

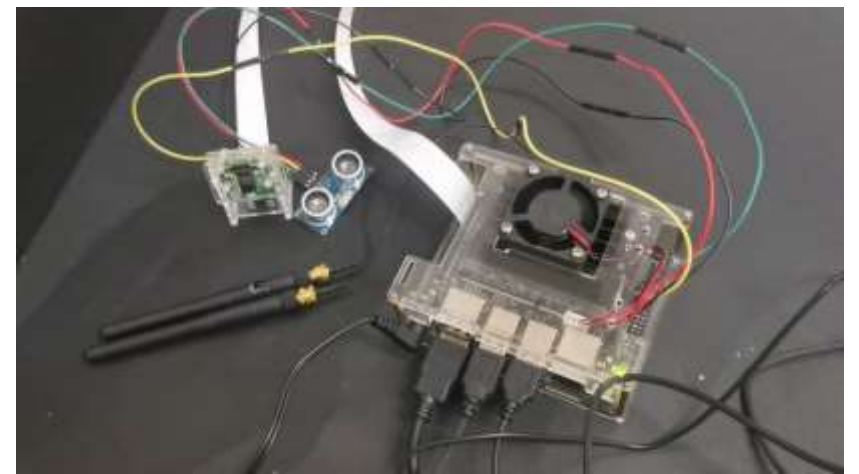
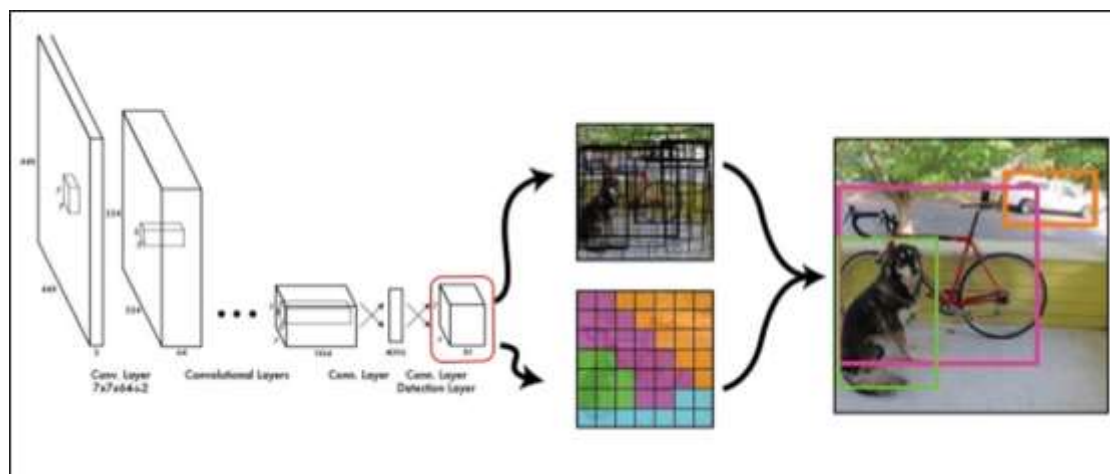
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## Product Background

Visual impairment is often defined as a best corrected visual acuity of worse than either 20/40 or 20/60. The term blindness is used for complete or nearly complete vision loss. Visual impairment may cause people difficulties with normal daily activities such as driving, reading, socializing and walking. Therefore, this project develops a smart object detection using deep learning algorithm and jetson nano to improve object detection for blind people. Furthermore, an ultrasonic sensor and sound notification are added to the project development to notify blind people if any object located nearest around them.

