

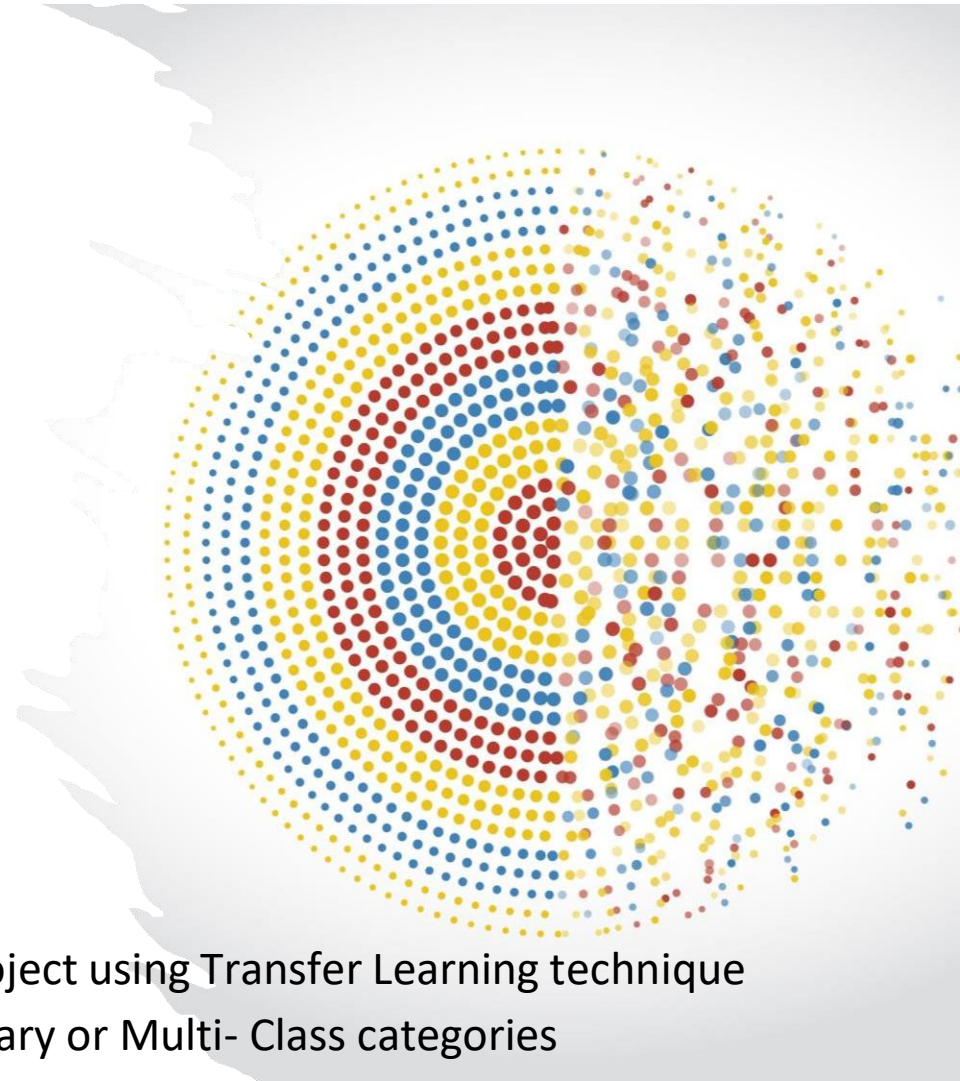
# Major Project Image Classification using Transfer Learning

Go through the project mentioned  
below which is built using traditional  
Machine Learning

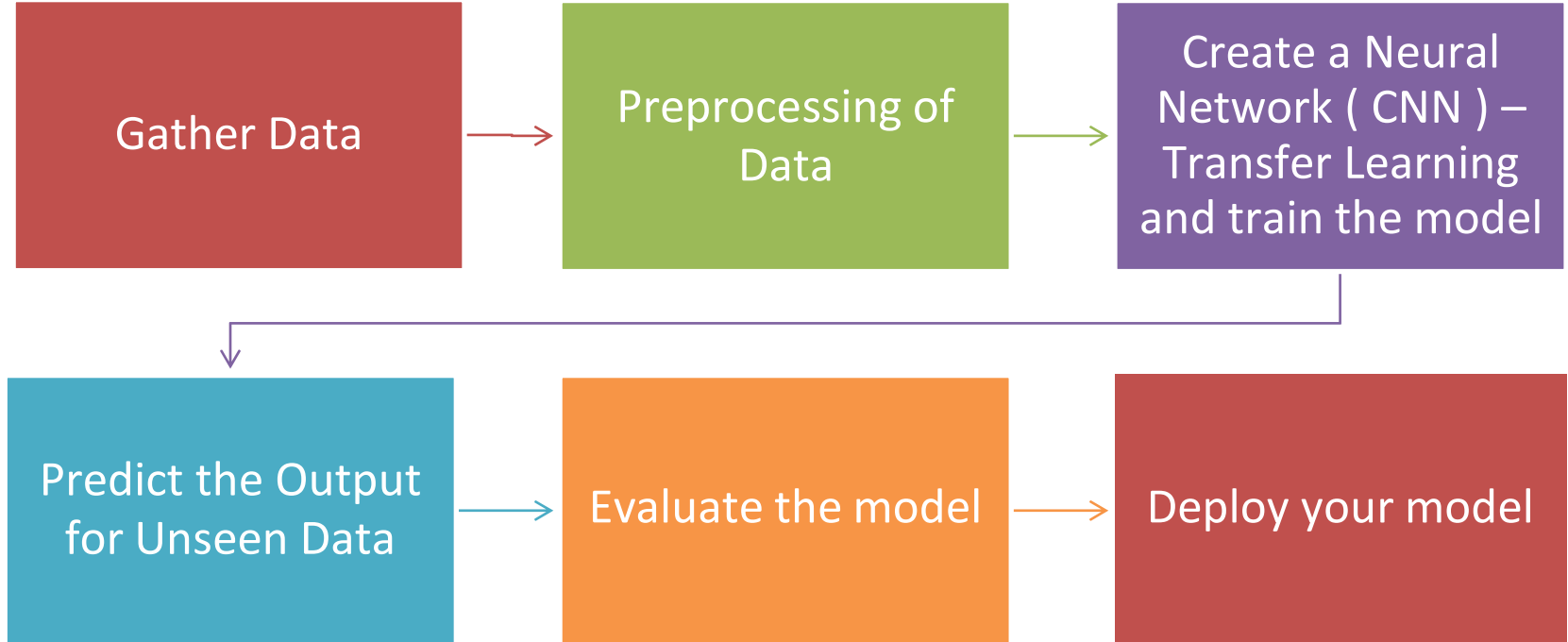
Reference :

