SMART EYE FOR VISUALLY DISABLED PEOPLE USING DEEP LEARNING

By

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INTRODUCTION

● **Text Reader -** When blind person wants to read some text, he/she has to click the image of the document using button in our device, and it will read the text in the image.

● **Facial Analysis -** When user wants to know the person in front of him/her, he has to click the image using our device and it will tell him the person's gender, predicted age of the person and person's sentiments in form of voice.

● **Object Detection -** If a blind person wants to know the objects around him/her, he/she has to click the image using our device and then it will tell him the list of objects in the image in form of voice.

● **Obstacle Detection -** Whenever any obstacle come in line of the blind person within the range of 50cms, our device will tell him "Obstacle Ahead" so that he can change his direction of motion.

● **Image Captioning -** Whenever a blind person clicks the image using our device, it will generate the total overview of the image in form of caption and will inform the user the caption generated.

● **Location Detector –** Whenever a blind person wants to know his/her current location, our device will provide the location in the form of address.

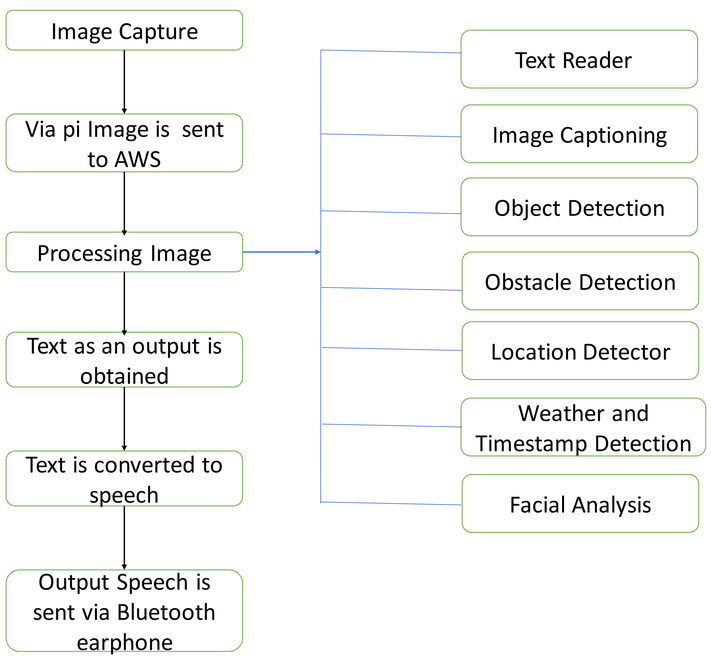
● **Weather and Timestamp detector -** Whenever a blind person wants to know the weather, time and date, our device will provide the same.

OBJECTIVE

- The Project aims at providing a Smart Eye for the visually disabled people using Deep Learning.
- With the help of modules listed below , our project makes the blind person more independent.

❑ Obstacle Detection
❑ Object Detection
❑ Facial Analysis
❑ Text Reader from Image
❑ Location Detector
❑ Weather, Date and Time Detection
❑ Image Captioning

FLOW CHART



RESULTS

- This device allows blind person to hear text from image just by clicking an image.
- It also makes the blind person know about surroundings through image captioning.
- The device helps the blind person to move safely on the streets through obstacle detection offered by this device.
- The Blind person could know the emotion of people nearby.
- It also helps the blind person to detect all the objects which are around him.

APPLICATIONS

- This device will help the blind person to read text from image. Ex- Menu Card, Notice Board.
- It will help to analysis people's gender, age, and facial emotions.
- The person can know real-time date, time, location and weather.
- The Device can detect the obstacles within 4m range and alarm the blind person .

CONCLUSION

- This project presents a smart guiding Device for visually impaired users, which can help the move safely and efficiently in environment.
- The Image Captioning module, Object Detection module, OCR module and Facial Analysis module of the project along with multi-sensor fusion based algorithms help them in recognising and analysing objects.
- In the proposed system, if developed with more accuracy, the blind people will be able to move from one place to another place without others help.