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An Implementation on Flower Recognition System using Image Processing Techniques

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ABSTRACT Flower is a very important part of nature. Mostly we identify a plant through its flower. Experienced botanists do this identification of flower but a naive person will have to consult flower guidebooks or browse any relevant web pages on the Internet through keywords searching. Our system can recognize the flower in real time using mobile camera. We are continuously working to add more flowers to identify. Every day, we see a huge number of flower species in our house, parks, roadsides, in farms, on our rooftop but we have no knowledge of that flower species or their origin. Even we have no idea about its name. There are several guidebooks for flowers knowledge but it becomes quite difficult to find the name when have the picture. Even the Internet sometimes is not useful. But it is quite difficult for human brain to memorize all the species they see. Even some flower is similar to look at. This application recognizes the flower in real time by using mobile camera. The purpose of this project is to use Tensor flow, an open-source dataflow and image processing, to build an image classifying Convolutional Neural Network (CNN) for classifying the flower image. Tensor flow, in addition to providing developers a simple way to build neural network layers, can also be run on mobile platforms such as Android. The ultimate goal of this project is to design and optimize a convolutional neural network for use with flower classification, and eventually build a simple classification app for mobile devices around the trained network.

KEYWORDS: Flower recognition, flower detection, image processing, convolution neural network.

I. INTRODUCTION

Flower is a very important part of nature. Mostly we identify a plant through its flower. Experienced botanists do this identification of flower but a naive person will have to consult flower guidebooks or browse any relevant web pages on the Internet through keywords searching.

Our system can recognizes the flower in real time using mobile camera. We are continuously working to add more flowers to identify. Everyday we see a huge number of flower species in our house, parks, roadsides, in farms, on our rooftop but we have no knowledge of that flower species or their origin. Even we have no idea about its name.

There are several guidebooks for flowers knowledge but it becomes quite difficult to find the name when have the picture. Even the Internet sometimes is not useful. But it is quite difficult for human brain to memorize all the species they see. Even some flower is similar to look at.

This application recognizes the flower in real time by using mobile camera. The purpose of this project is to use Tensorflow, an open-source dataflow and image processing, to build an image classifying Convolutional Neural Network (CNN) for classifying the flower image. Tensorflow, in addition to providing developers a simple way to build neural network layers, can also be run on mobile platforms such as Android.

The ultimate goal of this project is to design and optimize a convolutional neural network for use with flower classification, and eventually build a simple classification app for mobile devices around the trained network.

II. PROBLEM STATEMENT

Duplicate flower identification is the main challenge of our project. Some flowers are same to look at by size and shape. That time it is so tough to provide the accurate result.



Another challenge is to identify same flower of different specific color. Ex- White Rose, Pink Rose. This is a tough work to identify color using convolutional neural network.

Other challenge is achieving accurate data. In the market of false and duplicate data, it is very hard to get all of the things right.

Goal and Objectives:

1. Improved CNN design. There much more research and practice is needed to optimize the design.
2. Improve the dataset and add more data.
3. Specific Identification of duplicate flower which is same to look at.

Statement of scope

The main function of the project is it recognizes the flower in real time by using mobile camera. Everyday we see a huge number of flower species in our house, parks, roadsides, in farms, on our rooftop but we have no knowledge of that flower species or their origin. Even we have no idea about its name. There are several guidebooks for flowers knowledge but it becomes quite difficult to find the name when have the picture. Even the Internet sometimes is not useful. But it is quite difficult for human brain to memorize all the species they see.

Software context

To develop this application we will require Python as development language.. All this software's are available on internet and they are free of cost.

