Project Development

PhaseModel

Performance Test

Date	19 November 2022
Team ID	PNT2022TMID23402
Project Name	Deep Learning Fundus Image Analysis for Early Detection of Diabetic Retinopathy

Model Performance Testing:

Project team shall fill the following information in the model performance testing template.

S. No.	Parameter	Values	Screenshot
1.	Model Summary	Total Parameters:21,885,485 Trainable Parameters:1,024,005 Non-trainable Parameters:20,861,480	Attached Below
2.	Accuracy	Training Accuracy:0.6979	Attached Below
3.	Confidence Score	Class Detected: N/A Confidence Score: N/A	N/A

Screenshots:

```
x = Flatten()(xception.output)
```

Adding Dense Layers

```
prediction = Dense( 5,activation ='softmax')(x)
```

```
model = Model(inputs=xception.input,outputs=prediction)
```

```
model.summary()
Model : "model"
```

```
Output exceeds the size limit. Open the full output data in a text editor
Model: "model"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 input_1 (InputLayer)        [(None, 299, 299, 3       0
                             )]

 block1_conv1 (Conv2D)       (None, 149, 149, 32       864
                             )

 block1_conv1_bn (BatchNormaliz  (None, 149, 149, 32   128
 ation)                      )

 block1_conv1_act (Activation)  (None, 149, 149, 32    0
                             )

 block1_conv2 (Conv2D)       (None, 147, 147, 64       18432
                             )

 block1_conv2_bn (BatchNormaliz  (None, 147, 147, 64   256
 ation)                      )

 block1_conv2_act (Activation)  (None, 147, 147, 64    0
                             )


...
Total params: 21,885,485
Trainable params: 1,024,005
Non-trainable params: 20,861,480
_________________________________________________________________
```

```python
# fit the model

r = model.fit_generator(
  training_set,
  validation_data=test_set,
  epochs=30,
  steps_per_epoch=len (training_set)//32,
  validation_steps=len(test_set)//32
)
```

```
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:8: UserWarning: `Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.fit`, which supports generators.


Output exceeds the size limit. Open the full output data in a text editor
Epoch 1/30
3/3 [==============================] - 58s 17s/step - loss: 14.1287 - accuracy: 0.3438
Epoch 2/30
3/3 [==============================] - 48s 14s/step - loss: 7.1767 - accuracy: 0.5729
Epoch 3/30
3/3 [==============================] - 47s 14s/step - loss: 10.7616 - accuracy: 0.3125
Epoch 4/30
3/3 [==============================] - 40s 12s/step - loss: 7.0867 - accuracy: 0.4615
Epoch 5/30
3/3 [==============================] - 48s 15s/step - loss: 10.9142 - accuracy: 0.5729
Epoch 6/30
3/3 [==============================] - 50s 16s/step - loss: 6.9483 - accuracy: 0.6667
Epoch 7/30
3/3 [==============================] - 48s 14s/step - loss: 4.2671 - accuracy: 0.6562
Epoch 8/30
3/3 [==============================] - 48s 14s/step - loss: 10.7949 - accuracy: 0.4896
Epoch 9/30
3/3 [==============================] - 50s 16s/step - loss: 3.1253 - accuracy: 0.6875
Epoch 10/30
3/3 [==============================] - 49s 15s/step - loss: 5.1989 - accuracy: 0.6146
Epoch 11/30
3/3 [==============================] - 48s 14s/step - loss: 6.4308 - accuracy: 0.6771
Epoch 12/30
3/3 [==============================] - 47s 14s/step - loss: 3.4153 - accuracy: 0.7083
Epoch 13/30
...
Epoch 29/30
3/3 [==============================] - 39s 15s/step - loss: 2.5514 - accuracy: 0.6667
Epoch 30/30
3/3 [==============================] - 47s 14s/step - loss: 3.5850 - accuracy: 0.6979
```