

CS 412– Machine Learning

Fall 2021

Hw3 – 100pts

Goal: Hands-on experience with training and fine-tuning deep convolutional neural networks with transfer learning.

Software: Use Python (Google Colab) and the Keras or Scikit-learn library.

Submit: Submit the share link of the Colab notebook and a 1 page report separately to SuCourse.

Task: Given an image, **predict gender**.

Data: You will use the **CelebA** dataset that contains aligned face images of celebrities, and label each face with selected binary attributes (male or female)

<http://mmlab.ie.cuhk.edu.hk/projects/CelebA.html>



- You will be given CELEBA images (CelebA10k.zip) along with a file that contains the labels for each image (CelebA10klabels.csv).
- Structure of . csv file is as follows: {ImageName.jpg \space ImageLabel}, where ImageLabel is 1 (Male) or -1 (Female).

Notes:

- You have to read the data directly from Google drive instead of loading it to Google Colab. You can do so by downloading the files “CelebA10k.zip” and “CelebA10klables.csv” from sucourse and uploading them on your Google drive.
- You must NOT change file names. Follow the instructions on the starter notebook

https://colab.research.google.com/drive/1V3huhZlk4i3f42qE3IC_zS--zOHaZEoi?usp=sharing