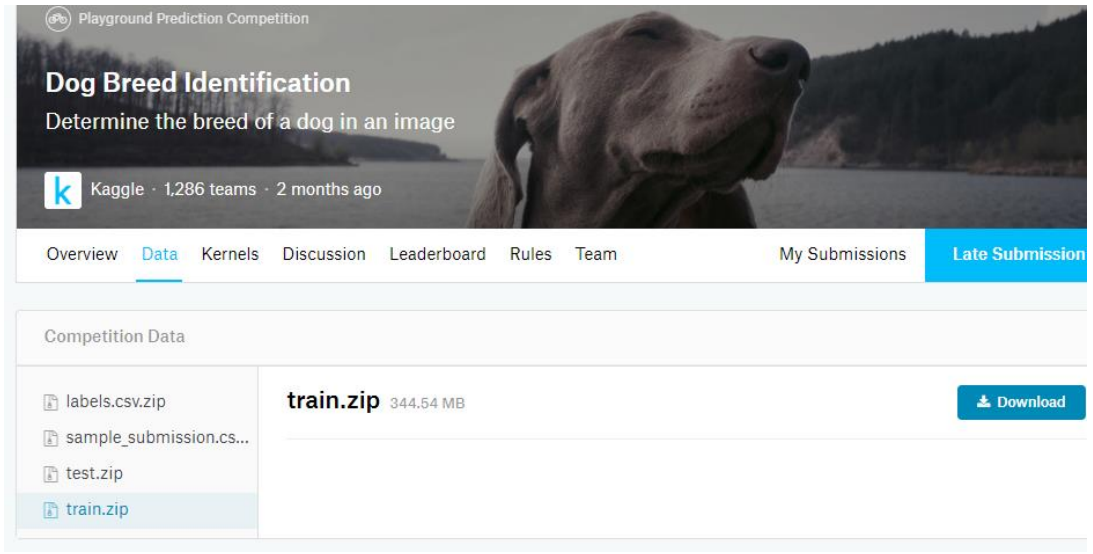
Machine Learning

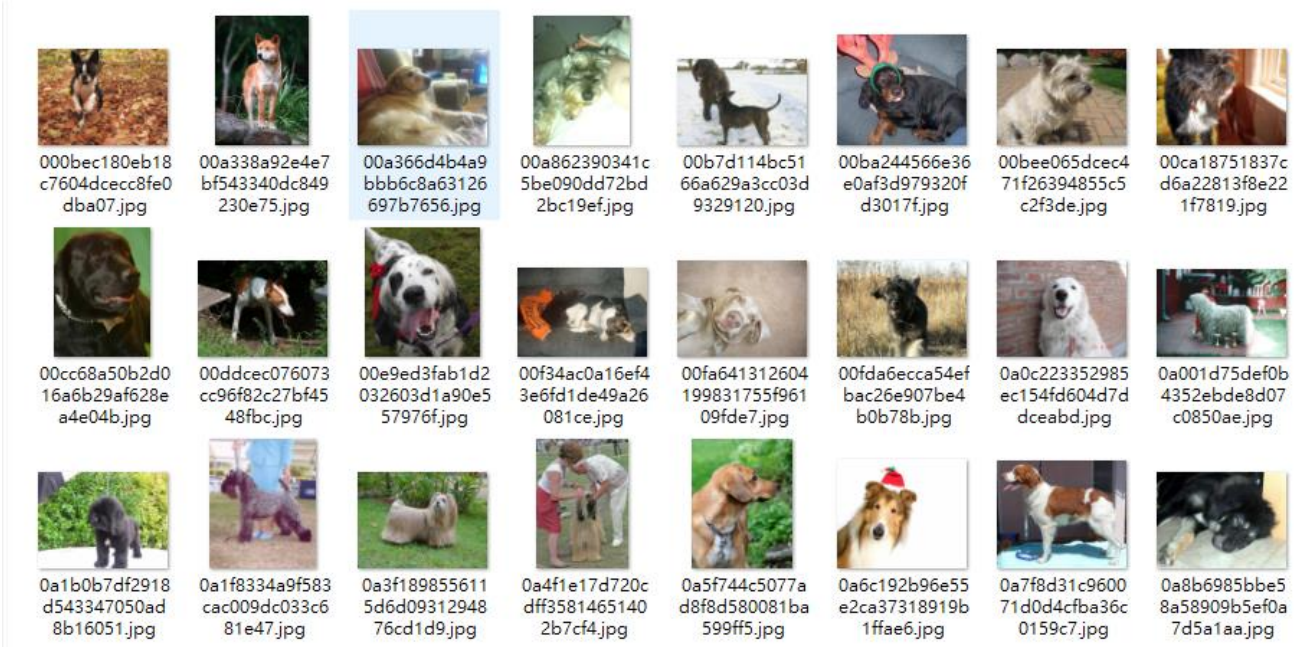
Assignment #3

Dog Breed Identification by Tensorflow

Dog Breed Identification by Tensorflow

- All the images can be downloaded at:
  - 120 classes, Train:10222, Test:10357
    - https://www.kaggle.com/c/dog-breed-identification





Classification

- labels.csv : id(image),breed(label)

	1	2	3	4	5	6	7
1	id	breed					
2	000bec180eb18c7604dcecc8fe0dba07	boston_bull					
3	001513dfcb2ffafc82cccf4d8bbaba97	dingo					
4	001cdf01b096e06d78e9e5112d419397	pekinese					
5	00214f311d5d2247d5dfe4fe24b2303d	bluetick					
6	0021f9ceb3235effd7fcde7f7538ed62	golden_retriever					
7	002211c81b498ef88e1b40b9abf84e1d	bedlington_terrier					
8	00290d3e1fdd27226ba27a8ce248ce85	bedlington_terrier					
9	002a283a315af96eaea0e28e7163b21b	borzoi					
10	003df8b8a8b05244b1d920bb6cf451f9	basenji					
11	0042188c895a2f14ef64a918ed9c7b64	scottish_deerhound					
12	004396df1acd0f1247b740ca2b14616e	shetland_sheepdog					
13	0067dc3eab0b3c3ef0439477624d85d6	walker_hound					
14	00693b8bc2470375cc744a6391d397ec	maltese_dog					
15	006cc3ddb9dc1bd827479569fcdc52dc	bluetick					
16	0075dc49dab4024d12fafe67074d8a81	norfolk_terrier					
17	00792e341f3c6eb33663e415d0715370	african_hunting_dog					
18	007b5a16db9d9ff9d7ad39982703e429	wire-haired_fox_terrier					
19	007b8a07882822475a4ce6581e70b1f8	redbone					
20	007ff9a78eba2aebb558afea3a51c469	lakeland_terrier					
21	00888705 4b18ba3c7601792b6a453cc3	boxer					

Upload sample

- 該張圖片 對應到120個label的機率
- sample_submission.csv

id	affenpinsch	afghan_ho	african_hu	airedale	american_s	appenzeller	australian_	basenji	basset	beagle	bedlington_	bernese_m	black-and-t	blenheim_s	bloodhoun	bluetick	border_col	border_ter	borzoi	boston_bul	bouvier_de	boxer	braba
