Project Development Phase Model Performance Test

| Date | 22 November 2022 |
|---------------|---|
| Team ID | PNT2022TMID52914 |
| 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 | Model: "sequential" | | model.summary() | | |
| ١. | | | | Model: "sequential" | | |
| | Summar | Layer (type) | Output Shape | Layer (type) | Output Shape | Param # |
| | У | Param # | Output Shape | conv2d (Conv2D) | (None, 62, 62, 32) | 320 |
| | | | | max_pooling2d (MaxPooling2D | (None, 31, 31, 32) | 0 |
| | | conv2d (Conv2D) | (None 62 62 22) | conv2d_1 (Conv2D) | (None, 29, 29, 32) | 9248 |
| | | 320 | (None, 62, 62, 32) | max_pooling2d_1 (MaxPooling 2D) | | 0 |
| | | max pooling2d (MaxPooling2D | (None, 31, 31, 32) | flatten (Flatten) | (None, 6272) | 0 |
| | | 0 | | dense (Dense) | (None, 512) | 3211776 |
| | |) | | dense_1 (Dense) | (None, 6) | 3078 |
| | | conv2d_1 (Conv2D) 9248 | (None, 29, 29, 32) | Total params: 3,224,422 Trainable params: 3,224,422 Non-trainable params: 0 | | |
| | | max_pooling2d_1 (MaxPooling 0 | (None, 14, 14, 32) | | | |
| | | 2D) | | | | |
| | | flatten (Flatten) | (None, 6272) | | | |
| | | dense (Dense) 3211776 | (None, 512) | | | |
| | | dense_1 (Dense) 3078 | (None, 6) | | | |
| | | Total params: 3,224,422 Trainable params: 3,224,422 Non-trainable params: 0 | | | | |
| 2. | Accuracy | Training Accuracy - | | [] model.fit(A train, steps per epoch = SM/3,epoch=25,valida | tion data-A text,validation steps-len(A test)) | |
| 2. | riodulady | 98.99% Validation | | Tipon 2/25 | less: 1,305 - securacy: 8,655 - val_less: 1,105 loss: 0,555 - securacy: 8,7650 - val_less: 8,46 loss: 0,4657 - securacy: 0,7660 - val_less: 0,46 loss: 0,4657 - securacy: 0,5461 - val_less: 0,25 loss: 0,3655 - securacy: 0,5865 - val_less: 0,46 loss: 0,756 - securacy: 0,5866 - val_less: 0,56 loss: 0,1555 - securacy: 0,5866 - val_less: 0,56 loss: 0,1555 - securacy: 0,7575 - val_less: 0,56 loss: 0,1565 - securacy: 0,7576 - val_less: 0,56 | 15 - val_acturacy: 0.0033 86 - val_acturacy: 0.0000 15 - val_acturacy: 0.0000 13 - val_acturacy: 0.0033 12 - val_acturacy: 0.0037 |
| | | Accuracy – 93.33% | | 1.00 1.00 | The SA CONTROL OF STATE - 10, 1 June 5.27 June | 88 - val_sezensey: 8,7233 23 - val_sezensey: 8,7233 23 - val_sezensey: 8,7662 24 - val_sezensey: 8,7662 25 - val_sezensey: 8,7662 25 - val_sezensey: 8,7662 26 - val_sezensey: 8,7662 26 - val_sezensey: 8,7662 27 - val_sezensey: 8,7662 28 - val_sezensey: 8,7662 29 - val_sezensey: 8,7662 26 - val_sezensey: 8,7662 26 - val_sezensey: 8,7662 26 - val_sezensey: 8,7662 26 - val_sezensey: 8,7662 |
| | | | | Epoch 22/25 106/108 [| Innati 0.4333 - accuracy; 0.9823 - val. least 0.58 | 56 - valjecuracy: 0.0000 54 - valjecuracy: 0.0007 |

| Confidenc | Class Detected - | NA |
|------------|------------------|---|
| e Score | | |
| (Only Yolo | Confidence | |
| | | |
| , , | Score - | |
| | | |
| | | |
| | | |
| | e Score | e Score (Only Yolo Projects) Confidence |

Screenshots:

