

Dr. AMBEDKAR INSTITUTE OF TECHNOLOGY, BANGALORE –56
(An Autonomous Institution, Affiliated to Visvesvaraya Technological University,
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Project Report on

**“SPECIAL ASSISTANCE FOR VISUALLY IMPAIRED
PERSONS”**

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ABSTRACT

Special assistance for visually impaired persons is a prototype of a hand held device which can assist the blind by detecting obstacles and provide a spoken audio alert of the detected obstacle to the user.

In our project, first the selected obstacle images are stored in Database. “Ultrasonic” sensor is used for the purpose of obstacle detection within the specified range and a binary signal will be sent to the Microcontroller. This signal is used to enable the external webcam. Image of the obstacle in front of the user will be captured. Our project mainly deals with Image processing, so the image captured will be taken as an input, then the test image will be compared with the images stored in the Database. For comparison of images Scale Invariable Feature Transform (SIFT) algorithm is used. After comparison the corresponding signal is sent to the Microcontroller through the COM port. Microcontroller uses this character to activate the corresponding Audio (Voice) stored in Audio Play Record (APR) board. This Audio (voice) alert is given to the user through the Loudspeaker or earphone.

Ultrasonic sensor is activated using Embedded C programming language and for image comparison MATLAB is used.