IBM-NALAIYA THIRAN PROJECT

PANIMALAR ENGINEERING COLLEGE

ELECTRONICS AND COMMUNICATION ENGINEERING

TITLE : REAL-TIME COMMUNICATION SYSTEM POWERED BY AI FOR SPECIALLY ABLED

PROJECT TOPIC: OBJECT DETECTION AND TRANSLATION FOR BLIND PEOPLES USING AI

DOMAIN NAME: ARTIFICIAL INTELLIGENCE

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ABSRACT:

Good vision is a precious gift but unfortunately loss of vision is becoming common now a days. To help the blind people the visual world has to be transformed into the audio world with the potential to inform them about objects as well as their spatial locations. Objects detected from the scene are represented by their names and converted to speech.

INTRODUCTION:

Millions of people live in this world who can't see environment due to visual impairment. Although they can develop alternative approaches to deal with daily routines, but sometimes there are from certain objects they just can't tell without feel of

touch A variety of object is processing and machine learning techniques have been applied to the problem, including matrix factorization, dictionary learning and most recently mask region Convolution neural networks (MASK RCNN). In particular, mask region Convolution neural network (MASK RCNN) are, in principle, very well suited to the problem of object detection and recognition First, it generates proposals about the regions where there might be an object based on the input image. Second, it predicts the class-id of the object and define a bounding box and generates a mask at pixel level of the object based on the first stage proposal
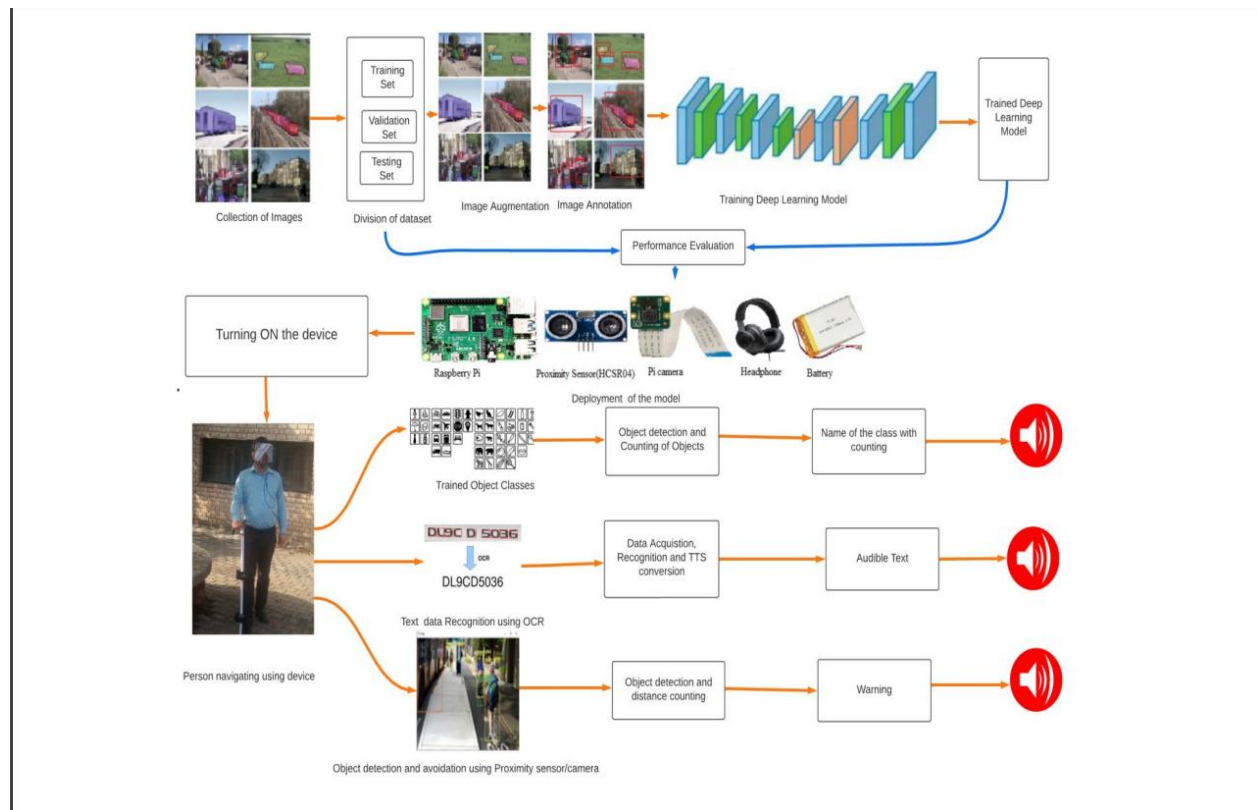
LITERATURE SURVEY:

1. PROF. SEEMA UDGIRKAR, SHIVAJI SAROKAR, SUJIT GORE, DINESH KAKUSTE, SURAJ CHASKAR, "OBJECT DETECTION SYSTEM FOR BLIND PEOPLE"

This project is used to design a navigate blind person in any environment and it guides the user about that object and provide information about that obstacle using buzzer and vibrater as a two-output mode of the user. User control mode include switch that allows the user to choose project mode of operation. There are of two mode of operation first is buzzer mode and second is vibration mode these mode are provided as an output for a blind person ,mode are used because user might not be comfortable with one of these mode.

2. SARANYA, M. NANDINIPRIYA, U. PRIYA, "REAL TIME OBJECT DETECTION FOR BLIND PEOPLE"

In these paper author clearly explained us about object detection from the image and represented it by their name and speech. And it also helps the blind people in location and encoded the audio into 2 channel audios with the help of 3D binaural sound. In these a video is capture with portable camera device from client side and it is streamed to a server for real time image recognition with object detection. which mean it identify and follow the same object in sequence of video frames sometimes video may have some noise. to remove that noise from frames noise reduction technique is used that improve the image quality and extraction of object frame is used to detected the object based on color of the moving frame

Collection of Images · Division of dataset · Image Augmentation · Image Annotation · Training Deep Learning Model · Trained Deep Learning Model · Performance Evaluation · Turning ON the device · Raspberry Pi · Proximity Sensor(HCSR04) · Pi camera · Headphone · Battery · Deployment of the model · Trained Object Classes · Object detection and Counting of Objects · Name of the class with counting · Person navigating using device · DL9CD5036 · Text data Recognition using OCR · Data Acquisition, Recognition and TTS conversion · Audible Text · Object detection and distance counting · Warning · Object detection and avoidance using Proximity sensor/camera

REFERENCES:

1. Facebook AI Research (FAIR), Kaiming He Georgia Gkioxari Piotr Dollar Ross.

2. Prof. Seema Udgirkar, Shivaji Sarokar, Sujit Gore, Dinesh Kakuste, Suraj Chaskar, Object Detection System for Blind People.

3. Object Detection Using Adaptive Mask RCNN in Optical Remote Sensing Images, Amira S. Mahmoud, Sayed A. Mohamed1 Reda A. El-Khoribi2 Hisham M. AbdelSalam.

4. Real Time Object Detection for Blind People, N.Saranya , M.Nandinipriya , U.Priya

5. Convolutional Neural Network for Object Detection System for Blind People, Y.C. Wong, J.A. Lai, S.S.S. Ranjit, A.R. Syafeeza, N. A. Hamid [6] Object Detection and Recognition for Visually Impaired People, Shuihua Wang