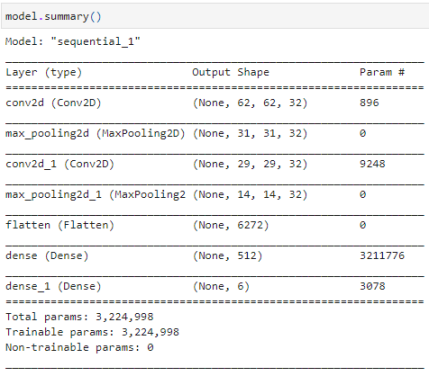
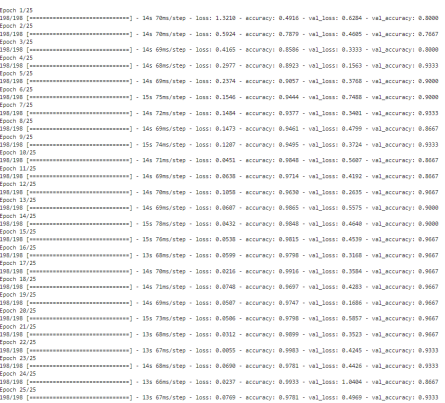


## Project Development Phase Model Performance Test

Date	18 November 2022
Team ID	PNT2022TMID15393
Project Name	Project - 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) - 896 max_pooling2d - 0 conv2d_1 (Conv2D) - 9248 max_pooling2d_1 - 0 flatten (Flatten) - 0 dense (Dense) - 3211776 dense_1 (Dense) - 3078 ===== Total params: 3,224,998 Trainable params: 3,224,998 Non-trainable params: 0	 <pre> model.summary()  Model: "sequential_1"  Layer (type)                 Output Shape              Param # ----- conv2d (Conv2D)              (None, 62, 62, 32)       896 ----- max_pooling2d (MaxPooling2D) (None, 31, 31, 32)        0 ----- conv2d_1 (Conv2D)            (None, 29, 29, 32)       9248 ----- max_pooling2d_1 (MaxPooling2 (None, 14, 14, 32)        0 ----- flatten (Flatten)            (None, 6272)              0 ----- dense (Dense)                (None, 512)              3211776 ----- dense_1 (Dense)              (None, 6)                 3078 ----- Total params: 3,224,998 Trainable params: 3,224,998 Non-trainable params: 0           </pre>
2.	Accuracy	Training Accuracy - 97.81%  Validation Accuracy - 93.33%	 <pre> Epoch 1/100: ..... - 14s 70ms/step - loss: 1.1228 - accuracy: 0.4916 - val_loss: 0.6284 - val_accuracy: 0.8000 Epoch 2/100: ..... - 14s 70ms/step - loss: 0.9324 - accuracy: 0.7879 - val_loss: 0.4605 - val_accuracy: 0.7667 Epoch 3/100: ..... - 14s 69ms/step - loss: 0.4165 - accuracy: 0.8506 - val_loss: 0.3333 - val_accuracy: 0.8000 Epoch 4/100: ..... - 14s 68ms/step - loss: 0.2877 - accuracy: 0.8923 - val_loss: 0.1563 - val_accuracy: 0.9333 Epoch 5/100: ..... - 14s 69ms/step - loss: 0.2374 - accuracy: 0.9087 - val_loss: 0.1768 - val_accuracy: 0.9000 Epoch 6/100: ..... - 15s 75ms/step - loss: 0.1546 - accuracy: 0.9444 - val_loss: 0.1468 - val_accuracy: 0.9000 Epoch 7/100: ..... - 14s 72ms/step - loss: 0.1404 - accuracy: 0.9377 - val_loss: 0.1461 - val_accuracy: 0.9333 Epoch 8/100: ..... - 14s 69ms/step - loss: 0.1473 - accuracy: 0.9461 - val_loss: 0.4799 - val_accuracy: 0.8667 Epoch 9/100: ..... - 15s 74ms/step - loss: 0.1207 - accuracy: 0.9495 - val_loss: 0.3724 - val_accuracy: 0.9333 Epoch 10/100: ..... - 14s 