**DAY 04**

**Dataset**

Examination dataset have been shared with three folders namely train, validation, validation2 and a Jupyter notebook. The shared dataset is a multi-class dataset. Each folder of Examination dataset has five more folders namely normal, cheat, phone, paperseeing, paperexchange.

Train set: train

Test set: validation

Validation set: validation

*Google Drive*

<https://drive.google.com/drive/folders/1Zc0bVs66paccr6-yCYT8yI9lgqajFwBv?usp=sharing>

**Confusion Matrix**

A confusion matrix is a matrix that summarizes the performance of a machine learning model on a set of test data. It is often used to measure the performance of classification models, which aim to predict a categorical label for each input instance.

*Terms related to Confusion Matrix*

True Positive (TP)

False Positive (FP)

True Negative (TN)

False Negative (FN)

*Batch size*

The batch size is a hyperparameter that defines the number of samples to work through before updating the internal model parameters.

*Epoch*

The number of epochs is a hyperparameter that defines the number times that the learning algorithm will work through the entire training dataset. One epoch means that each sample in the training dataset has had an opportunity to update the internal model parameters. An epoch is comprised of one or more batches.

*Optimizer*

An optimizer is an algorithm or function that adapts the neural network's attributes, like learning rate and weights. Hence, it assists in improving the accuracy and reduces the total loss.

**Jupyter Notebook**

from tensorflow.keras.callbacks import ModelCheckpoint

filepath="weights-improvementResnet50-{epoch:02d}-{val\_accuracy:.2f}.hdf5"

checkpoint = ModelCheckpoint(filepath, monitor='val\_accuracy', verbose=1, save\_best\_only=True, mode='max')

callbacks\_list = [checkpoint]

history = model.fit(x = train\_generator,validation\_data=validation\_generator,epochs = 20,callbacks=callbacks\_list)

#history = model.fit(x = train\_generator,validation\_split=0.2,epochs = EPOCHS)









