Sightless Helper: An Interactive Mobile Application for Blind Assistance and Safe Navigation

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**Abstract**

This paper proposes a mobile application named “Sightless Helper”, for assisting blind or visually impaired people. The application uses footstep counting and GPS for indoor and outdoor navigation. It can detect objects and unsafe areas to ensure safe navigation. The system consists of voice recognition, touchpad, button and shaking sensor for easy interaction between the user and the system. During any kind of accident, it can detect unusual shaking of the user, and send his/her location to some emergency contacts. “Sightless Helper” pro-vides several useful additional features such as calendar, news reading, barcode reading, battery monitoring, etc. The performance of the application is tested considering voice recognition time and location sending time. The experimental result shows that the voice recognition time of the application is around 6.303 ms and 6.375 ms for male and female voices respectively. The average location sending time is nearly 7.629 ms to any distance. The usability test result reveals that the proposed application has an average 72.2% System Usability Scale (SUS) score, showing its suitability for practical implementation.

**Keywords:** Android application, Visually Impaired people, Object identification, GPS navigation

**Conference / Journal Link**

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