Al ML PROBLEM STATEMENT

IMAGE CLASSIFYING CHALLENGE

We intend you to build a Machine Learning model capable of image classification on a provided dataset of images. These images are already classified into ten groups based on the content of the pictures. Your "model" must predict the content of the images with an accepted level of accuracy.

Buzzwords aside, what we mean by a model is a group of neurons capable of classifying images. One of the best ways to do this would be to use a Convolutional neural network.

BASE PROBLEM:

Develop a Neural network model that can accurately classify images from the provided dataset into predefined categories.

You must develop the model in google collab or Kaggle and train it accordingly with your choices of hyperparameters, achieving an accuracy of minimum 65 percent. Make sure the collab notebook is public and have viewer access to the shared link. You may use pytorch or Tensorflow for your model building or you may go with pure python if you're a pro.

Further this collab notebook must have the output of this following: [For tensorflow] model.summary() model.evaluate()
[For pytorch]

Make a detailed analysis of the performance of the model

BONUS PROBLEM:

Deploy your image classifying model using existing libraries like Streamlit or Gradio, where we can upload an image from that 10 classes and the web-page should classify the image. We will evaluate the model on: I. Accuracy of the model.

2. Lightness of the model, i.e. the lower number of trainable parameters gets the higher score.

PLACE FOR INNOVATIONS:

You may use data augmentation techniques for your model training to improve upon.

The UI/IJX of the web-interface should be user friendly.

CONSTRAINTS:

For the base problem:

1. Model must have a minimum accuracy of 65 percent.
2. Model must have less than 2 million trainable parameters.

RULES:

You have to use only the provided data set and follow github repo to start the project.

Submit a report that should contain the following:

1. You have to make the model in Google Collab or Kaggle.
2. Notebook has to be well documented and give appropriate comments in the code to make it readable.

Dataset Link (Download it):
https://drive.google.com/file/d/1q-GaNNBi-UvrEmbS0nBv2PlWYwgCpNf7/view?usp=sharing

Pytorch Template: https://gist.github.com/Jaysmito101/6484a580644e3f2bd1a351c926868d04

Tensorflow Template: https://gist.github.com/Jaysmito101/82a573c384c32666e5ef68ec41e02bfc