

# Comparison Chart of question 3

Models used are resnet , vgg16 and CNN

(NO result is plotted for CNN in this presentation but .ipynb file is added on git hub)

# Vgg16 (Original and Augmented data)

While training the vgg16 model the weights are **not copied** from keras it is **purely custom project**. All the weights are found through the training only.

## Original Dataset

```
id not improve from 0.96875
=====] - 24s 756ms/step - loss: 0.1261 - accuracy: 0.9568 - val_loss: 0.4101 - val_accuracy: 0.9062

=====] - ETA: 0s - loss: 0.1009 - accuracy: 0.9639
id not improve from 0.96875
=====] - 23s 714ms/step - loss: 0.1009 - accuracy: 0.9639 - val_loss: 0.2384 - val_accuracy: 0.8438

=====] - ETA: 0s - loss: 0.1390 - accuracy: 0.9378
id not improve from 0.96875
=====] - 25s 778ms/step - loss: 0.1390 - accuracy: 0.9378 - val_loss: 0.2175 - val_accuracy: 0.9375

=====] - ETA: 0s - loss: 0.0758 - accuracy: 0.9709
id not improve from 0.96875
=====] - 24s 736ms/step - loss: 0.0758 - accuracy: 0.9709 - val_loss: 0.6009 - val_accuracy: 0.8750
```

## Augmented dataset

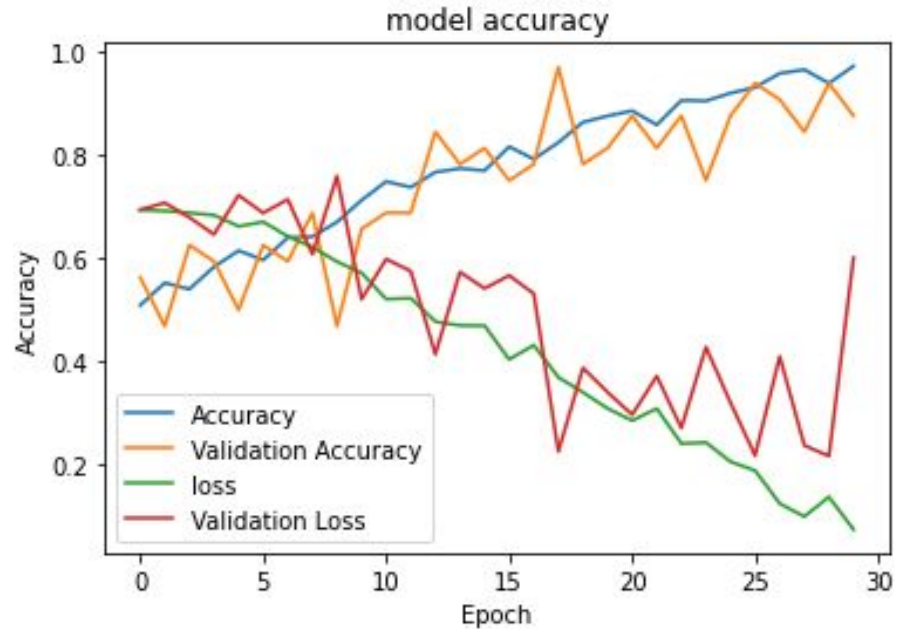
```
TA: 0s - loss: 0.6932 - accuracy: 0.4900
0.40625, saving model to /content/drive/MyDrive/vgg16/men_women/Augmented_dataset/vgg16
958s 65s/step - loss: 0.6932 - accuracy: 0.4900 - val_loss: 0.6937 - val_accuracy: 0.4062

TA: 0s - loss: 0.6930 - accuracy: 0.5406
5 to 0.56250, saving model to /content/drive/MyDrive/vgg16/men_women/Augmented_dataset/vgg
035s 68s/step - loss: 0.6930 - accuracy: 0.5406 - val_loss: 0.6925 - val_accuracy: 0.5625

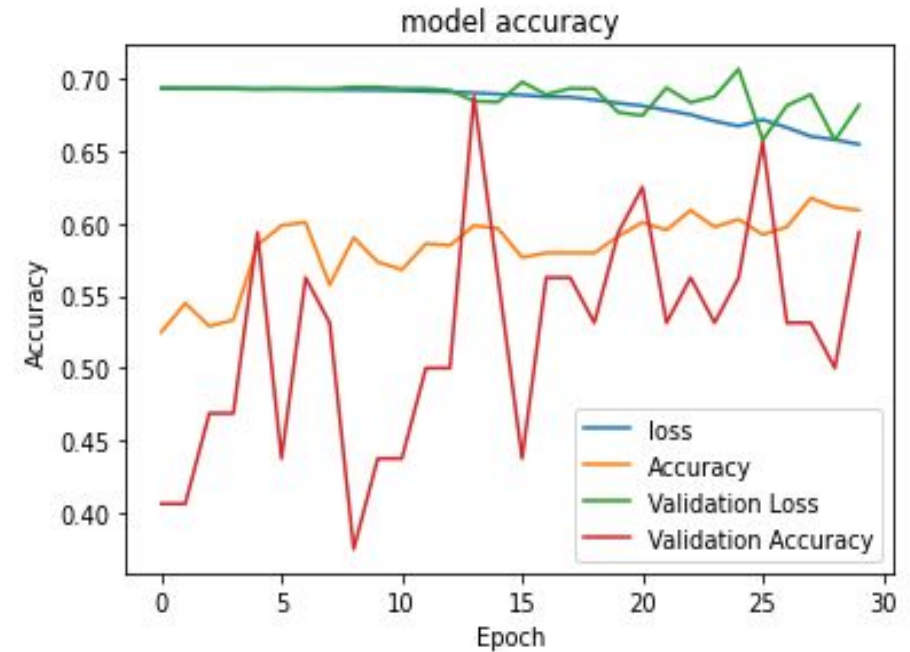
TA: 0s - loss: 0.6925 - accuracy: 0.5258
0.56250
912s 63s/step - loss: 0.6925 - accuracy: 0.5258 - val_loss: 0.6925 - val_accuracy: 0.5000

TA: 11:24 - loss: 0.6901 - accuracy: 0.5796
```

