Google Developer Student Clubs

Introduction to Machine Learning and Neural Networks

Course Project

Mask Detection

Your Safety comes first!

Artificial Intelligence MUST play an important rule in society, to serve the humanity, and from this point of view let's try to save the souls of people by making sure that they are wearing their masks when they enter any place.

Then we decided to make an automation system to detect whether the person is wearing a mask or not (assuming that if he / she is wearing a mask can be represented as '1', and not wearing a mask can be represented as '0'), this system can be used in open the door automatic when the camera detects that the person is wearing a mask using motors connected to the door of the company or the mall.

You are required to build an **Artificial Intelligence System** that takes an input image and returns 1 if the person is wearing the mask, else returns 0, so that the embedded engineer can use this AI system to integrate the full system.

TODO:

1. Data Collection (think about the distribution of the images).
2. Data preprocessing (if needed).
3. Building the model using any technique (strongly suggest to use pre-trained models as mentioned during the last session to use less data).
4. Validation and Testing of the model.
5. Test the model in real world situations (using images of you and your friends as an example).
6. Save the model parameters using Keras API (search online for more details).
7. (optional) Deployment using TensorFlow lite.
8. Submit your code and the saved model files on Google Classroom in a single compressed file.

Grading Criteria:

The project is a competition between the participants.

There will be sample output images from different distributions to test the models, the best model is the model with highest accuracy on the sample output images, and the more optimal model.

Best Wishes

DSC CUFE