III. RELATED WORK

Flower identification and classification is represented the process is started with image pre-processing step with image resizing, noise filtering and RGB and Greyscale conversion. Afterwards, image segmentation is completed. After performing segmentation, the features are take out from segmented image including basic and morphology features of flowers. The outcome of data pre-processing, segmentation and feature extraction is the final training data set that is used during model building phase In model building phase,a model builds and tests by applying appropriate image processing method on training data set. The dataset containing training examples is considered as an input for the model building phase. It is generally divided into three categories: training, validation, and testing. After a model has been trained and tested, it is able to identify and classify a flower image and generates the predicted output.

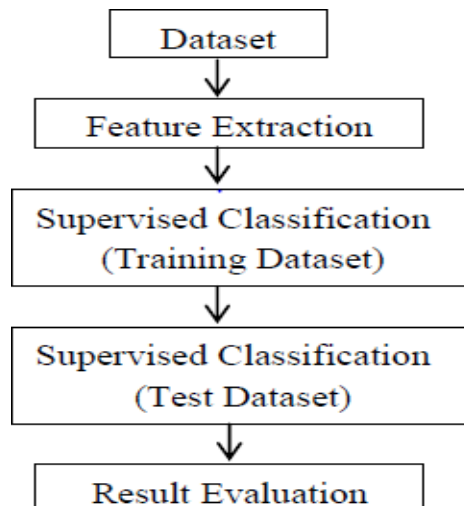


Fig. 1: System Flow

Here as described in the figure above, the proposed system will have an input from the dataset which will be extracted featured wise and Classified underneath. The classification technique used is supervised and the various techniques of machine level algorithms are implemented on the same. Training Dataset are created for training the machine and the test cases are derived and implemented to carry out the visualization and the plotting's. The result generated are passed and visualized in the graphical form.

