Open programme challenge plan

Dogs breed identification

Background

From a studying perspective, I decided to get deeper into neural networks and improve my skills in deep learning. I decided to do the project because I cannot identify dogs and I am not alone in this. Many people see dogs which they do not know the breed of, but wish they did. For this project, I will deliver a notebook with a trained model.

The goal

The goal of the project is to build a model that can identify the breed of a dog when given an image. There are 120 breeds, and a relatively small number of training images per class. This will make the training of the model more difficult.

Methodology

I will implement a deep learning network to classify dog breeds from images. The main goal is to evaluate different CNN custom architectures to solve the given problem. To alleviate the overfitting of the model due to the small number of training images, I used transfer learning with Resnet18 to give my model a start and drastically cut down on training difficulties. I chose Resnet18 as my starting model due to its relatively deep structure and it allows my model to be complex enough to accurately identify the dogs.

Plan:

1. 1 day:

Find the data (pictures) - the data that is going to be used in this project is taken from: https://github.com/besson/ds-capstone-project/tree/master/doggo.

2. 2 days:

   Explore my data

3. 2 days:

   Research the CNN and what else to use for the modelling

4. 4 days:

   Train the model and deduct the results

5. 1 day:

   Create a data storage solution - Git, using DVC

Future Improvements

As a future improvement on this project, I would probably dig deeper on the internet to find a dataset with a larger training set to reduce overfitting. Since I started this project with the intention to get into neural networks, I think it is enough.