

NAVIGATING INSOLE

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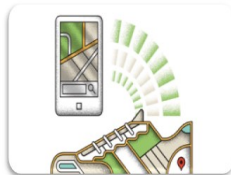
December 5, 2023

Overview

- 1 Abstract
- 2 Introduction
- 3 Problem Statement
- 4 Existing Method
- 5 Proposed Method
- 6 SDG and its Impact
- 7 References

Abstract

- The Navigating Insole is an inventive shoe-based navigation system designed to empower visually impaired individuals by providing directional guidance through strategically placed vibrations in the sole.
- By incorporating IoT technology, sensors, and microcontrollers, these shoes enhance spatial awareness and promote confidence, ultimately improving the mobility and autonomy of the visually impaired.



Introduction

- The Navigating Insole is a smart solution for visually impaired people to move around more freely. These special shoes use vibrations and technology to guide users, helping them understand their surroundings better and feel more confident while walking.
- This innovation improves the lives of visually impaired individuals by giving them more independence and making their daily experiences more comfortable.

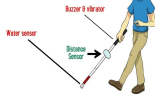


Problem Statement

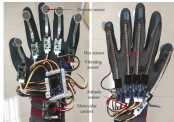
- Design an IoT-based navigation system for individuals to help them reach a fixed destination. The system should guide the user based on the movements towards left or right direction corresponding to the vibration.
- Existing navigation solutions may rely on visual and detection of obstacles, which can be limiting or disruptive to certain users.
- Therefore, there is a need for wearable technology that seamlessly integrates with everyday clothing, providing a discrete and intuitive way for individuals to navigate their surroundings while increasing mobility and independence.

Existing Method

Smart Blind Stick With



Blind Stick - Mobility and obstacle detection



Smart Gloves - Tactile Navigation



Smart Shoes - Object Detection

Proposed Method

- Navigation methods in smart shoes typically utilize sensors, GPS technology, to track the user's movement and orientation. By combining data from these sensors, the system can calculate the user's position and provide directional guidance.



Vibration Motor



Esp32



GPS Module

SDG and its Impact

- Navigating Insole contributes to SDG goal 3, equipped with sensors and technology, has the potential to improve mobility and accessibility for individuals by providing vibration and foot health.
- Navigating Insole enhances mobility, comfort, and physical well-being by optimizing movement, posture, and foot health.



References

- “Smart shoes: walking towards a better future” system proposed by Miss. Rutuja Anil Shinde, Dr. B. A. T. University, Dr. S. L. Nalbalwar and Dr. Sachin Singh (ISSN: 2278-0181 IJERTV8IS070167 Vol. 8 Issue 07, July-2019).
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Thank you