Conference Abstract

Smart cap as an electronic travel aid for visually impaired person

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Abstract

This research aimed to develop an ultrasonic sensor based smart cap as an electronic travel aid to improve the safe self-movement of the visually impaired persons. This smart cap provides the audible and mechanical vibration guidelines to the visually impaired, about the obstacles in their surroundings. Three ultrasonic sensors are connected in front, left and right sides of the cap to detect the obstacles. A buzzer and two vibration motors are connected to the cap to provide audible beep and mechanical vibrations that can be sensed by the person. All components are interfaced with Arduino UNO microcontroller and powered with 9V battery. The obstacle distance distances are set to 80 cm for front and 60 cm for left and right sides. Additionally, temperature sensor and LED display are also connected with the microcontroller to measure and display the body temperature of the person.

Keywords: Microcontroller, Visually impaired, Ultrasonic sensors