

Smart Blind Stick

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Abstract: *The Smart Blind Stick is an innovative assistive technology designed to aid visually impaired individuals in navigating their environment safely and independently. Traditional canes provide limited feedback, often requiring users to rely on physical contact with objects in their surroundings. This project aims to enhance the functionality of the traditional cane by integrating modern sensor technologies and advanced feedback mechanisms.*

The Smart Blind Stick is equipped with ultrasonic sensors, which detect obstacles in the user's path, alerting them to potential hazards such as walls, furniture, or other obstacles. Additionally, the device incorporates vibration motors to provide real-time tactile feedback, enabling the user to understand the proximity of obstacles based on the intensity and frequency of the vibrations. An optional audio output system, using a speaker or earphones, can also offer verbal warnings or guidance. To improve navigation, the Smart Blind Stick features a GPS module, allowing the user to receive directional assistance for outdoor navigation. The stick can be synced with a mobile app, where users can set desired destinations and receive turn-by-turn instructions.

Furthermore, the Smart Blind Stick includes a built-in Bluetooth feature, allowing users to connect with other devices or services, such as emergency alert systems or smartphones. With a lightweight, ergonomic design, the Smart Blind Stick provides both comfort and functionality for users in both indoor and outdoor environments.

This project aims to provide visually impaired individuals with greater independence, safety, and confidence while navigating the world around them, improving their overall quality of life .

Keywords: Smart Blind Stick

