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SmartVision: Bringing Sight through Sound with Real-Time Guidance

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Abstract: *Visually impaired individuals face systemic challenges in navigating complex environments and identifying everyday objects independently. [1] To address these accessibility barriers, this review paper evaluates SmartVision, a comprehensive, voice-activated assistive web application designed to significantly enhance user autonomy. The system integrates advanced computer vision models to provide real- time, auditory scene descriptions and general object detection, while introducing a novel, on-demand similarity matching process for user-specific personal items. [3] For seamless accessibility, SmartVision employs a highly secure, completely hands-free facial recognition login mechanism powered by DeepFace and Firebase, removing traditional input barriers. Furthermore, the platform supports independent mobility through an integrated GPS-based route navigation module and prioritizes user safety via an intelligent, voice-triggered emergency alert system.[4].*

Keywords: *SmartVision*

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