WhyteSyght

By Psifrous

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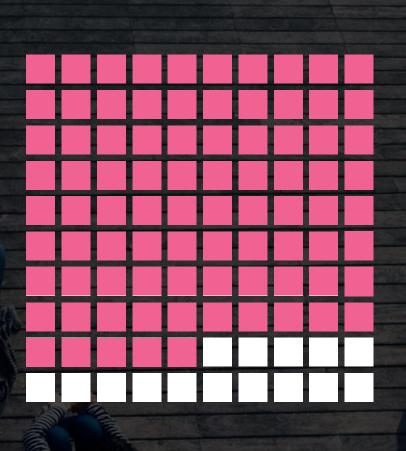
The problem

The visually challenged face problems in their day to day tasks.

To create a technological solution to ease away some of their problem.



260 million visually impaired people of 7.3 billion people





SOUND!

"Using computer vision to detect the surrounding environment and relay the same via sound"

How?

The different functionalities of our project

Scene Detection

Environment scanning for 90 common objects and people

Action Detection

Action recognition for the current frame

Support

Emergency support with live guidance from a third party

Whyte Syght

Hardware

Emergency / Live
Stream
Action Detection

Scene Detection =



Design and Implementation

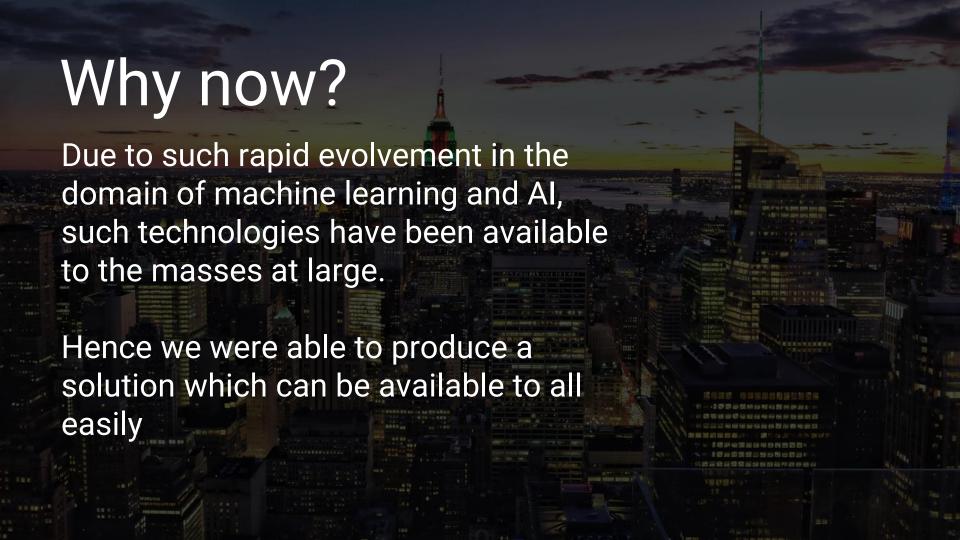
Input frames from headmounted camera

Detection of actions/objects using computer vision

Output in the form of speech

Technologies used

- Raspberry Pi
- Web Cam
- TensorFlow
- OpenCv
- Python 3.5



Challenges Faced

- Training action detection algorithm in a such a short time and getting its accuracy so that its usable
- Syncing hardware buttons with software so that a smooth process is enabled
- Keeping the product as simple as possible while not losing on any basics that
 is keeping the product simple so that it is easily used by a blind person and
 keeping features so that it helps him/her in his daily routine.

Contribution of each team member

- Ambuje Gupta: Using MQTT protocol to integrate physical buttons & setting up protocol for live stream using Nginx engine
- Harsh Kataria: Action Recognition using TensorFlow and OpenCV
- Naman Bansal: Scene Detection using TensorFlow and OpenCV