

Smart Navigation System for Visually Impaired Individual

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Abstract: A significant number of blind and visually impaired individuals around the world frequently require assistance. In this paper, I have introduced a system designed for visually impaired people, utilizing an ESP32 microcontroller, an ultrasonic sensor, and GPS. This system detects objects and converts the information into audio signals. Various types of sensors are employed in the design, and it also includes Bluetooth functionality for audio navigation. This smart electronic aid is lightweight, user-friendly, energy-efficient, simple to operate, and easy for users to understand.

The goal of this project is to assist visually impaired individuals in navigating independently. It is a portable solution suitable for both indoor and outdoor use. This smart electronic aid helps guide visually impaired users by detecting obstacles within its range along their path.

Keywords: ESP32 microcontroller, Ultrasonic sensor, Bluetooth and GPS

