reasons like cost,
portability etc. Therefore, before we proceed to the further developments in this area, we must closely study the Human Computer Interaction that too from the viewpoint of the visually challenged. It has been proved that visually impaired vary individually and collectively in their use of environmental context during micro- and/or macro-based navigation [15]. In this paper, we will take a look at some technologies developed so far, their advantages and drawbacks, and thus conclude the various aspects to be focused on to give way to better technology that will help the visually impaired community. We also see how sensors and their technological improvement can prove to be helpful.

References

- Kounteya Sinha, TNN Oct 11, 2007, 02. 32am IST (The Times Of India)
- "Automated Vehicles For Physically And Visually Challenged"; L. Shrinivasavaradhan And G. Chandramouli (Shri Sai Ram Engineering. College, West Tambaram, Chennai India).
- "A Pathway To INDEPENDENCE: WAYFINDING SYSTEMS WHICH ADAPT TO A VISUALLY IMPAIRED PERSON'S CONTEXT"; Nicholas A. Bradley; Mark D. Dunlop University Of Strathclyde, UK
- "Smart" Cane For The Visually Impaired: Technological Solutions For
Detecting Knee-Above Obstacles And Accessing Public Buses"; Paul Rohan, Garg Ankush, Singh Vaibhav, Mehra Dheeraj, Balakrishnan M., Paul Kolin, Manocha Dipendra (Department Of Computer Science And Engineering, Indian Institute Of Technology, Delhi)
- "Wearable Obstacle Detection System For Visually Impaired People"; Sylvain Cardin, Daniel Thalmann And Frederic Vexo Virtual Reality Laboratory (Vrlab) Ecole Polytechnique Fédérale De Lausanne (EPFL); CH-1015 Lausanne, Switzerland
- "Guiding Visually Impaired People In An Exhibition"; Francesco Belloti, Riccardo Berta, Alessandro De Gloria, Massimiliano Margarone (Dept. Of Biophysical And Electronic Engineering, University Of Genoa, 16145 Italy).
- "Investigating Context-Aware Clues To Assist Navigation For Visually Impaired People"; Nicholas A. Bradley, Mark D. Dunlop; Department Of Computer And Information Sciences; University Of Strathclyde, Glasgow, Scotland

Index Terms

Computer Science       Image Processing

Keywords

Visually Impaired       Technology       Obstacle       Descriptive       Information.