TOP STUDENT PROJECTS

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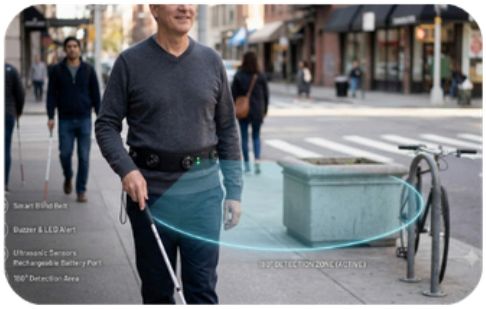
PROJECT TITLE

SMART BLIND BELT



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PROBLEM STATEMENT

Visually impaired people often find it difficult to detect obstacles and move safely. To help them navigate more easily, we developed a Smart Blind Belt. The belt uses 180° sensors to detect nearby obstacles. When an obstacle is detected, a buzzer and LED indicator alert the user. This system improves safety, mobility, and independence in both indoor and outdoor environments.

SOLUTION

The proposed system is a Smart Blind Belt that helps visually impaired people navigate safely. The belt uses three ultrasonic sensors placed to cover approximately 180° (left, front, and right sides) to detect obstacles around the user. Based on the detected obstacle position and distance, the corresponding vibration motor provides tactile alerts, allowing the user to understand the direction of the obstacle without hearing any buzzer sound. The system also provides live location tracking and navigation assistance through a smartphone, helping users travel safely and independently. This enhances user confidence and mobility by providing real-time environmental awareness and safe navigation support.





SCAN ME

Technology stacks:

ESP32 | Arduino IDE | Ultrasonic Sensor | Embedded C | Buzzer | Robotics | Sensors & Automation