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CSCI3202
Assignment 5 Report
12 December 2019

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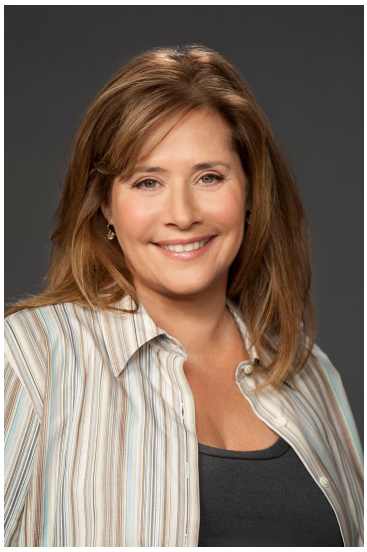
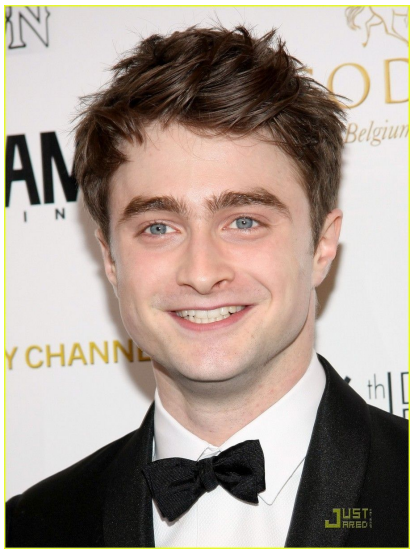
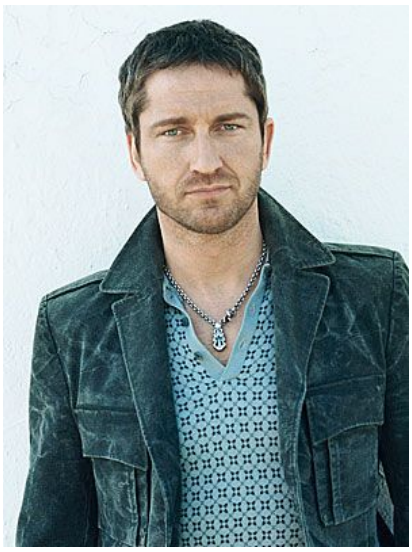
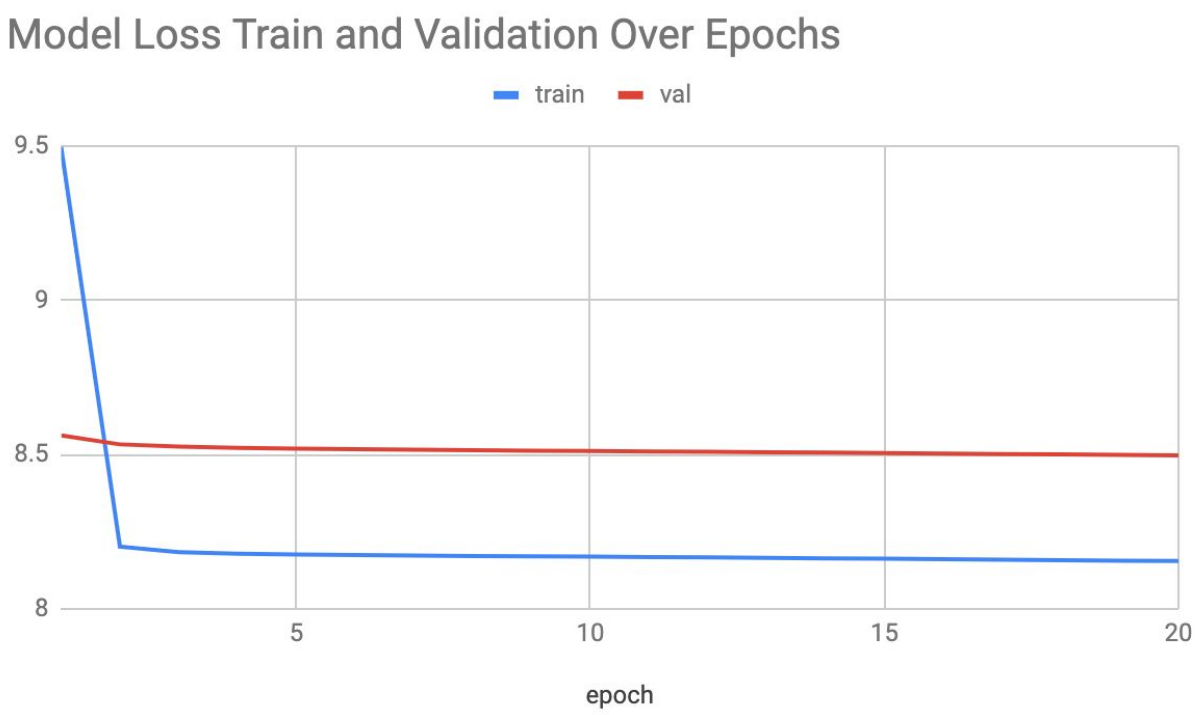
***note: I edited the getData file to include the boundingbox data in the filename of the downloaded image for efficiency purposes.*

Part 1 - Data Preprocessing


The original, uncropped dataset has images in varying sizes, resolutions, and quality, so cropping according to the given bounding boxes and resizing to 60x60 ensures that we are working with a completely normalized dataset. The provided bounds seems relatively accurate, although there seems to be some margin of different sizes between varying photos (bracco vs. radcliffe and butler above). Some of the uncropped images seemed to download incorrectly, so I had to remove those before processing the images. Now that the images are resized, every image is only 1-2kb which will make the training process much faster.

Part 2 - Deep Learning Framework



Final Test Set Evaluation

Test loss: *9.461163898846051*

Test accuracy: *0.18918919563293457*

For this model, I first stored the labels and filenames from the preprocessing step in a JSON file to easily get the data for this step. I then go through every image to change to grayscale and flatten array, as well as convert each label into an integer value. I split up the data between training, validation, and test sets as 60, 20, 20 respectively. I then normalized the X sets and converted the Y into categories. I built the model with 6 nodes in the hidden layer and a ReLU activation function.

This model doesn't perform exceptionally well, maybe due to small amount of hidden layer nodes.

**** I thought this HW was very difficult compared to previous, the sample code is hard to understand and little guidance is given in comments or the PDF. I tried my best to understand and deliver coherent code for the first two parts, but due to mental exhaustion and other finals/assignments I gave up on the final two parts.*