EYE-RECOGNIZE

Blind Sight Assistant System

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MOTIVATION

- 253 million visually impaired worldwide
- They Require help from others or guide dogs
- Guide dogs are not allowed in public forms
- Limiting 253 million people from moving freely

FEATURES

Guide people indoors so they can become independent
- Ease of use
- Long operation time of 5 hours
- Comfortable design
- Gain independence
- Rediscover the world through our eyes or through Eye-Recognize

HOW IT WORKS

1. Sensor Detection:
Ultrasonic sensor detects objects in 100-150 cm range

2. Vision Computation: Picture is taken and sent to the Raspberry Pi; Image Classification using TensorFlow, OpenCV and Inception V3

3. Text to Speech:
gTTS transforms the result to speech

4. User Notification:
User gets notified with what's in front of him

5. Rest Mode:
If user is idle, the user toggles a switch to mute the system

python

Raspberry Pi

Google Text-to-Speech

MICROCHIP
PIC16F4550

TensorFlow

DIAGRAM

| PI CAMERA | → | RPi (image processing, text-to-speech) | → | EARPHONES |

DC POWER SUPPLIES → PIC ← ULTRASONIC SENSOR

SWITCH → PIC