Applied Deep Learning Spring 2021 option 4 – Face Mask detection

Topic: ConvNets
Application: Mask face detection
Goal: Detect if a given person is or not using a face mask
Source: https://www.kaggle.com/wobotintelligence/face-mask-detection-dataset/code

face_with_mask	4180
mask_surgical	2430
mask_colorful	1876
face_no_mask	1569
face_other_covering	1372
eyeglasses	914
hat	823
sunglasses	358
hair_net	287
scarf_bandana	260
goggles	192
helmet	187
hijab_niqab	173
face_shield	160
hood	159
face_with_mask_incorrect	150
balaclava_ski_mask	134
turban	94
gas_mask	55
other	39

Dataset: https://www.kaggle.com/wobotintelligence/face-mask-detection-dataset

Rubric for each component

Report 20%
Presentation1 20 %
Code and documentation 60%

Participants name-Part A	Code Section	Report Section	Documentation Sec	Presentation Sec

Description

In recent trend in worldwide Lockdowns due to COVID19 outbreak, as Face Mask is becoming mandatory for everyone while roaming outside, approach of Deep Learning for Detecting Faces With and Without mask were a good trendy practice.

About the dataset

The dataset zip that is provided contains images and their corresponding labels in a CSV. The CSV labels are provided for all images except the first 1800 images. Which means that those are to be considered as test images. For the rest of the images, their corresponding labels are provided in the existing CSV.
Students are required to first train a model on the images for the label that is provided (Excluding the 1800 images that are unlabeled).
Once a trained model is obtained, the task is to run inference on the first 1800 test images (whose labels are not provided) and save the model predictions in a CSV file, in the exact same format as the training CSV is provided.
The dataset may require preprocessing and data cleaning Only two classes will be checked: with and without a mask. the candidate can choose to exclude the other classes, merge the other classes, that is up the candidate.

FAQs provide by the author: https://www.kaggle.com/wobotintelligence/face-mask-detection-dataset/discussion/158701

Stage 1

Strongly recommended to follow the face recognition model that Dr. Jaimes will be presenting in class. The project presentation should include the model used to reach the solution.

State 2

Download the dataset and get familiar with data.

State 3

Carry out a quick research about implementation, other solutions and learn from reading papers, blogs, other people implementations. Check available IPs

State 4.

Find a metric to evaluate your project. Also find a visualization approach to present your project.