

Homework 1: Due Tue 09-04-2018

Total Points (20 pts)

1. Watch the video [Why you can't afford to ignore Deep Learning](#)¹ (43 min) by Jeremy Howard and answer the following questions. (Read the questions before watching the video.)
 - (a) (2 pts) Describe two recent “amazing” applications of Deep Learning presented by Jeremy Howard.
 - (b) (6 pts) Describe the key differences between Machine Learning and Deep Learning.
 - (c) (2 pts) According to Jeremy Howard, what impact will Deep Learning have on society in the future.
2. (10 pts) Create a Jupyter notebook that will:
 - (1) automatically load images from an image folder.
 - (2) display each image.
 - (3) provide a label for each image.
 - (4) give an estimate of the probability that the label provided is correct.

The following Python commands are helpful.

```
from keras.applications.inception_v3 import InceptionV3
from keras.preprocessing import image
from keras.applications.inception_v3 import preprocess_input, decode_predictions
import numpy as np
import matplotlib.pyplot as plt
import os
%matplotlib inline

image_list = os.listdir(image_folder_path)
model = InceptionV3(weights='imagenet')
```

The link to Keras documentation: [Usage examples for image classification models](#). [Classify ImageNet classes with ResNet50](#)² has useful information.

¹<https://www.youtube.com/watch?v=sMBce-0psyY>

²<https://keras.io/applications/>