Capstone Project
Machine Learning Engineer Nanodegree

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Dog Breed Classifier

Domain background

A dog breed classifier is a computer vision classifier that uses Convolutional Neural Networks (CNN) to build a pipeline to process real-world, user-supplied images.

Problem statement

The goal is to create a dog breed classifier based on a dog or human image

Datasets and inputs

For dog data sets:
https://s3-us-west-1.amazonaws.com/udacity-aind/dog-project/dogImages.zip

For Human data sets:
https://s3-us-west-1.amazonaws.com/udacity-aind/dog-project/lfw.zip

Solution statement

Using convolution Neural Networks and transfer learning concepts I will use a pre-trained model like VGG and use it to classify the Dog breeds.

Benchmark model

We could compare the predicted results with the true labels.

Evaluation metrics

Accuracy is a common metric for multi-class classifiers; it takes into account both
true positives and true
negatives with equal weight.
accuracy =(true positives + true negative) / size of dataset

project design

The project will be developed by completing the following tasks:
1. Download and preprocess the input data
2. Create a Human Face detector
3. Create a general dog detector
4. Using transfer learning to create the dog breed classifier.
5. Take a raw image and return the dog breed.

The results will be obtained by comparing the model predict results with the True labeled result and measure the model accuracy
We will target an accuracy better than 60%