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(57) Abstract :
ABSTRACT A MACHINE LEARNING BASED SMART ASSISTIVE DEVICE FOR REAL-TIME NAVIGATION, OBJECT DETECTION FOR VISUALLY IMPAIRED AND ELDERLY INDIVIDUALS The present invention relates to the machine learning based smart assistive device for real-time navigation, object detection for visually impaired and elderly individuals through the image processing. This device enhances situational awareness and ensure safer navigation for visually impaired and elderly individuals. It integrates advanced technologies like machine learning, image processing, object detection, and real-time navigation systems into a compact, wearable form. The device uses a lightweight, energy-efficient microcontroller for smooth operation and management of key components. A core feature is the GPS module, which provides real-time location tracking and turn-by-turn navigation. The device can communicate with caregivers or emergency services through a GSM module, sending alerts in case of an emergency or if the user deviates from their route. Advanced image processing with a high-resolution camera detects obstacles and hazards. To be published with Figure 1

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