

Project Development Phase Model Performance Test

Date	14 November 2022
Team ID	PNT2022TMID28865
Project Name	A Gesture-based Tool for Sterile Browsing of Radiology Images
Maximum Marks	10 Marks

Model Performance Testing:

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

S.No.	Parameter	Values	Screenshot
1.	Model Summary	conv2d (Conv2D) - 320 max_pooling2d (MaxPooling2D) - 0 conv2d_1 (Conv2D) - 9248 max_pooling2d_1 (MaxPooling2D) - 0 flatten (Flatten) - 0 dense (Dense) - 802944 dense_1 (Dense) - 774 ===== Total params: 813,286 Trainable params: 813,286 Non-trainable params: 0	
2.	Accuracy	Training Accuracy - 99.16% Validation Accuracy - 96.67%	
3.	Confidence Score (Only Yolo Projects)	Class Detected - Confidence Score -	NA

Screenshots:

1. Model Summary:

```
classifier.summary()
```

Model: "sequential"

Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 62, 62, 32)	320
max_pooling2d (MaxPooling2D)	(None, 31, 31, 32)	0
conv2d_1 (Conv2D)	(None, 29, 29, 32)	9248
max_pooling2d_1 (MaxPooling2D)	(None, 14, 14, 32)	0
flatten (Flatten)	(None, 6272)	0
dense (Dense)	(None, 128)	802944
dense_1 (Dense)	(None, 6)	774

=====
Total params: 813,286
Trainable params: 813,286
Non-trainable params: 0
=====

2. Accuracy:

```
classifier.fit_generator(  
    generator=x_train, steps_per_epoch=len(x_train),  
    epochs=20, validation_data=x_test, validation_steps=len(x_test)  
)
```

/tmp/wsuser/ipykernel_217/2617134232.py:1: UserWarning: 'Model.fit_generator' is deprecated and will be removed in a future version. Please use 'Model.fit', which supports generators.

```
classifier.fit_generator(  
Epoch 1/20
```

```
119/119 [=====] - 6s 43ms/step - loss: 1.3614 - accuracy: 0.4832 - val_loss: 0.6568 - val_accuracy: 0.7667
```

```
Epoch 2/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.6663 - accuracy: 0.7340 - val_loss: 0.5007 - val_accuracy: 0.9000
```

```
Epoch 3/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.4844 - accuracy: 0.8081 - val_loss: 0.5624 - val_accuracy: 0.8000
```

```
Epoch 4/20
```

```
119/119 [=====] - 5s 41ms/step - loss: 0.3675 - accuracy: 0.8653 - val_loss: 0.4007 - val_accuracy: 0.8667
```

```
Epoch 5/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.3375 - accuracy: 0.8670 - val_loss: 0.3236 - val_accuracy: 0.9000
```

```
Epoch 6/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.2559 - accuracy: 0.9108 - val_loss: 0.3335 - val_accuracy: 0.9333
```

```
Epoch 7/20
```

```
119/119 [=====] - 5s 40ms/step - loss: 0.2045 - accuracy: 0.9293 - val_loss: 0.3956 - val_accuracy: 0.9333
```

```
Epoch 8/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.1807 - accuracy: 0.9478 - val_loss: 0.2878 - val_accuracy: 0.9667
```

```
Epoch 9/20
```

```
119/119 [=====] - 5s 41ms/step - loss: 0.1360 - accuracy: 0.9461 - val_loss: 0.2737 - val_accuracy: 0.8667
```

```
Epoch 10/20
```

```
119/119 [=====] - 5s 41ms/step - loss: 0.1136 - accuracy: 0.9562 - val_loss: 0.3276 - val_accuracy: 0.9667
```

```
Epoch 11/20
```

```
119/119 [=====] - 5s 41ms/step - loss: 0.1338 - accuracy: 0.9495 - val_loss: 0.5726 - val_accuracy: 0.9333
```

```
Epoch 12/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.1307 - accuracy: 0.9495 - val_loss: 0.2451 - val_accuracy: 0.9333
```

```
Epoch 13/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.0528 - accuracy: 0.9848 - val_loss: 0.3329 - val_accuracy: 0.9333
```

```
Epoch 14/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.0472 - accuracy: 0.9865 - val_loss: 0.2916 - val_accuracy: 0.9333
```

```
Epoch 15/20
```

```
119/119 [=====] - 5s 41ms/step - loss: 0.0496 - accuracy: 0.9815 - val_loss: 0.5053 - val_accuracy: 0.9000
```

```
Epoch 16/20
```

```
119/119 [=====] - 5s 41ms/step - loss: 0.0866 - accuracy: 0.9731 - val_loss: 0.3790 - val_accuracy: 0.9667
```

```
Epoch 17/20
```

```
119/119 [=====] - 5s 41ms/step - loss: 0.0454 - accuracy: 0.9815 - val_loss: 0.2206 - val_accuracy: 0.9667
```

```
Epoch 18/20
```

```
119/119 [=====] - 5s 43ms/step - loss: 0.0479 - accuracy: 0.9815 - val_loss: 0.3190 - val_accuracy: 0.9667
```

```
Epoch 19/20
```

```
119/119 [=====] - 5s 41ms/step - loss: 0.0276 - accuracy: 0.9916 - val_loss: 0.3461 - val_accuracy: 0.9667
```

```
Epoch 20/20
```

```
119/119 [=====] - 5s 42ms/step - loss: 0.0228 - accuracy: 0.9916 - val_loss: 0.3098 - val_accuracy: 0.9667
```