

# Obstacle Detector for the Visually Impaired

Eliya Netanel  
Almog Geva  
Matan Breizman



# PROBLEM VS SOLUTION



## PROBLEM

Guidance devices for the visually impaired today lack functionality. They supply a short range detection, with a single point of contact.



## SOLUTION

An image processing based device to allow for a wider and longer range of obstacle detection, To improve the independence of the individual.



# THE IDEA:

A wearable harness equipped with the device in the center of the body.

The Device will provide guidance by detecting on-coming obstacles by alerting the user via sound / vibrations.

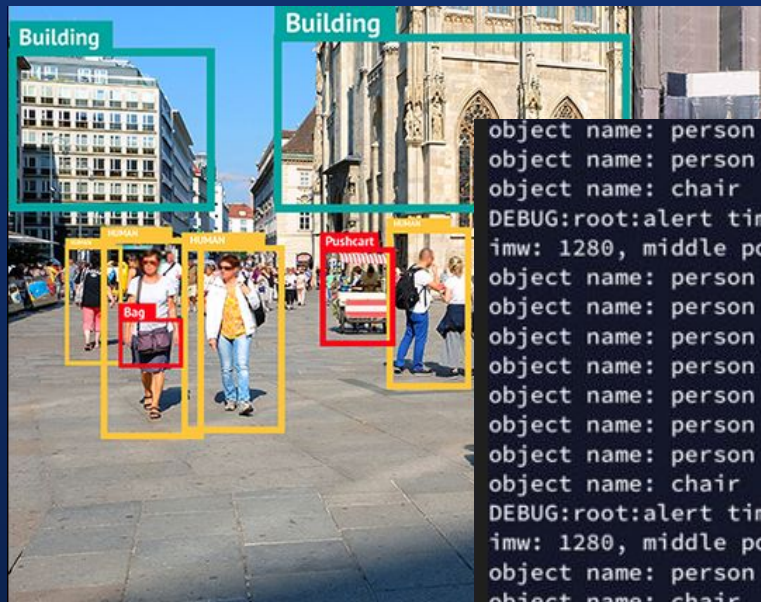
All in a single comfortable easy to use product.

# THE GOAL:

The ability to detect obstacles in a reliable and quick manner.

To inform the user of potential threats.

No Obstacle can go unnoticed.



Behind the scenes

```
object name: person
object name: person
object name: chair
DEBUG:root:alert time diff:1
imw: 1280, middle point: 794.5
object name: person
object name: person
object name: person
object name: person
object name: person
object name: person
object name: person
object name: chair
DEBUG:root:alert time diff:1
imw: 1280, middle point: 726.5
object name: person
object name: chair
DEBUG:root:alert time diff:2
imw: 1280, middle point: 729.0
object name: person
object name: chair
DEBUG:root:alert time diff:2
```

# Components



Raspberry Pi 4



Camera module



Python, C++



Opencv



Audio / Sensory  
Feedback



# OUR PROCESS

