Real-time Smart Navigation System for Visually Impaired People

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Abstract

Visual sense plays a primary role in guiding sighted people through an unfamiliar environment and assisting them to reach a destination safely. Visual impairment describes the actual damage that makes it difficult to accomplish visual tasks because it makes it difficult to see clearly. This paper proposes an approach to overcome the challenges faced by visually impaired people with the help of machine learning. This proposed system combines a smart cane and a wearable smart glass. Obstacle and pothole detection help to increase the safety and comfort of visually impaired users by detecting and displaying obstacles, and the Smart Walk-lane Navigation assists in navigating through the walk-lanes without letting them into the main roads and helps to prevent accidents. Road sign detection allows users to follow road signs and cross the roads safely, while the face and emotion detection allows users to recognize well-known people and their emotions.

Keywords

Visual Impairment, Machine learning, Smart Cane, Smart Glass.