UE23CS251B: MPCA 4th Semester Section

Smart Man Blind Stick

The Smart Man Blind Stick is an intelligent, cost-effective, and assistive device designed to enhance navigation and safety for visually impaired individuals. It leverages both hardware-based sensing and software-driven image recognition to provide a multi-layered awareness system.

The stick is equipped with an ultrasonic sensor to measure the distance of obstacles ahead, and an IR sensor to detect close-range obstructions. When a nearby object is detected, a buzzer alerts the user with an audible beep, ensuring immediate response and safety.

To further enhance usability, image processing is performed using a connected laptop or smartphone camera. The system is capable of detecting specific objects or humans in the path. Based on real-time recognition, a voice-over system provides meaningful verbal feedback using speech synthesis—announcing alerts such as "person detected"

This hybrid solution combines Arduino-based hardware with Python-powered software, eliminating the need for wireless modules and keeping the system affordable and practical. By integrating both sensory and visual feedback mechanisms, the Smart Man Blind Stick offers a reliable and enhanced mobility aid for the visually impaired, improving confidence and independence in daily navigation.