

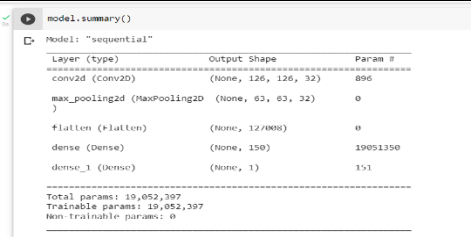
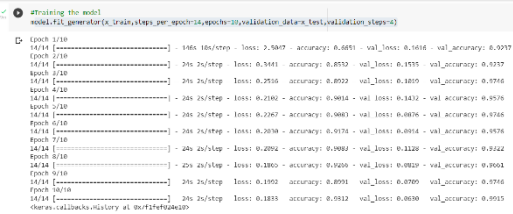
Project Development Phase

Model Performance Test


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|---------------|--|
| Date | 24 November 2022 |
| Team ID | PNT2022TMID46933 |
| Project Name | Emerging methods for early detection of forest fires |
| 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 | Total params: 19,052,397 Trainable params: 19,052,397 Non-Trainable params: 0 |  <pre> model.summary() Model: "sequential" Layer (type) Output Shape Param # ----- conv2d (Conv2D) (None, 126, 126, 32) 896 max_pooling2d (MaxPooling2D) (None, 63, 63, 32) 0 flatten (*flatten) (None, 127008) 0 dense (Dense) (None, 150) 19051350 dense_1 (Dense) (None, 1) 1 ----- Total params: 19,052,397 Trainable params: 19,052,397 Non-trainable params: 0 </pre> |
| 2. | Accuracy | Training Accuracy – 12.68 Validation Accuracy -13.07 |  <pre> training the model model.fit_generator(generator, train_steps_per_epoch=10, epochs=10, validation_data=(x_test, validation_steps=5)) Epoch 1/10: 100% [#####] - 146s 10s/step - loss: 5.5407 - accuracy: 0.0851 - val_loss: 0.1616 - val_accuracy: 0.0717 Epoch 2/10: 100% [#####] - 24s 2s/step - loss: 0.5441 - accuracy: 0.0339 - val_loss: 0.1935 - val_accuracy: 0.0337 Epoch 3/10: 100% [#####] - 24s 2s/step - loss: 0.2516 - accuracy: 0.0022 - val_loss: 0.1809 - val_accuracy: 0.0716 Epoch 4/10: 100% [#####] - 24s 2s/step - loss: 0.2100 - accuracy: 0.0014 - val_loss: 0.1432 - val_accuracy: 0.0576 Epoch 5/10: 100% [#####] - 24s 2s/step - loss: 0.2067 - accuracy: 0.0003 - val_loss: 0.0876 - val_accuracy: 0.0726 Epoch 6/10: 100% [#####] - 24s 2s/step - loss: 0.2030 - accuracy: 0.0178 - val_loss: 0.0814 - val_accuracy: 0.0576 Epoch 7/10: 100% [#####] - 24s 2s/step - loss: 0.2092 - accuracy: 0.0000 - val_loss: 0.1128 - val_accuracy: 0.0222 Epoch 8/10: 100% [#####] - 25s 2s/step - loss: 0.1800 - accuracy: 0.0000 - val_loss: 0.0820 - val_accuracy: 0.0604 Epoch 9/10: 100% [#####] - 24s 2s/step - loss: 0.1802 - accuracy: 0.0001 - val_loss: 0.0700 - val_accuracy: 0.0716 Epoch 10/10: 100% [#####] - 24s 2s/step - loss: 0.1813 - accuracy: 0.0012 - val_loss: 0.0680 - val_accuracy: 0.0615 - train_val_loss_and_history at 0:12:49.664620 </pre> |

Model Summary


 `model.summary()`


 Model: "sequential"

| Layer (type) | Output Shape | Param # |
|------------------------------|----------------------|----------|
| conv2d (Conv2D) | (None, 126, 126, 32) | 896 |
| max_pooling2d (MaxPooling2D) | (None, 63, 63, 32) | 0 |
| flatten (Flatten) | (None, 127008) | 0 |
| dense (Dense) | (None, 150) | 19051350 |
| dense_1 (Dense) | (None, 1) | 151 |

Total params: 19,052,397
Trainable params: 19,052,397
Non-trainable params: 0

Accuracy

 `#Training the model`
`model.fit_generator(x_train, steps_per_epoch=14, epochs=10, validation_data=x_test, validation_steps=4)`

 Epoch 1/10
14/14 [=====] - 146s 10s/step - loss: 2.5047 - accuracy: 0.6651 - val_loss: 0.1616 - val_accuracy: 0.9237
Epoch 2/10
14/14 [=====] - 24s 2s/step - loss: 0.3441 - accuracy: 0.8532 - val_loss: 0.1535 - val_accuracy: 0.9237
Epoch 3/10
14/14 [=====] - 24s 2s/step - loss: 0.2516 - accuracy: 0.8922 - val_loss: 0.1019 - val_accuracy: 0.9746
Epoch 4/10
14/14 [=====] - 24s 2s/step - loss: 0.2102 - accuracy: 0.9014 - val_loss: 0.1432 - val_accuracy: 0.9576
Epoch 5/10
14/14 [=====] - 24s 2s/step - loss: 0.2267 - accuracy: 0.9083 - val_loss: 0.0876 - val_accuracy: 0.9746
Epoch 6/10
14/14 [=====] - 24s 2s/step - loss: 0.2030 - accuracy: 0.9174 - val_loss: 0.0914 - val_accuracy: 0.9576
Epoch 7/10
14/14 [=====] - 24s 2s/step - loss: 0.2092 - accuracy: 0.9083 - val_loss: 0.1128 - val_accuracy: 0.9322
Epoch 8/10
14/14 [=====] - 25s 2s/step - loss: 0.1865 - accuracy: 0.9266 - val_loss: 0.0819 - val_accuracy: 0.9661
Epoch 9/10
14/14 [=====] - 24s 2s/step - loss: 0.1992 - accuracy: 0.8991 - val_loss: 0.0709 - val_accuracy: 0.9746
Epoch 10/10
14/14 [=====] - 24s 2s/step - loss: 0.1833 - accuracy: 0.9312 - val_loss: 0.0630 - val_accuracy: 0.9915
<keras.callbacks.History at 0x7f1fef024e10>