VEL TECH RANGARAJAN Dr. SAGUNTHALA R&D INSTITUTE OF SCIENCE AND TECHNOLOGY

FRESHMAN ENGINEERING

CDIO WORKSPACE - 1

DESIGN AND FABRICATION OF SMART BLIND STICK

Theme: Public Safety

ABSTRACT

Visually impaired individuals face significant challenges in navigating their surroundings safely, Existing solutions like traditional white canes or basic obstacle-detecting sticks provide limited assistance and lack features for emergency communication. To address this, we propose a "Smart Blind Stick" equipped with advanced features for enhanced safety and convenience. The device integrates an Arduino Uno microcontroller, four ultrasonic sensors for detecting obstacles at various heights, and one sensor at the bottom to detect potholes. A buzzer and vibrating motor provide real-time alerts to the user. Additionally, a GPS module and GSM module enable SOS alerts with precise location sharing during emergencies. By combining real-time obstacle detection and emergency communication capabilities, this project bridges the gapbetween basic assistive devices and modern smart technology.

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