71ms/step - loss: 0.0451 - accuracy: 0.9848 - val_loss: 0.1607 - val_accuracy: 0.8667 Epoch 11/100: ..... - 14s 69ms/step - loss: 0.0638 - accuracy: 0.9754 - val_loss: 0.4332 - val_accuracy: 0.8667 Epoch 12/100: ..... - 14s 70ms/step - loss: 0.1058 - accuracy: 0.9638 - val_loss: 0.2635 - val_accuracy: 0.8667 Epoch 13/100: ..... - 14s 69ms/step - loss: 0.0607 - accuracy: 0.9865 - val_loss: 0.1575 - val_accuracy: 0.9000 Epoch 14/100: ..... - 15s 78ms/step - loss: 0.0432 - accuracy: 0.9848 - val_loss: 0.4648 - val_accuracy: 0.9000 Epoch 15/100: ..... - 15s 76ms/step - loss: 0.0538 - accuracy: 0.9815 - val_loss: 0.4539 - val_accuracy: 0.8667 Epoch 16/100: ..... - 13s 68ms/step - loss: 0.0599 - accuracy: 0.9798 - val_loss: 0.3168 - val_accuracy: 0.8667 Epoch 17/100: ..... - 14s 70ms/step - loss: 0.0236 - accuracy: 0.9916 - val_loss: 0.3584 - val_accuracy: 0.8667 Epoch 18/100: ..... - 14s 71ms/step - loss: 0.0748 - accuracy: 0.9697 - val_loss: 0.4283 - val_accuracy: 0.8667 Epoch 19/100: ..... - 14s 69ms/step - loss: 0.0507 - accuracy: 0.9747 - val_loss: 0.1686 - val_accuracy: 0.8667 Epoch 20/100: ..... - 15s 73ms/step - loss: 0.0506 - accuracy: 0.9798 - val_loss: 0.1887 - val_accuracy: 0.8667 Epoch 21/100: ..... - 13s 68ms/step - loss: 0.0312 - accuracy: 0.9899 - val_loss: 0.3523 - val_accuracy: 0.8667 Epoch 22/100: ..... - 13s 67ms/step - loss: 0.0055 - accuracy: 0.9989 - val_loss: 0.4245 - val_accuracy: 0.9333 Epoch 23/100: ..... - 14s 68ms/step - loss: 0.0090 - accuracy: 0.9781 - val_loss: 0.4426 - val_accuracy: 0.9333 Epoch 24/100: ..... - 13s 68ms/step - loss: 0.0237 - accuracy: 0.9933 - val_loss: 1.0484 - val_accuracy: 0.8667 Epoch 25/100: ..... - 13s 67ms/step - loss: 0.0769 - accuracy: 0.9781 - val_loss: 0.4969 - val_accuracy: 0.9333           </pre>
3.	Confidence Score (Only Yolo Projects)	Class Detected – N/A  Confidence Score – N/A	N/A

## SCREENSHOTS:

### 1. Model Summary

model.summary()		
Model: "sequential_1"		
Layer (type)	Output Shape	Param #
=====		
conv2d (Conv2D)	(None, 62, 62, 32)	896
-----		
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, 512)	3211776
-----		
dense_1 (Dense)	(None, 6)	3078
-----		
Total params: 3,224,998		
Trainable params: 3,224,998		
Non-trainable params: 0		
-----		

