# Fruits and Vegetables detection for blind people

[1]Arudra Sandeep Kumar, [2]Penumaka Mohana Venkatesh, [3]Satharu Sai Siva Sudharshan Reddy, [4]Shaik Nagul Sharif, [5]Shaik Sayeed-Uz-Zama
[1]*Assistant Professor, KKR & KSR Institute of Technology and Sciences, Guntur, AP, India*
[2,3,4,5] *B. Tech (CSE), KKR & KSR Institute of Technology and Sciences, Guntur, AP, India*

***Abstract*— While purchasing the things from the shop the customers want to know completely about the goods. Similarly, while purchasing the fruits and vegetables the customer needs to know about the fruits and vegetables. For the visually impaired persons the purchasing of goods and vegetables is difficult without vision. So, it is difficult to detect by sensing the touch. We have designed an app to help the blind people to detect the fruits and vegetables. We are using the multi-class classification to detect fruits and vegetables. The visibility of fruits and vegetables are taken through the phone camera then it is classified by training the images of fruits and vegetables.**

## INTRODUCTION

While purchasing any item from the shop the consumer will check each item and he/she will try to acquire entire information. Similarly at the time of purchasing the fruits and vegetables the customer also needs to know about them. This will make them to get right item from the shop. But it is difficult for the blind people to know which item they are purchasing so, we going to help them by designing an app which will assist them and help in identifying the item. Our app will help the blind in identifying which fruit/vegetable they are going to purchase.

## LITERATURE RIVIEW

The proposed system is an app which is going to help the blind people by detecting the fruits and vegetables that they are going to purchase. This app is going to take the image of fruits and vegetables they are going to purchase and it detects which fruit or vegetable they are going to purchase.

## EXISTING SYSTEM

Google lens is an existing app which takes or captures the photo and it retrieves the information from Google search machine. This app provides the related information in the text format. Google lens app is one of the apps provided by the google. This app provides related information related to text in the image.

## PROPOSED SYSTEM

Initially at the time of app installation the smartphone is trained with the fruits and vegetables images dataset by using machine learning. Which will be further used in the detection of fruits and vegetables. The proposed system mainly focuses on fruits and vegetables which are going to purchase by the blind people and going to help them in detecting which fruit / vegetable they are going to purchase. This app will work in offline mode also which is a major advantage of this app as network coverage is not possible at all places this will work at all places where there is no network also.

## ADVANTAGES

1. Network Independent:
Since the codes are not delivered over the mobile network, hackers can't intercept the codes that way. The result is that even if they were to reroute your number, they still wouldn't receive the codes.
2. Explore quickly:
Major benefit of app is that their algorithm works faster with minimum time complexity.
3. Reliable:
This app can work with improper images and in offline mode.

## MODULES

1. Training the machine with images dataset:
While installing the app the machine (Smartphone) is trained with the numerous images of fruits and

vegetables which are further referred for the case of classification.

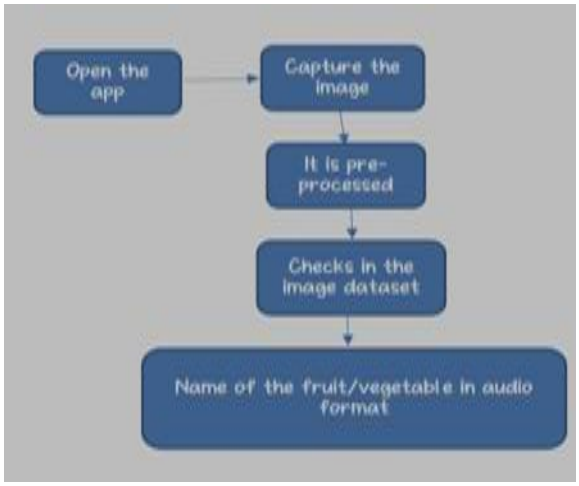
2. Capturing image of object:

So, when the user enters the shop the shop to buy fruits or vegetable he/she needs to take image of the object by using his/her Smartphone in the design App.

3. Detection of the object:

The user will get the output in the audio format about the fruit and vegetable which the user is going to buy.

ARICHITECTURE DESIGN




CONCLUSION

We have designed an app for blind people to fruits and vegetables while purchasing by machine learning. We have used multi-class classification technique in detecting the fruit or vegetable. We have used random forest algorithm of multi-class classification. There is no need of the special hardware for our application. The images are captured by the smartphone camera. The smartphone is trained by machine learning at the time of installation so that it can be used in offline also. The pyttsx module is used for producing voice of the name of detected object. The output is through the smartphone speaker.

REFERENCE

[1] https://towardsdatascience.com/multi-class-text-classification-with-scikit-learn

[2] https://www.simplilearn.com/10-algorithms-machine-learning-engineers-need-to-know-article