000621fb3	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.00
00102ee9d	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.00
0012a730d	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.00
001510bc8	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.00
001a5f311	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.00
00225dcd3	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.00
002c2a311	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.00
002c58d41	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.008333	0.00

Reference Code

- Reference Code資料裡包含:
  - model.py - vgg16 模型
  - hw3.py - 只要寫好data preprocess就可以跑了
  - dog_dataset.pptx 簡單就紹一下dataset 和上傳到kaggle的格式要求
  - model資料夾不用理他是給他們用來存自己model的地方
  - pretrain weight(用uiuc-sports): https://drive.google.com/drive/folders/1t2mS5i_u1B5RFfPs4i5EWKQmcNenZB78

Assignment #3

1. Setup Tensorflow environment.
2. Study the Tensorflow sample code
3. Modify the Tensorflow sample code (or write your own) to use VGG model to train dog breed dataset.
4. Upload your testing results to Kaggle at:

   https://www.kaggle.com/c/dog-breed-identification

Requirement for Assignment #3

1. Train your model with initial settings:
   - Pre-trained weights by uiuc-sports. See page 5.
2. Show the error curve/accuracy curve versus iterations.
3. Submit **two text files** and your **code/model** to E-Course
   - Readme – How to run your code
   - Report
     - Method description
     - Experimental results - accuracy
     - Discussion of difficulty or problem encountered
4. Deadline: 05/23(Wnd) 11:59p.m