Researchers

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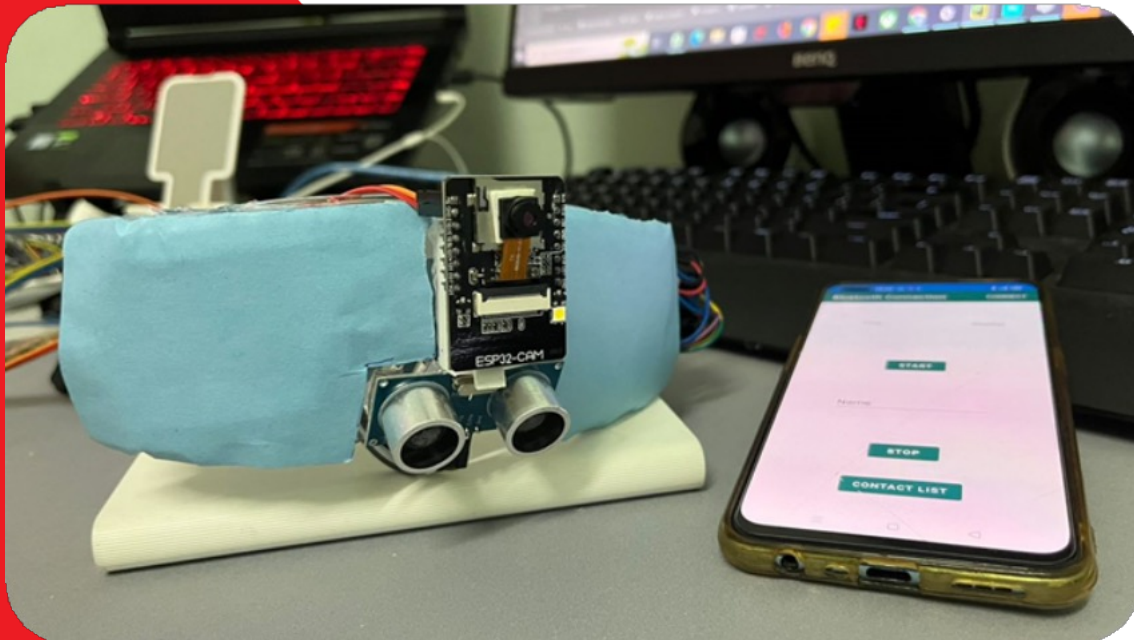
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VisionGuard: Empowering Sight with Smart Spectacles

- Object detection through ESP32 camera module.
- Obstacle detection using ultrasonic technology.
- Voice control feature for easy accessibility.
- Affordable and made from Arduino parts.
- Convenient and user-friendly design.
- Integration with mobile phones for enchanced functionality.
- Boosts confidence and lowers the risk of accidents for blind individuals.

"Empowering Independence Through Innovative Sight"

Objectives

- Enhance the confidence of users with visual impairments and mitigate risks during street navigation.
- Develop affordable smart spectacles for individuals with visual impairments.
- Enable seamless integration with existing assistive technologies for a comprehensive and accessible user experience.
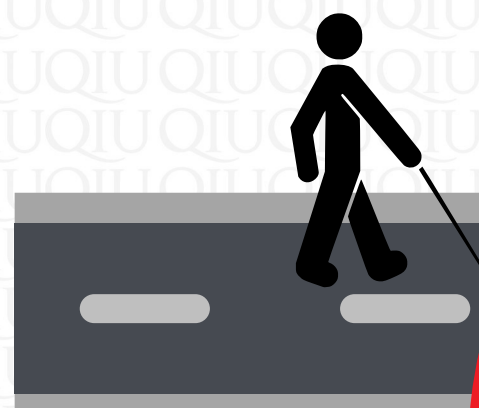
Benefits

- Affordable tools using Arduino parts boost user confidence and reduce accident risks.
- Beacon sound technology enables convenient obstacle navigation with clear auditory guidance.
- High and low-pitch beacon sounds indicate a walkable path as users rotate their heads.
- Tools connect to mobile phones for easy accessibility and voice control.
- Voice commands provide effortless access to weather and time info and to make emergency calls.

Novelty

The proposed smart glass solution for visually impaired individuals is a novel and innovative device that integrates multiple advanced features. It combines object recognition, obstacle detection, and voice control functionalities into a single wearable device designed specifically for people with visual impairments.

With the integration of an ESP32 camera module, ultrasonic sensors, and a mobile application interface, the smart spectacles offer a comprehensive and user-friendly tool to enhance independence and mobility. This inventive combination of technologies addresses the unique needs of the affected community, providing an affordable device that boosts confidence and facilitates navigation.

INTO THE FUTURE