Project Overview

Most people currently has pet as part of their family members a higth portion are Dogs. The number of dog-related incidents of injury are constatly increasing some of this situation are happening unawering of the owner making it difficult to identify dog breeds. This leads to a need for dog identification using modern visual technology, both for dog recognition and finer-grained classification to breed.

The idea behind is to develop an app that given an image of a dog, the algorithm will identify an estimate of the canine's breed using Convolutional Neural Networks (CNN)!. If supplied an image of a human, the code will identify the resembling dog breed by building a pipeline that can be used within a web or mobile app to process real-world, user-supplied images.

Sample Output

Project Statemet

The goal is create state-of-the-art CNN models for a dog classification. By piecing together a series of models designed to perform various tasks in a data processing pipeline.

Datasets and Inputs

2. https://s3-us-west-1.amazonaws.com/udacity-aind/dog-project/dogImages.zip). The folder should contain 133 folders, each corresponding to a different dog breed.
3. http://vis-www.cs.umass.edu/lfw/lfw.tgz). human dataset.

Solution statement

Steps to achieve this process: Step 0: Import Datasets Step 1: Detect Humans Step 2: Detect Dogs Step 3: Create a CNN to Classify Dog Breeds (from Scratch) Step 4: Create a CNN to Classify Dog Breeds (using Transfer Learning) Step 5: Write the Algorithm Step 6: Test the Algorithm

The image clasificationes steps Sample Output

A benchmark model

I will use as benchmark model the article "A new dataset of dog breed images and a benchmark for finegrained classification by Ding-Nan Zou1,2, Song-Hai Zhang1 (), Tai-Jiang Mu1, and Min Zhang". Where they achieved an accuracy of 82.65% of the model trained on Tsinghua Dogs achieved.

Evaluation metrics

Validation Loss Loss Function and Backpropagation Gradient Descent

Project design