Deep Learning Project

Abstract

The need of automating face mask detection especially that the Saudi society is moving toward digitalization of these processes that would further enhance the process of following The COVID guidelines.

Design

The data was downloaded from [kaggle](https://www.kaggle.com/ashishjangra27/face-mask-12k-images-dataset) .

Data

The dataset contains around 12K images, and it was spilite into 10K for training, 1K for validation and 1K for testing.

Algorithms

Pre-processing

1- Images were augmented and were changed into numerical array, and they were labeled.

Models

1- CNN model was made from scratch that consists of 2 CNN layers and dense layer with Sigmoid activation function.
2- VGG19 model was used as transfer learning.

Model Evaluation and Selection

1- The model was tested on unseen data, picture from different people and different kind of face masks.

Tools

1- Tools: Python, and Jupyter Notebook. Libraries: Keras, TensorFlow, Scikit-Learn, NumPy, Matplotlib.

Communication