Train The Model

Now, let us train our model with our image dataset. The model is trained for 30 epochs and after every epoch, the current model state is saved if the model has the least loss encountered till that time. We can see that the training loss decreases in almost every epoch till 10 epochs and probably there is further scope to improve the model.

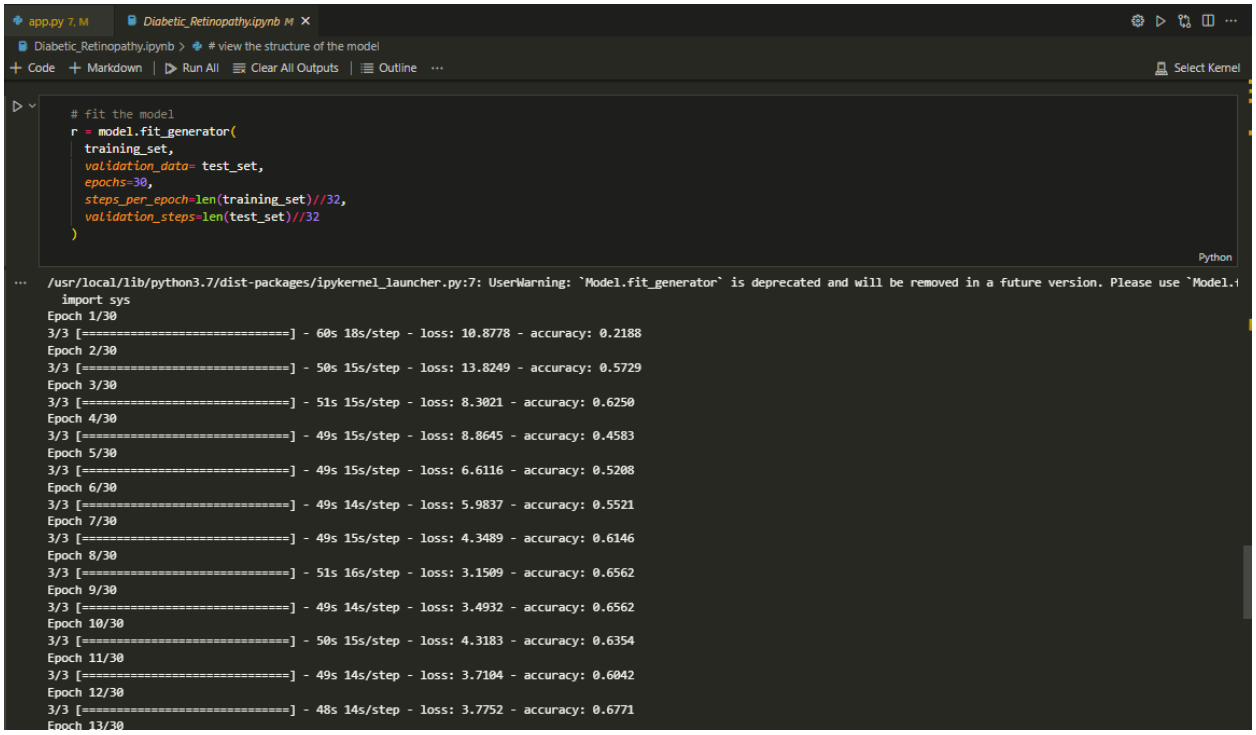
fit_generator functions used to train a deep learning neural network

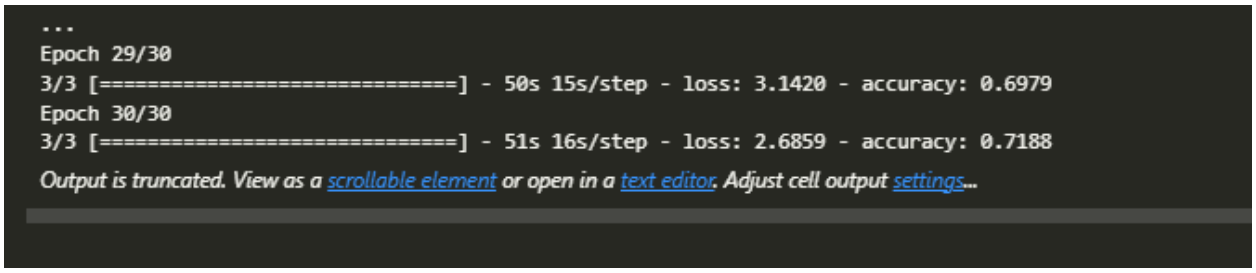
Arguments:

- steps_per_epoch: it specifies the total number of steps taken from the generator as soon as one epoch is finished and the next epoch has started. We can calculate the value of steps_per_epoch as the total number of samples in your dataset divided by the batch size.

- Epochs: an integer and number of epochs we want to train our model for.

- validation_data can be either:
  - an inputs and targets list
  - a generator
  - an inputs, targets, and sample_weights list which can be used to evaluate the loss and metrics for any model after any epoch has ended.
- validation_steps: only if the validation_data is a generator then only this argument can be used. It specifies the total number of steps taken from the generator before it is stopped at every epoch and its value is calculated as the total number of validation data points in your dataset divided by the validation batch size.


app.py 7, M
Diabetic_Retinopathy.ipynb M
Diabetic_Retinopathy.ipynb > # view the structure of the model
Code
Markdown
Run All
Clear All Outputs
Outline
Select Kernel
# 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
)
Python
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:7: UserWarning: `Model.fit_generator` is deprecated and will be removed in a future version. Please use `Model.
import sys
Epoch 1/30
3/3 [==============================] - 60s 18s/step - loss: 10.8778 - accuracy: 0.2188
Epoch 2/30
3/3 [==============================] - 50s 15s/step - loss: 13.8249 - accuracy: 0.5729
Epoch 3/30
3/3 [==============================] - 51s 15s/step - loss: 8.3021 - accuracy: 0.6250
Epoch 4/30
3/3 [==============================] - 49s 15s/step - loss: 8.8645 - accuracy: 0.4583
Epoch 5/30
3/3 [==============================] - 49s 15s/step - loss: 6.6116 - accuracy: 0.5208
Epoch 6/30
3/3 [==============================] - 49s 14s/step - loss: 5.9837 - accuracy: 0.5521
Epoch 7/30
3/3 [==============================] - 49s 15s/step - loss: 4.3489 - accuracy: 0.6146
Epoch 8/30
3/3 [==============================] - 51s 16s/step - loss: 3.1509 - accuracy: 0.6562
Epoch 9/30
3/3 [==============================] - 49s 14s/step - loss: 3.4932 - accuracy: 0.6562
Epoch 10/30
3/3 [==============================] - 50s 15s/step - loss: 4.3183 - accuracy: 0.6354
Epoch 11/30
3/3 [==============================] - 49s 14s/step - loss: 3.7104 - accuracy: 0.6042
Epoch 12/30
3/3 [==============================] - 48s 14s/step - loss: 3.7752 - accuracy: 0.6771
Epoch 13/30


...
Epoch 29/30
3/3 [==============================] - 50s 15s/step - loss: 3.1420 - accuracy: 0.6979
Epoch 30/30
3/3 [==============================] - 51s 16s/step - loss: 2.6859 - accuracy: 0.7188
Output is truncated. View as a scrollable element or open in a text editor. Adjust cell output settings...