

SMART SHOES FOR VISUALLY IMPAIRED

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Abstract

There are many reports published by the World Health Organization (WHO) regarding people with visual disabilities. It is noteworthy that by the year 2020, worldwide, the number of fully blind people will reach 75 million, while the number of visually impaired people will rise to 250 million. (*Who.int. 2019. Vision Impairment And Blindness, 2019*).

The most significant challenge for a visually impaired person is when traveling from one place to another. An appropriate device is needed to help the blind and the elderly walk in complete confidence and independence. In this document, it is discussed and developed a navigation system that supports independent walking for the visually impaired, which will also monitor common opportunities, identify barriers at different heights on flat roads and improve outdoor and indoor mobility. Barrier detection and notification can improve mobility as well as the safety of the visually impaired, especially in unfamiliar environments.

Using the technologies which are the Internet of things, text to speech, voice recognition, text analytics, many algorithms to present an application called **SMART SHOES** where it's a way to give a hand to blind people with the aid of technology in order to solve some of their faced problems while navigating around the places. A smart shoe accessory is a portable, small, light, easy to manage: no switches, no complicated control buttons, no dashboard and no switches.

This application results in helping identify issues faced by the blind on a daily basis and encourages more projects to come up for helping colleagues who have such difficulties, and them to live everyday life independently.

Keywords: Internet Of Things, Voice Recognition, Speech To Text, Arduino, Android, Navigation System, Direction Metrix.