

## IoT-based Assistive Smart Shoe for Disabled Individuals Using Kansei Engineering

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The difficulty accessing the transport for visually impaired people and other people with disabilities shows the need for advanced technology development. To address this problem, this research propose a specialized Smart IoT shoe based on Kansei engineering to improve user mobility, safety, and self-sufficiency. The main goal is to develop an approach that is user-oriented design which identifies obstacles and responses to the emotions and functions of the target user. The study used Kansei Engineering to assess user emotions and needs and create shoes with ultrasonic sensors, tactile feedback and audio signals controlled by microcontrollers incorporated into the shoes. A pilot study was used to evaluate the effectiveness of the system, and the user's orientation was improved using prototypes and the user's ability to navigate independently improved. In addition, the connection of smart shoes with smartphone applications such as Bluetooth allowed users to track, update their locations and notify caregivers, which increases user safety and confidence. The results suggest that smart shoes equipped with IoT can reduce the need for assistance and promote user privacy. This shows that the combination of IoT technology with a human-centered design approach can achieve many positive results for persons with disabilities. We will focus on improving the technology, encouraging its widespread adoption, and assessing the potential impact on other disabilities.

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