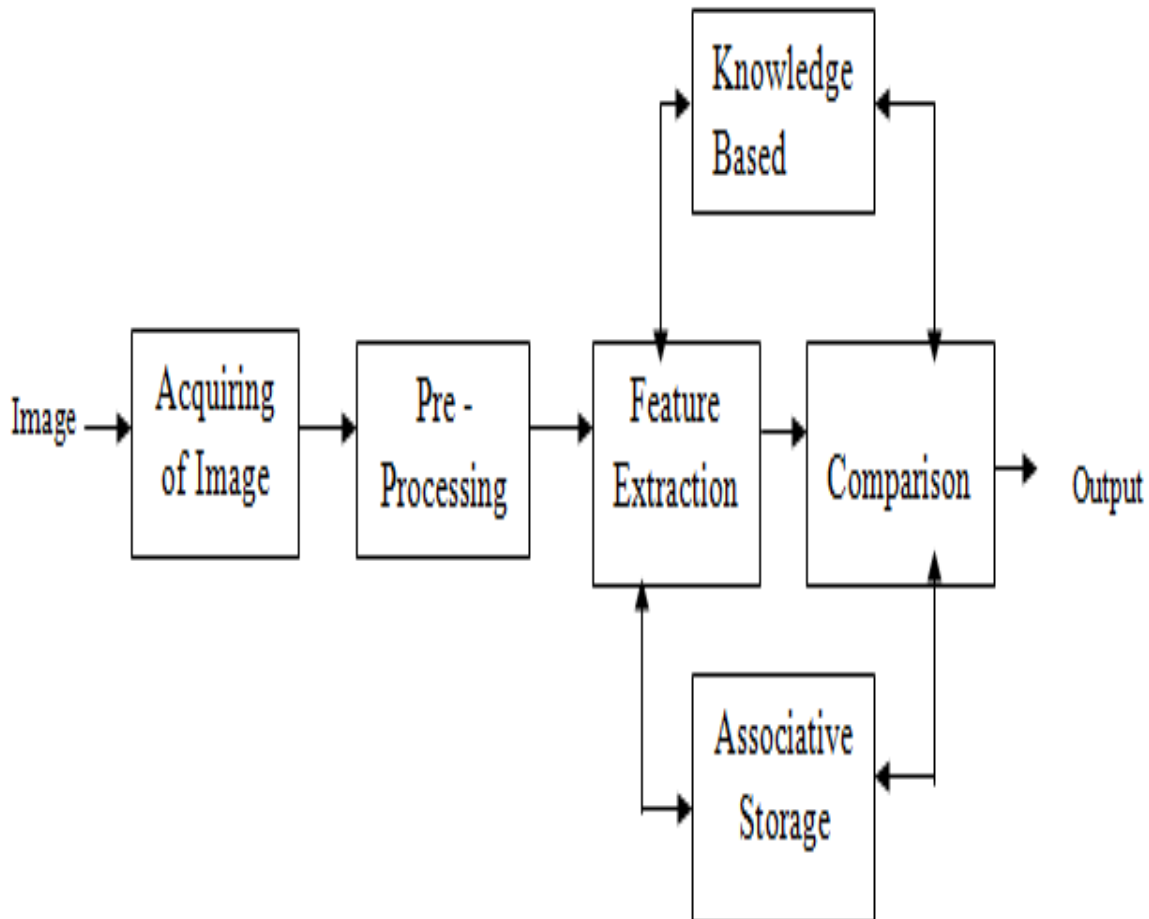


Fig 2: Working of Image Processing Domain

IV. PROJECT PURPOSE

There are almost 250,000 named species of flowering plants within the world. Several blooming flowers are often discovered within the garden, park, roadside, and plenty of alternative locations, and identification of flowers are often done solely by taxonomists or botanists. **The general public does not have any data regarding to these flowers and so as they mainly use flowers guide books or use the relevant websites to have the related information.**

It is very important to identify naturally occurring objects and recognize its type. It is useful to identify flower type in various fields such as gardening, botany research, Ayurveda, treatment, farming, Floriculture etc.



