FLOWER IDENTIFICATION SYSTEM

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Abstract - *Flower Species recognition has been a major field in image processing. Recognition fails many times the reason behind this is lack of knowledge about flowers among the normal ones. Machine learning has been used to create automated system which helps even common man to identify flowers around them. The main goal is to extract certain features from the input image by applying different techniques like CNN, Tensorflow library and AWS web service in order to classify image. In this paper, it is analyzed that flowers recognition have given success rate using machine learning.*

Key Words: *Machine Learning, CNN, Tensorflow, AWS.*

1. INTRODUCTION

Machine learning in the field of artificial intelligence has given the field of smart devices a way to recognize the items in an efficient way. The use of the Machine learning has ces has the machine learning. The use of the neural network have been developed in 1959 by Arthur Samuel. It uses the data which has been learned in the previous field. The use of the pass data is used to predict the future. The data mining is a core concept in the machine learning. The learning phase has allowed the next stage to collect and predict the next stages. The flower recognition has used the machine learning concept in this work. A flower is used with the intention of maintaining good environment, to be administered for a specific condition. Our ancestors had enough knowledge about flowers, so they could identify them very easily. But now days it is too difficult for a common man to identify flower which are available around him. So, in this paper AWS approach is used to make common man to identify and recognize flower. Flower classification can be done based on various features like its color, texture and shape. But in our paper we have considered flower's color and shape by using the machine learning. The images are initially trained to get the image properties. The image properties are later used for the recognition.

Fig 1.1: Sample flower images

1.1 INTRODUCTION TO TENSORFLOW

TensorFlow is an end-to-end is an open source model in machine learning. The library and the community based resource are also included in the machine learning for the tensor flow. The hierarchy of TensorFlow tool kits can be shown as follows:
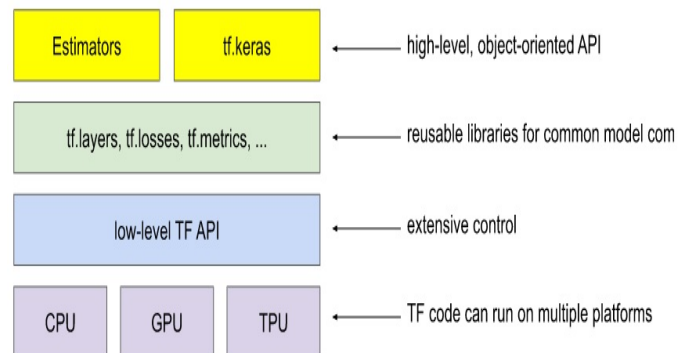

Fig 1.1: Tensor flow toolkit hierarchy

1.2 INTRODUCTION TO AWS

Amazon Web Services(AWS) is a cloud service supported and developed by the amazon. The use of the cloud based assistant has provided the user to collect, store and retrieve the data from the web service in the Amazon commerce.

The domains widely used are for the :

- Compute

- Storage

- Database

- Migration

- Network and Content Delivery

- Management Tools

- Security & Identity Compliance

- Messaging

- Machine Learning

1.3 OBJECTIVES OF THE STUDY

The objectives for the project are as follows:

- To identify flowers.

- To provide the flower identification guide.

- To learn about flowers.

- To learn about the flowers in their premises.

1.4 EXISTING SYSTEM

Many of the techniques have proposed for the detection classification of the flowers type by using the image processing techniques like Histo equalization MRF based image segmentation, ICA or texture analysis, Atmospheric model based manual monitoring, Contrast limited adaptive histo methods etc. The existing systems which have been proposed in the past also been achieving significant amount of success over managing the crop leaves by keeping the proper track on the leaves manually and also by technology.