# Plots of Original vs Augmented dataset

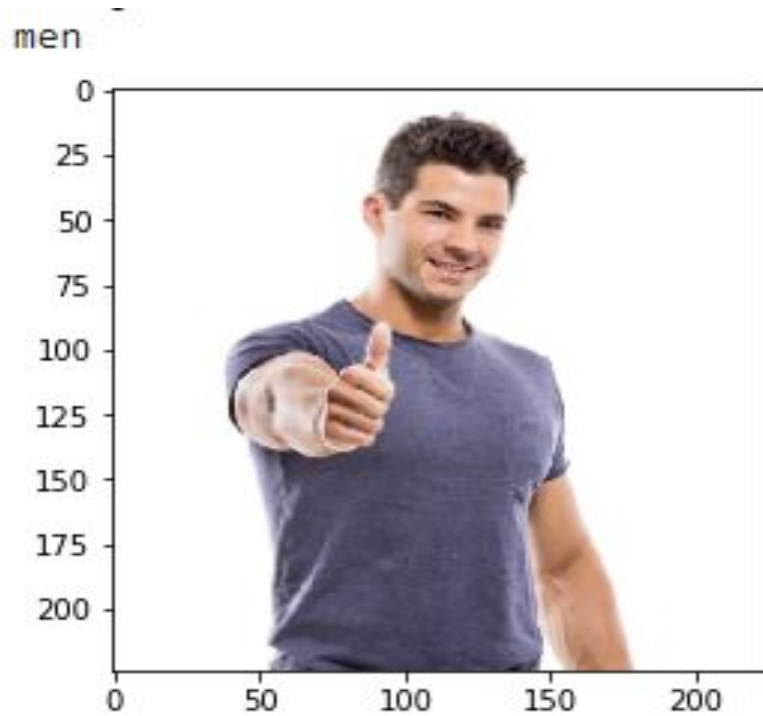


Original dataset

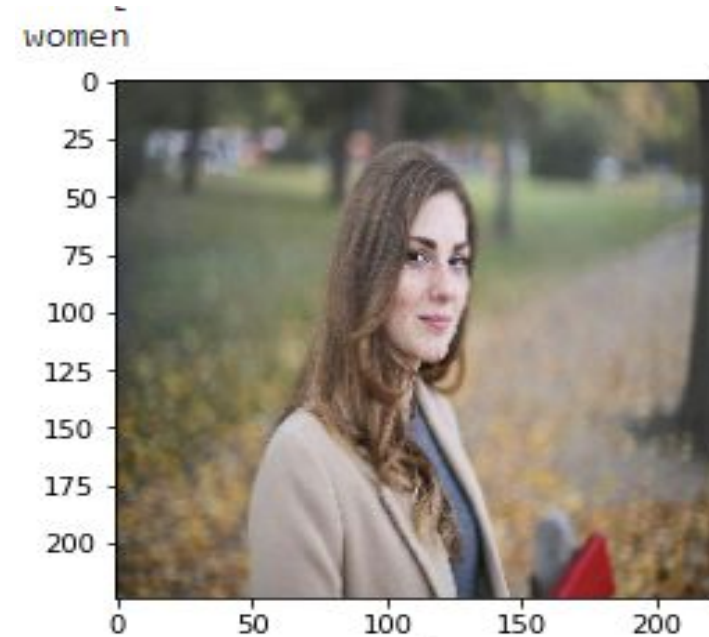


Augmented Dataset

# Prediction Original vs Augmented



Prediction of original dataset Model



Prediction of Augmented dataset model

# ResNet50 (Original and Augmented Data)

## Accuracy at the end of the epochs

Original dataset

```
Epoch 6/10
91/91 [=====] - 109s 1s/step - loss: 0.6345 - accuracy: 0.6576 - val_loss: 0.5998 - val_accuracy: 0.6865
Epoch 7/10
91/91 [=====] - 111s 1s/step - loss: 0.6330 - accuracy: 0.6576 - val_loss: 0.5973 - val_accuracy: 0.6865
Epoch 8/10
91/91 [=====] - 124s 1s/step - loss: 0.6339 - accuracy: 0.6589 - val_loss: 0.5993 - val_accuracy: 0.6880
Epoch 9/10
91/91 [=====] - 139s 2s/step - loss: 0.6360 - accuracy: 0.6565 - val_loss: 0.5936 - val_accuracy: 0.6902
Epoch 10/10
91/91 [=====] - 110s 1s/step - loss: 0.6282 - accuracy: 0.6586 - val_loss: 0.6118 - val_accuracy: 0.6992
```