[https://youtu.be/dw96S\\_iFFbl](https://youtu.be/dw96S_iFFbl)

On the similar note, create a project using Transfer Learning technique  
Project can be for Binary or Multi- Class categories




# Project Steps



# How to get Data?

- From Webcam take frames ( Opencv )
- From Google, Bing, Flickr scrape Images
- From Kaggle, download Dataset
  - Cats and Dogs
  - Humans and Horses
  - Plant Disease Detection etc



# How to download and store Image?

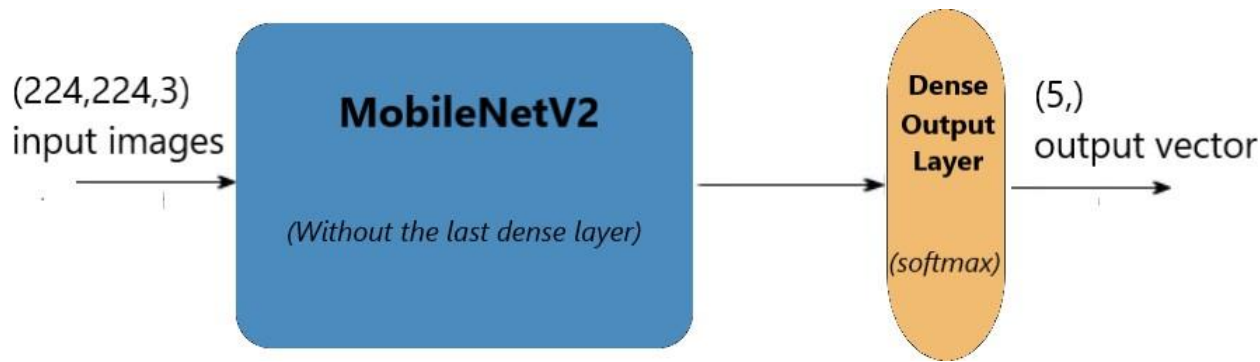
1. Bing Image Downloader  
(<https://pypi.org/project/bing-image-downloader/>)  
(<https://www.youtube.com/watch?v=solASfMs89Q&t=194s> )
2. Flickr API – Ultralytics  
([https://github.com/ultralytics/flickr\\_scraper](https://github.com/ultralytics/flickr_scraper) )
3. Imageye Plug-in from  
Chrome(RECOMMENDED)

# Transfer Learning

- <https://keras.io/api/applications/>

# create the base pre-trained model with the below code

```
base_model = MobileNetV2(weights='imagenet', include_top=False)
```



# How to freeze all the weights?

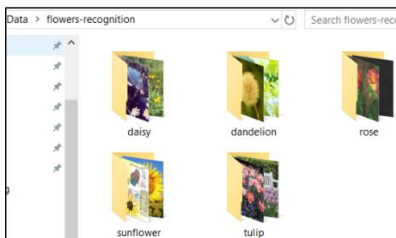
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A Keras `Model` is trainable by default - you have two means of freezing all the weights:

1. `model.trainable = False` *before* compiling the model
2. `for layer in model.layers: layer.trainable = False` - works before & after compiling

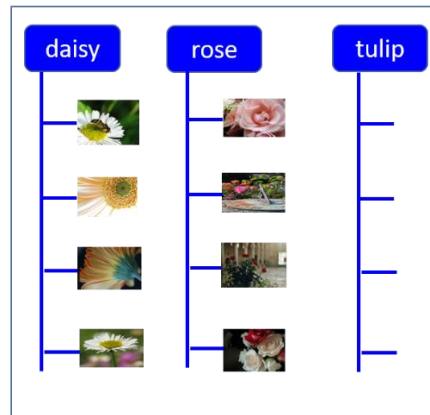
# Image Data Generator

Image files on disk



`ImageDataGenerator  
.flow_from_directory()`

In-memory data structure





## Deployment ( Use any one of the Below)

- Webpage – Flask/Django | HTML, JS, CSS
- Web App – Streamlit(Recommended)
- Mobile App ( Tensorflow Lite) / ( Java/Kotlin/Flutter)



# What to Submit?



Google Colab  
Notebook



Dataset Link



Saved model file  
after training

How to submit?

Mail the files to  
[event@smartknower.com](mailto:event@smartknower.com)





When to Submit?

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15 Days after Last Live Session