Visually impaired to get technological aid to perceive the surrounding environment with reduced complexity

Usage of Cortex M0 Processor makes this possible

Vision is one of the essential human senses and it plays an important role in human perception about the surrounding environment. And especially for those who are visually impaired it is imperative that new technological aids are developed to assist them to perceive the surroundings with reduced complexity.
Research has been conducted at **The Department of ECE @ IIIT-Delhi (Indraprastha Institute of Information Technology Delhi)** by Dr. Sujay Deb and B.Tech. student, Swapnil Bansal, to develop an efficient object recognition method using various techniques of **Canny Edge Detection, Image Segmentation and Calculating the Extent Ratio.**

According to the World Health Organization survey 2017, there are approximately 285 million people who have visual impairments. Almost 90% visually impaired are living in low-income countries. Therefore, in this world of embedded engineering, this paper suggests a methodology to overcome the problem. In addition, IIIT-Delhi models a novel application which can be implemented on hardware for the development of a cost-effective image detection device.

Though there are many other detection methods previously developed, the **canny edge detection** takes precedence in noise reduction.
This presents a system which can be conveniently used in real-time scenarios to assist the ones who are visually challenged. The research moreover concluded that the **ARM-based object recognition** system is a low-cost solution to automated object classification. This solution optimizes the cost of implementation and produces considerably fast results on recognizing the objects. In further addition to this, the institute is also in the process of developing a smart device which works on the above suggested principle.
Source of the data - The WHO visual impairment statistics of 285 million is from a 2017 survey.

Kindly let me know if you require any additional details; or if you would be interested in doing an exclusive / industry story on 'IIIT-Delhi', would be glad to coordinate with you on the same.

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