1.5 PROPOSED SYSTEM

In this work we have proposed the system for flower detection by using machine learning in the cloud environment of tensorflow in amazon web services. The use of the proposed work has enabled the use of the mobile devices on line to detect and classify the flower image by using the image processing methodologies.
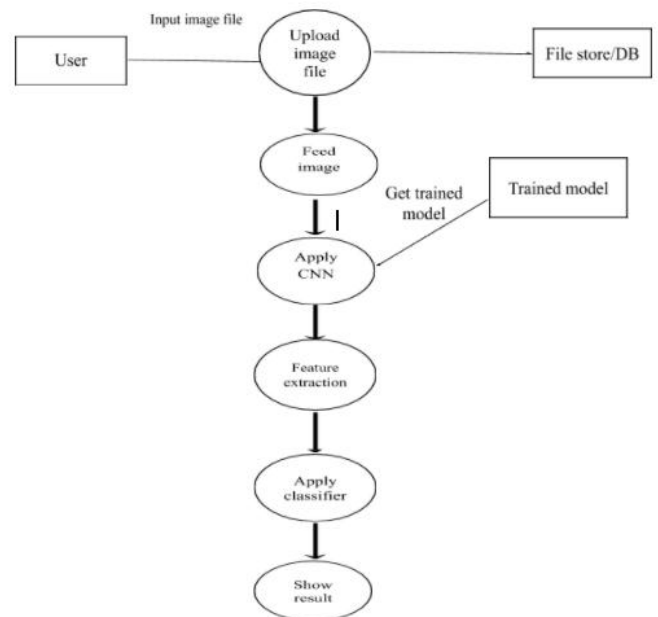

Fig 1.5 Flow diagram of flower species
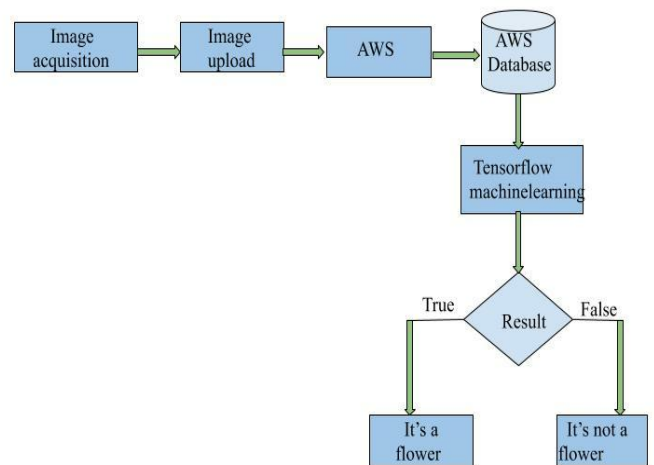
2. SYSTEM ARCHITECTURE

Fig: 2 Flower Species Identification System Architecture

- Image acquisition: it is the process of acquiring the images from the dataset based on the image. In this we have used the flower images dataset for extracting the images.

- Image uploading: the image from the data source in the hard disk has been used to upload the image to the server. The image is processed in the amazon web cloud to access the image at a remote location.

- AWS: amazon web services has been the most famously used cloud service. The image is loaded in the amazon cloud. The web service has allowed the user to interact with the system in a remote location.

- Database: the use of the dataset for the flower images has been proposed, the sore and trained dataset has been used in the work

- TensorFlow: it is the end-to-end an open source model in machine learning. The library and the community based resources have machine learning. The online database is supported by using the tensor flow set in the online services. AWS allows the database to flow on the server. The use of the neural network is also included in the machine learning for the tensor flow.

- Neural network: In the final images for the classification is passed based on the features. Neural network is a neuron based in a feed forward network. The systems used for the classification of the dataset based on the previous data. The image properties are classified by using the neurons developed in the image processing methods. The flower images are passed in the system to classify based on the image features.

3. IMPLEMENTATION

In the proposed work we have used the web page for the identification of the flowers.

Use of the tensor flow library, aws, neural networks for the flower identification with the help of machine learning has been used for the detection of the flower or not.

The amazon web service in the open cloud(public cloud) has been used in the Caltech-UCSD flower 200 (CUB-200). It has the dataset of the 200 flower images. Around the 11,788 annotated images which are used in the segmentation, bounding box, and the binary attributes of the flower image annotations.

The images are captured in the natural habitat and hence the use of the 200 images in the training of the flower images. The images are features extracted and stored in the tensor flow to detect the flower. The use fo eth neurons in the ANN will help to classify the features in the website.