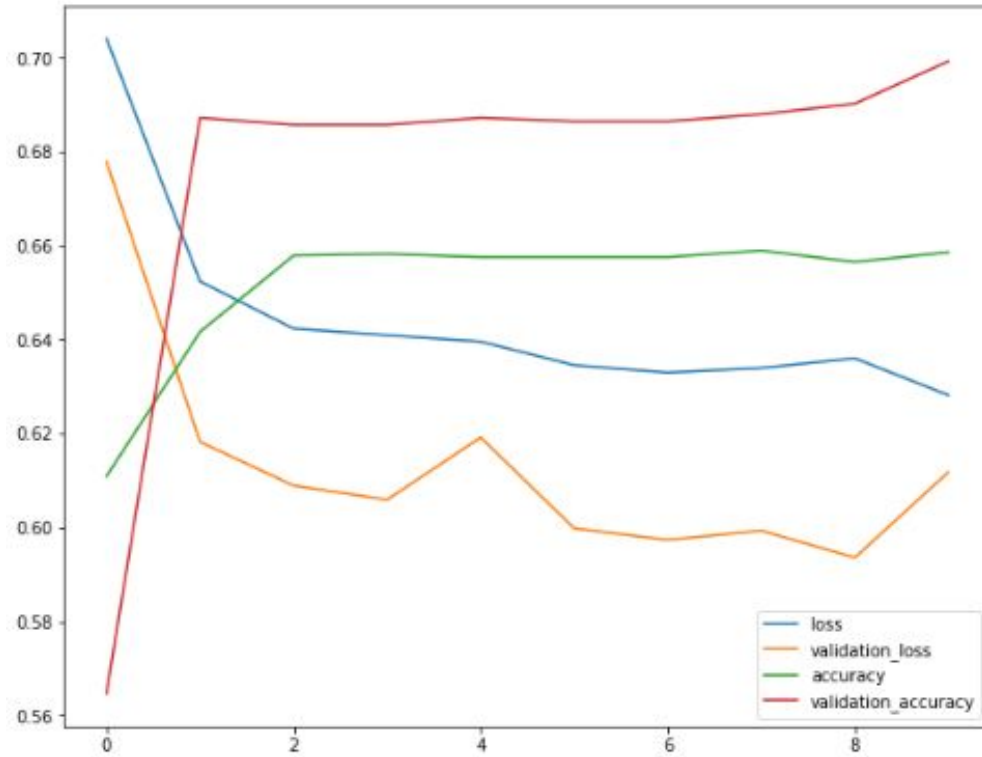
---

Augmented  
dataset

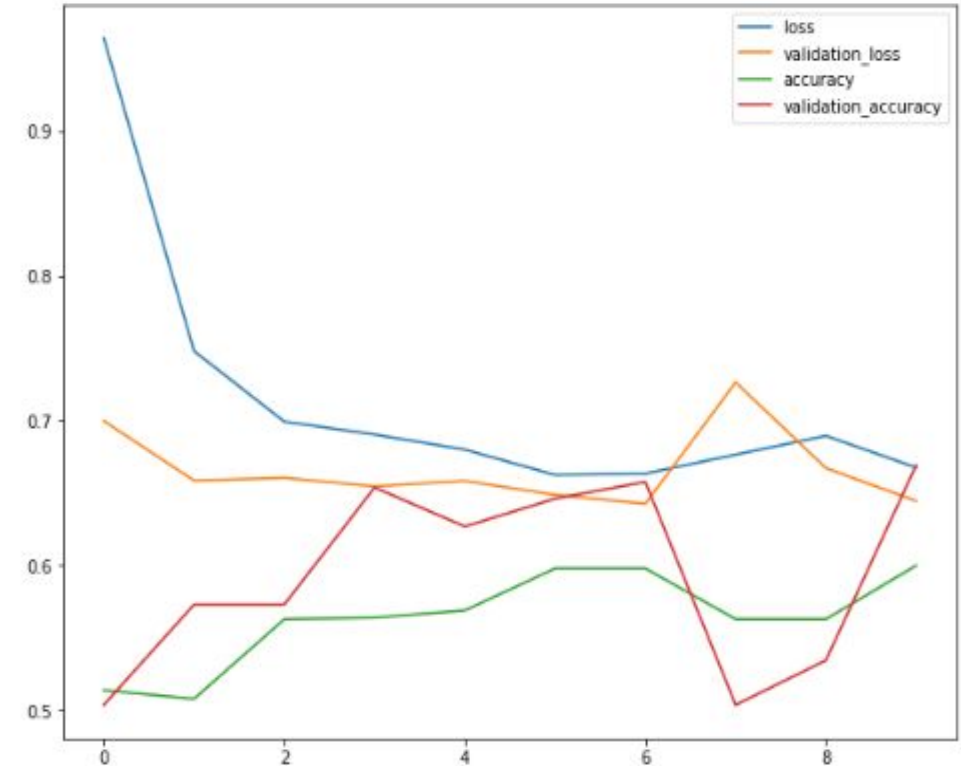
```
Epoch 8/10
32/32 [=====] - 20s 632ms/step - loss: 0.6765 - accuracy: 0.5630 - val_loss: 0.7264 - val_accuracy: 0.5038
Epoch 9/10
32/32 [=====] - 20s 628ms/step - loss: 0.6895 - accuracy: 0.5630 - val_loss: 0.6672 - val_accuracy: 0.5346
Epoch 10/10
32/32 [=====] - 20s 630ms/step - loss: 0.6676 - accuracy: 0.6000 - val_loss: 0.6445 - val_accuracy: 0.6692
```

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# Plots of Original vs Augmented dataset



Original Dataset



Augmented Dataset