Machine Learning Engineer

Task Challenge

This task is to gauge your machine learning knowledge, logic, understanding of the problem and solving it, ability to debug your code.

Problem Statement

You are provided with a dataset of ~5k 512x512 images, your program should accept an 512x512 input image and return N images from the provided dataset similar to the input image.

Link to the dataset

https://drive.google.com/file/d/1VT-8w1rTT2GCE5IE5zFJPMzv7bqca-Ri/view?usp=sharing

Evaluation Method

- Your code submission will be evaluated based code quality and on how accurate it is able to find similar images
  simple score of C/N
  C = no. of correct similar images returned
  N = no. requested images
- Plus points, for finding similar images with respect to unique feature
  simple score of F/N
  F = no. of images returned with the unique feature specific to the input image
  N = no. requested images
- Bonus points, if the provided dataset was clustered into K groups
- Quality of Code based on Modularity, Reusability, Maintainability, Readability

Note

- Pre-trained models can be used for Transfer Learning only (scratch model creation/custom layers stacked on top of back-bone models/own code given higher priority)
- Work done in Google Colaboratory, Jupyter Notebook, executable Python scripts accepted
- Codes should be well commented and a brief explanation should be provided on the chosen model or algorithm for solving the problem statement

Submission

You are expected to send your submission to us within 7 days of receiving the task. You can send the downloadable links to your test submission along with all supplementary material in the following link: https://forms.gle/kNmzb53VyHcYYeUM7

While submitting make sure you include the following details:

- Full Name
- Mail ID
- Link to repository for code / Colab / script files uploads
- Links to output / other supplementary materials uploads
- Small documentation on procedure, coding stack followed

If you have any questions regarding the assignment or need time extension, you can reach us at machinelearning@avantari.org

Sample solution to the above mentioned task

In each box, the 1st row image is the input and 2nd-4th row images are the results.