The standard dataset of the Caltech UCSD will be used in to score or percentage is generated. Each neuron in the ANN will form the layer for the tensorflow which will pass the data to the AWS for the flower identification; the result is displayed to the user based on the requirement.
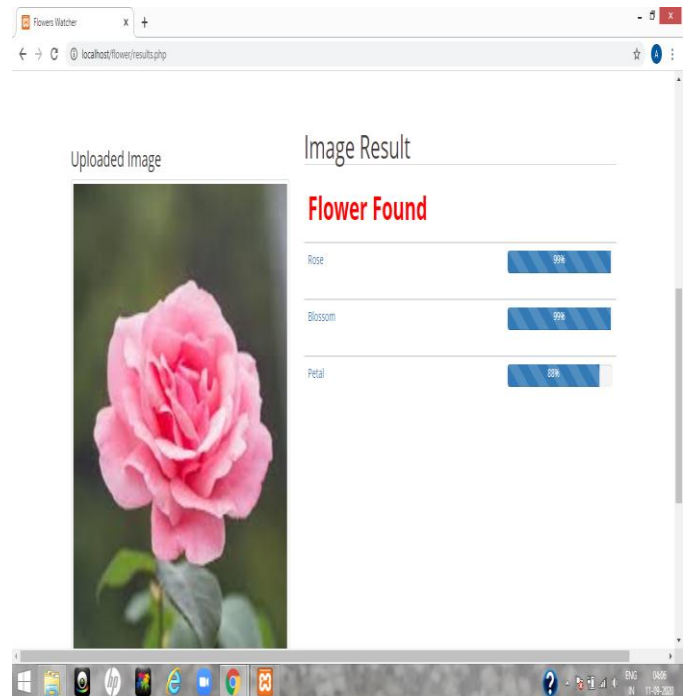
4. RESULT

Fig 4.1: Shows the results of the file uploaded, with its species name and its confidence (percentage)
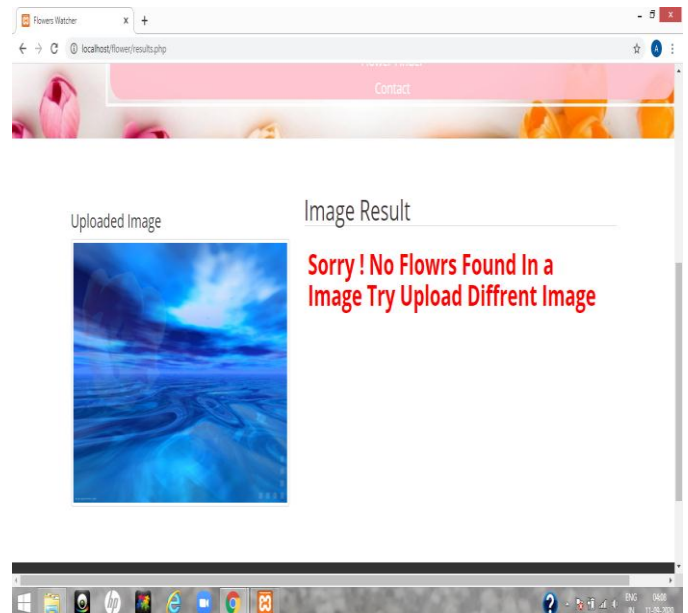

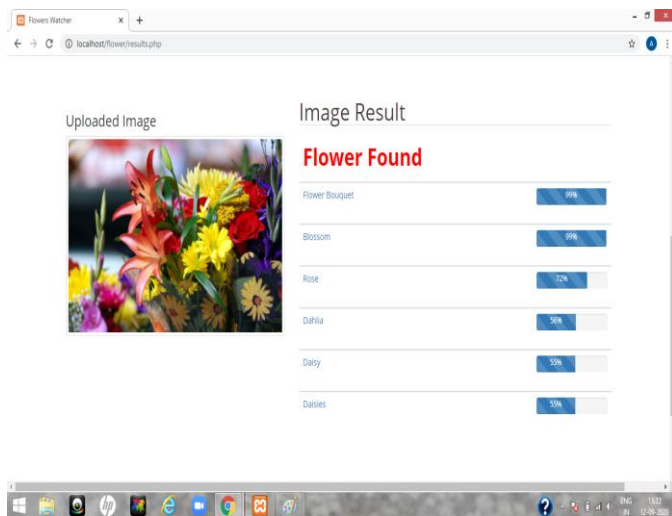**Fig 4.2: Displays the result as no bird found because the uploaded image is not a bird**

Fig 4.3: Result when more number of flowers

5. CONCLUSION

The proposed work has given the online solution for the recognition of the flower images based on the features. The AWS cloud and tensor flow with the help of the ANN has given the efficient results. The flower type is obtained based on the restored dataset. The images will be processed on the image and the result in stored in the dataset.

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