Mini Project

Image Classification using Machine Learning

https://www.youtube.com/watch?v=dw96S_iFFbI&t=7346s

Steps in Project

1. Gather Data
2. Preprocess data
3. Apply any classification Algorithm with best parameters using GridSearch CV
4. Evaluate the model using Confusion Matrix and classification report
5. Predict for any new Image

Gather Data

- Manually download the images for different category
- Web-scrape the image Flickr API

  (https://github.com/ultralytics/flickr_scraper)
- Use Bing Downloader
  (https://www.youtube.com/watch?v=solASfMs89Q&t=194s)
- Fatkun Plug-in from Chrome

Learning to iterate via Images

- Use OS library

1. os.path.join( )
2. os.listdir( )

Scikit-image Library for reading and resizing an Image

```
from skimage.io import imread
from skimage.transform import resize
```

Preprocess data

- Scale down the image to specific value
- Convert into a Single Dimension Array (Vector) – Flattening of an Image
- Creating DataFrame by iterating through the Images

Algorithms

- K Nearest Neighbors
- Support Vector Machine
- Decision Tree Classifier
- Random Forest Classifier
- Logistic Regression
- Naïve Bayes
- XGBoost Classifier

What to Submit?

Participants should submit a link for their Github account repository named Mini Project which should include the following

1. Google Colab Notebook Project Link
2. Data of Images - Folder

Reference for creating account on Github and copying google colab file on Github

https://www.youtube.com/watch?v=1HIK4eAJ34U&t=4s

How to submit?

Submit your Github Link to

event@smartknower.com

Final Date for Submission

22nd February, 2021
11:59 PM