## Description of the Convolutional Neural Networks (Dog\_App) project

In this project, we apply convolutional neural networks (CNN) and transfer learning to build a pipeline that processes user images for the following reasons:

1. CNNs are used to identify images.

2. 2. Transfer learning is reused to reuse a model for other classifications.

Our project identifies and gives a suggestion of the breed of the dog of the image that is supplied by means of a classification algorithm, in case of being an image of a human the algorithm will identify it, and in a third case if it is an object He will say that he is not a dog or a human.

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### Motivation

This is a Nanodegree data scientist project and consists of using neural networks (CNN) for image classification.

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### Structure of files and libraries

Models:

-weights.best.from\_scratch.hdf5 # Initial model

-weights.best.VGG16.hdf5561 kBan hour ago

-weights.best.Xception.hdf5

Libraries:

-sklearn.datasets import load\_files

-keras.utils import np\_utils

-numpy as np

-glob

-IPython.display

-IPython.core.display

-IPython.display

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### Instructions

1. Open the ipynb file to analyze or play with it.

3. Upload new images to classify them.

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### Findings

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- The starter model achieved a test accuracy of 44%, which is up from the 41% accuracy with the VGG16 model.

- However, the final model has an accuracy of 84%, much higher than 60%.

Improvements that can be applied to the model:

- The model can be improved by giving more training images

- Increasing the nodes.

- Increasing the number of layers.

<a name="authors"></a>

### Author

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