DEEP LIGHT- A Deep Network companion for the Visually Impaired

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Description of the problem

Creating a visually abled environment for the mass of visually impaired people has been a seemingly impossible task up until now. Perception and navigation through the several fast-moving and ever changing environment has been the unmanageable challenge for the researchers in the field. With the advancement and technological renaissance in Deep Learning and Computational ability in the recent times, it's our novel attempt at empowering the life of the visually abled.

Source of Data

Common Objects in Context Dataset (COCO). Large Scale Object Detection, Segmentation and Captioning Dataset with >200k labeled instances (Credits: Fei-Fei Li, Microsoft)

Methodology

1. Obstacle Detection:
   1.1. Propose a method for detection of obstacles in the individual's path, making sure of a smooth and safe commuting experience.
2. Object Detection:
   2.1. A feature which picks out and identifies objects from the environment thus, enabling the individuals in getting a description of it.
3. Text-to-Speech Document Reader
   3.1. Use OCR to retrieve text from documents and generate speech as an aide for the individual.

Output Description

Deep Learning based speech framework where the user gets information regarding obstacles, objects, navigation, texts on documents and such.