1. Model Summary:

```
model.summary()
 Model: "sequential"
 Layer (type)
                            Output Shape
                                                     Param #
  conv2d (Conv2D)
                          (None, 62, 62, 32)
  max_pooling2d (MaxPooling2D (None, 31, 31, 32)
  conv2d_1 (Conv2D)
                         (None, 29, 29, 32)
  max_pooling2d_1 (MaxPooling (None, 14, 14, 32)
  flatten (Flatten)
                          (None, 6272)
  dense (Dense)
                          (None, 512)
                                                    3211776
                         (None, 6)
  dense_1 (Dense)
                                                     3078
 Total params: 3,224,422
 Non-trainable params: 0
```

2. Accuracy:

0.3558 - val_accuracy: 0.9000

```
3.
Epoch 1/25
198/198 [==
                                                ===] - 315s 2s/step - loss: 1.3826 - accuracy: 0.4562 - val_loss: 1.1025
- val_accuracy: 0.7000
Epoch 2/25
                                           =====] - 13s 65ms/step - loss: 0.5955 - accuracy: 0.7609 - val_loss:
198/198 [=:
0.4815 - val accuracy: 0.8333
Epoch 3/25
198/198 [==
                                              ====] - 14s 70ms/step - loss: 0.4487 - accuracy: 0.8401 - val_loss:
0.3288 - val accuracy: 0.9000
Epoch 4/25
198/198 [==
                                               ===] - 15s 77ms/step - loss: 0.3065 - accuracy: 0.8855 - val_loss:
0.4115 - val_accuracy: 0.8000
Epoch 5/25
198/198 [==
                                               ===] - 13s 65ms/step - loss: 0.2746 - accuracy: 0.8906 - val_loss:
0.2433 - val_accuracy: 0.9333
Epoch 6/25
198/198 [===
                                                 ==] - 13s 66ms/step - loss: 0.1955 - accuracy: 0.9276 - val_loss:
0.5452 - val accuracy: 0.8667
Epoch 7/25
198/198 [==
                                               ===] - 14s 72ms/step - loss: 0.1508 - accuracy: 0.9394 - val_loss:
0.3068 - val_accuracy: 0.9667
Epoch 8/25
198/198 [==
                                                ===] - 13s 65ms/step - loss: 0.1476 - accuracy: 0.9562 - val_loss:
0.1384 - val_accuracy: 0.9333
Epoch 9/25
198/198 [==
                                                 ==] - 13s 66ms/step - loss: 0.1143 - accuracy: 0.9596 - val_loss:
0.1619 - val_accuracy: 0.9667
Epoch 10/25
198/198 [==
                                             ====] - 14s 72ms/step - loss: 0.0885 - accuracy: 0.9714 - val_loss:
0.2703 - val accuracy: 0.9667
Epoch 11/25
198/198 [==
                                               ===] - 13s 65ms/step - loss: 0.0647 - accuracy: 0.9815 - val_loss:
0.1181 - val_accuracy: 0.9667
Epoch 12/25
198/198 [==
                                             ====] - 13s 65ms/step - loss: 0.0355 - accuracy: 0.9899 - val_loss:
```

```
Epoch 13/25
0.1220 - val accuracy: 0.9667
Epoch 14/25
0.2230 - val_accuracy: 0.9667
Epoch 15/25
0.2975 - val_accuracy: 0.9000
Epoch 16/25
198/198 [===
    0.3195 - val accuracy: 0.9667
Epoch 17/25
0.2482 - val accuracy: 0.9667
Epoch 18/25
0.2470 - val_accuracy: 0.9667
Epoch 19/25
0.2610 - val accuracy: 0.9667
Epoch 20/25
0.3005 - val accuracy: 0.9333
Epoch 21/25
0.5817 - val_accuracy: 0.9333
Epoch 22/25
0.2166 - val_accuracy: 0.9000
Epoch 23/25
0.2064 - val_accuracy: 0.9667
Epoch 24/25
0.0157 - val accuracy: 1.0000
Epoch 25/25
         198/198 [======
0.2139 - val_accuracy: 0.9333
<keras.callbacks.History at 0x7f8554691a10>
```