V. EXPERIMENTAL RESULT

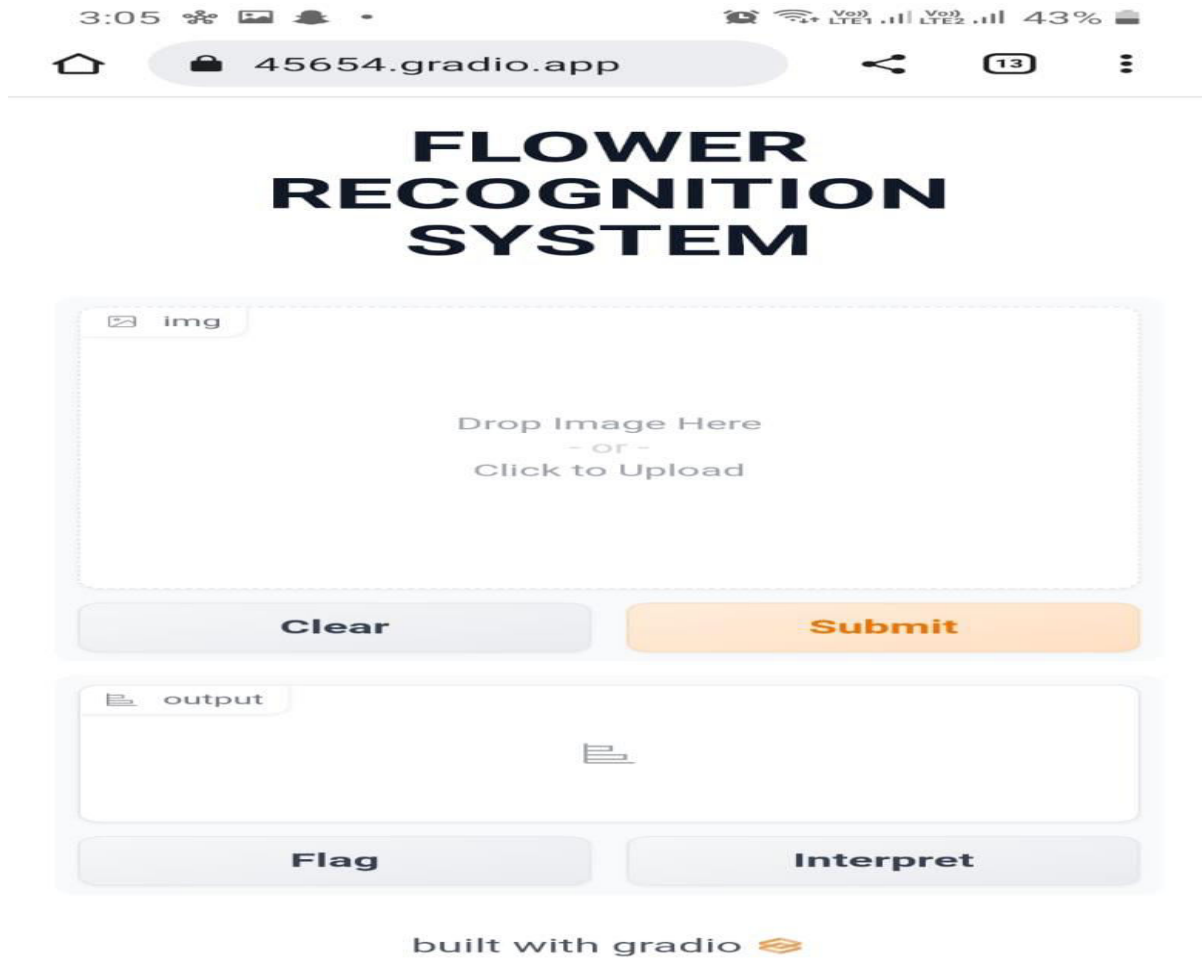


Fig 3:Output of Flower Recognition System

Example



Fig 4: Image of Daisy Flower



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FLOWER RECOGNITION SYSTEM

img



Clear Submit

output

Daisy: Originated-Europe and temperate regions of asia Medical uses-People take daisy tea for coughs, bronchitis, disorders of the liver and kidneys, and swelling, inflammation.