### 2. Model Accuracy

Epoch 1/25	198/198 [=====] - 14s 70ms/step - loss: 1.3210 - accuracy: 0.4916 - val_loss: 0.6284 - val_accuracy: 0.8000
Epoch 2/25	198/198 [=====] - 14s 70ms/step - loss: 0.5924 - accuracy: 0.7879 - val_loss: 0.4605 - val_accuracy: 0.7667
Epoch 3/25	198/198 [=====] - 14s 69ms/step - loss: 0.4165 - accuracy: 0.8586 - val_loss: 0.3333 - val_accuracy: 0.8000
Epoch 4/25	198/198 [=====] - 14s 68ms/step - loss: 0.2977 - accuracy: 0.8923 - val_loss: 0.1563 - val_accuracy: 0.9333
Epoch 5/25	198/198 [=====] - 14s 69ms/step - loss: 0.2374 - accuracy: 0.9057 - val_loss: 0.3768 - val_accuracy: 0.9000
Epoch 6/25	198/198 [=====] - 15s 75ms/step - loss: 0.1546 - accuracy: 0.9444 - val_loss: 0.7488 - val_accuracy: 0.9000
Epoch 7/25	198/198 [=====] - 14s 72ms/step - loss: 0.1484 - accuracy: 0.9377 - val_loss: 0.3401 - val_accuracy: 0.9333
Epoch 8/25	198/198 [=====] - 14s 69ms/step - loss: 0.1473 - accuracy: 0.9461 - val_loss: 0.4799 - val_accuracy: 0.8667
Epoch 9/25	198/198 [=====] - 15s 74ms/step - loss: 0.1207 - accuracy: 0.9495 - val_loss: 0.3724 - val_accuracy: 0.9333
Epoch 10/25	198/198 [=====] - 14s 71ms/step - loss: 0.0451 - accuracy: 0.9848 - val_loss: 0.5607 - val_accuracy: 0.8667
Epoch 11/25	198/198 [=====] - 14s 69ms/step - loss: 0.0638 - accuracy: 0.9714 - val_loss: 0.4192 - val_accuracy: 0.8667
Epoch 12/25	198/198 [=====] - 14s 70ms/step - loss: 0.1058 - accuracy: 0.9630 - val_loss: 0.2635 - val_accuracy: 0.9667
Epoch 13/25	198/198 [=====] - 14s 69ms/step - loss: 0.0607 - accuracy: 0.9865 - val_loss: 0.5575 - val_accuracy: 0.9000
Epoch 14/25	198/198 [=====] - 15s 78ms/step - loss: 0.0432 - accuracy: 0.9848 - val_loss: 0.4640 - val_accuracy: 0.9000
Epoch 15/25	198/198 [=====] - 15s 76ms/step - loss: 0.0538 - accuracy: 0.9815 - val_loss: 0.4539 - val_accuracy: 0.9667
Epoch 16/25	198/198 [=====] - 13s 68ms/step - loss: 0.0599 - accuracy: 0.9798 - val_loss: 0.3168 - val_accuracy: 0.9667
Epoch 17/25	198/198 [=====] - 14s 70ms/step - loss: 0.0216 - accuracy: 0.9916 - val_loss: 0.3584 - val_accuracy: 0.9667
Epoch 18/25	198/198 [=====] - 14s 71ms/step - loss: 0.0748 - accuracy: 0.9697 - val_loss: 0.4283 - val_accuracy: 0.9667
Epoch 19/25	198/198 [=====] - 14s 69ms/step - loss: 0.0507 - accuracy: 0.9747 - val_loss: 0.1686 - val_accuracy: 0.9667
Epoch 20/25	198/198 [=====] - 15s 73ms/step - loss: 0.0506 - accuracy: 0.9798 - val_loss: 0.5857 - val_accuracy: 0.9667
Epoch 21/25	198/198 [=====] - 13s 68ms/step - loss: 0.0312 - accuracy: 0.9899 - val_loss: 0.3523 - val_accuracy: 0.9667
Epoch 22/25	198/198 [=====] - 13s 67ms/step - loss: 0.0055 - accuracy: 0.9983 - val_loss: 0.4245 - val_accuracy: 0.9333
Epoch 23/25	198/198 [=====] - 14s 68ms/step - loss: 0.0690 - accuracy: 0.9781 - val_loss: 0.4426 - val_accuracy: 0.9333
Epoch 24/25	198/198 [=====] - 13s 66ms/step - loss: 0.0237 - accuracy: 0.9933 - val_loss: 1.0404 - val_accuracy: 0.8667
Epoch 25/25	198/198 [=====] - 13s 67ms/step - loss: 0.0769 - accuracy: 0.9781 - val_loss: 0.4969 - val_accuracy: 0.9333