## Methodology

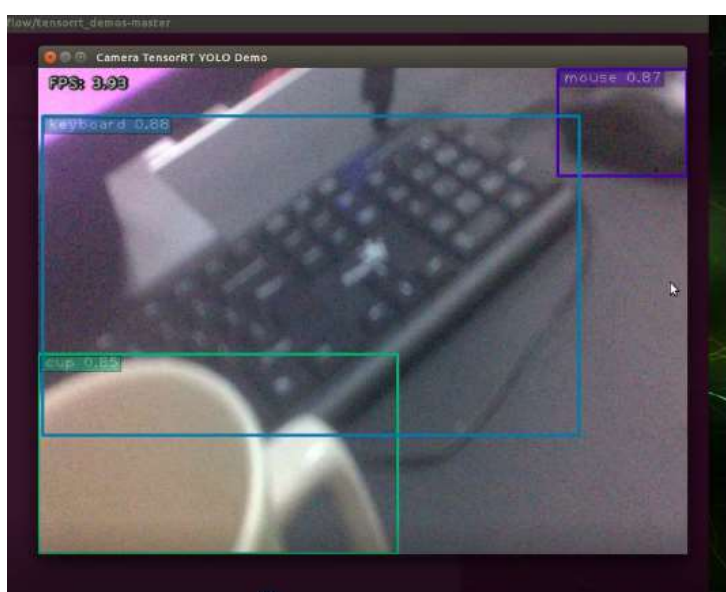


(a)

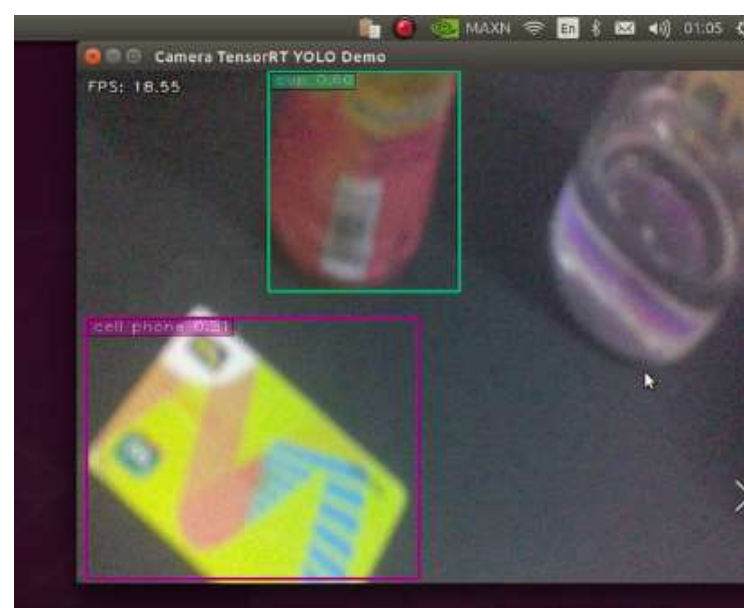
(b)

Figure 1. System framework. (a) Deep learning algorithm. (b) Jetson nano circuit diagram.

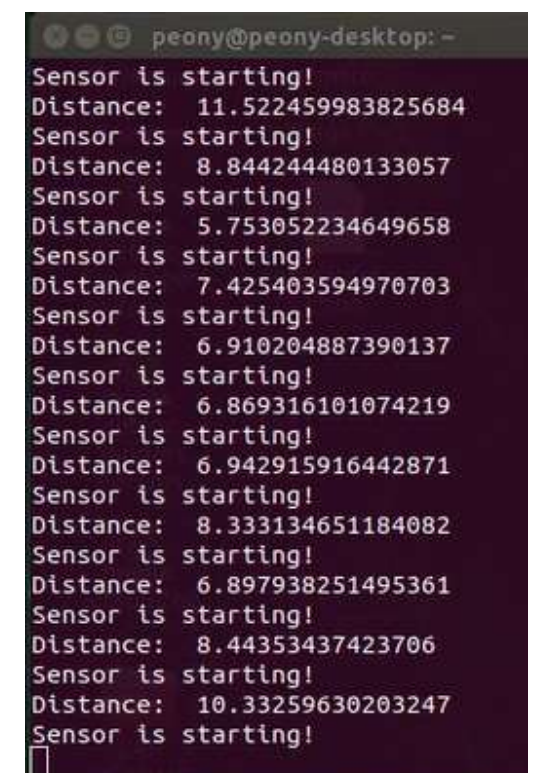
## Results



(a)



(b)



(c)

Figure 2. Results. (a) and (b) Object detection. (c) Ultrasonic sensor.

## Benefits

- Help user to detect different type of object using deep learning
- Alert user if any object located nearest them using ultrasonic sensor and sound notification

## Novelty

1. A combination of deep learning algorithm and jetson nano to detect the object
2. Object is detected based on different type and distance
3. Alert notification via sound notification in Jetson nano