Fig:5: Output displayed after Recognizing Flower

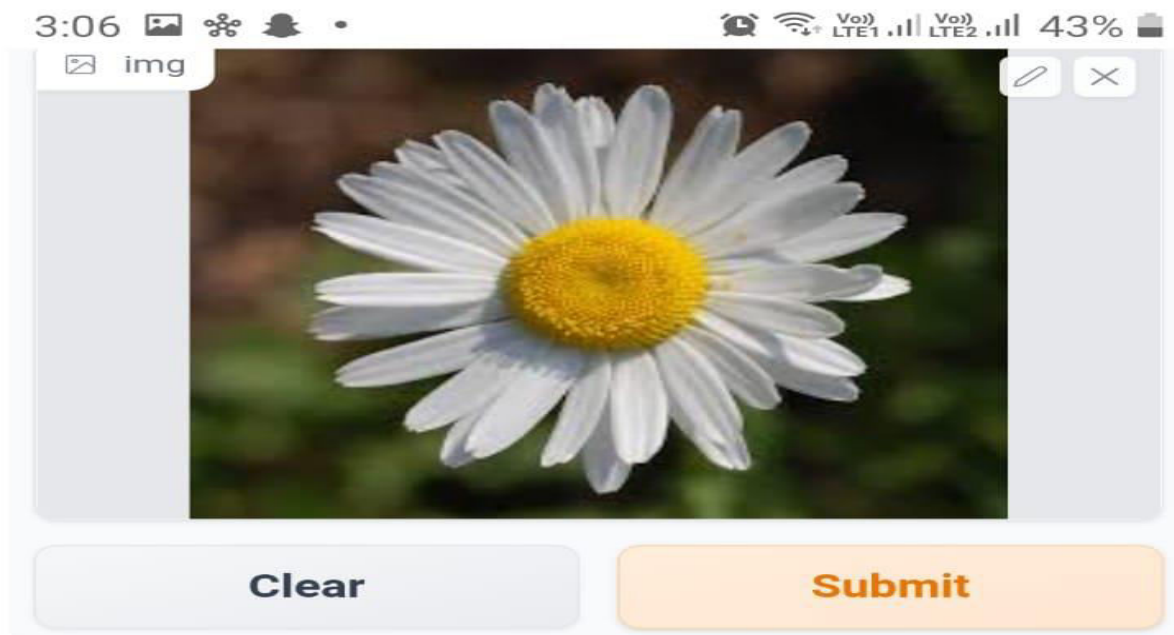


Fig:6 Ouput



VI. FUTURE SCOPE

The main function of the project is it recognizes the flower in real time by using mobile camera. Everyday we see a huge number of flower species in our house, parks, roadsides, in farms, on our rooftop but we have no knowledge of that flower species or their origin. Even we have no idea about its name. There are several guidebooks for flowers knowledge but it becomes quite difficult to find the name when have the picture. Even the Internet sometimes is not useful. But it is quite difficult for human brain to memorize all the species they see.

- Scientist or Botanist

This research and project will be helpful for botanists or biologists, although any scientist would likely wish to use their unique dataset. The project would most likely be useful to scientists for classifying large amounts of data and generating statistics for the dataset. Using our Android application Botanists or other scientists dealing with flowers to identify easily.

- Traveler or Nature Enthusiasts

Our developed project will be much helpful while spending time outdoors to identify flowers by a mobile application. This application works completely in offline which use mobile camera to identify flowers. It will be really helpful for Traveler, Hiker and Nature Enthusiasts

VII. CONCLUSION

Flower Recognition System, is the identification and classification of flower images with its species is discussed. A dataset is accumulated that contains flower images of classes. Basic and morphology features of flower images are extracted using image pre-processing and image segmentation methods. It is helpful for the non-botanist's to classify different flower species easily, and the process becomes very fast, helping them in further research and study. It is observed the proposed approach achieved relatively a good classification accuracy with optimum possible extracted features.

REFERENCES

- [1] Fadzilah Siraj, Muhammad Ashraq Salahuddin and Shahrul Azmi Mohd Yusof ,”Digital Image Classification for Malaysan Blooming Flower” IEEE-2010.
- [2] Pavan Kumar Mishral, Sanjay Kumar Maurya², Ravindra Kumar Singh³, Arun Kumar Misral “A semi automatic plant identification based on digital leaf and flower Images” IEEE-2012.
- [3] Tanakorn Tiay, Pipimphorn Benyaphaichit, and Panomkhawn Riyamongkol ”Flower Recognition System Based on Image Processing” ICT-ISPC-2014..
- [4] Prof.Suvarna Nandyal, Miss.Supriya Bagewadi, “Automated Identification of Plant Species from Images of Leaves and Flowers used in the Diagnosis of Arthritis” IJREAT-Volume 1, Issue 5, OctNov, 2013.
- [5]Yuita Arum Sari and Nanik Suciati,“Flower classification using combined a*b*color and Fractal-based Texture feature”, International Journal of Hybrid Information Technology Vol.7, No.2 (2014).
- [6] M. Z. Rashad¹ , B.S.el-Desouky² , and Manal S .Khawasik, “Plants Images Classification Based on Textural Features using Combined Classifier”, (IJCSIT) Vol 3, No 4, August 2011
- [7] Mari Partio, Bogdan Cramariuc, Moncef Gabbouj, and Ari Visa, ”Rock Texture retrieval using gray level co-occurrence Matrix” ,(ITS) Surabaya, Indonesia.
- [8] Dr.S.M.Mukane and Ms.J.A.Kendule, “Flower Classification Using Neural Network Based Image Processing” IOSR-JECE Volume 7, Issue 3,Sep. - Oct. 2013.



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