

Smart Assistant for Visually Impaired People

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Abstract: *The project "Smart Assistant for Visually Impaired People" focuses on developing an assistive device that enhances the mobility and independence of visually impaired individuals. The system utilizes a Raspberry Pi, Pi Camera, and ultrasonic sensors to detect obstacles in real time. The camera captures images while the sensors measure the proximity of objects. This data is processed using Python-based algorithms, and the detected objects are converted into speech using text-to-speech (TTS) technology. The auditory feedback is delivered through earphones, providing real-time navigation assistance. Designed to be portable, cost-effective, and user-friendly, this solution enables visually impaired individuals to navigate their surroundings safely and autonomously. By minimizing dependence on external help, the project promotes independence, inclusivity, and a more accessible society.*

Keywords: IoT (Internet of Things), Ultrasonic sensor, Rasp Pi, Object detection, Pi Camera, Speech Output, Earphone