

MODEL BUILDING

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Project Name	AI-powered Nutrition Analyzer for Fitness Enthusiasts

Train The Model

The model is trained for 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 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. Calculate the value of `steps_per_epoch` as the total number of samples in the 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
 - 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 the dataset divided by the validation batch size.



```
model.fit(x_train, epochs = 15, steps_per_epoch = len(x_train))
```



```
Epoch 1/15
125/125 [=====] - 107s 845ms/step - loss: 1.2280 - accuracy: 0.4731
Epoch 2/15
125/125 [=====] - 107s 858ms/step - loss: 1.0490 - accuracy: 0.5003
Epoch 3/15
125/125 [=====] - 105s 838ms/step - loss: 1.0467 - accuracy: 0.5003
Epoch 4/15
125/125 [=====] - 104s 833ms/step - loss: 1.0465 - accuracy: 0.5003
Epoch 5/15
125/125 [=====] - 104s 833ms/step - loss: 1.0441 - accuracy: 0.5003
Epoch 6/15
125/125 [=====] - 104s 832ms/step - loss: 1.0445 - accuracy: 0.5003
Epoch 7/15
125/125 [=====] - 106s 849ms/step - loss: 1.0442 - accuracy: 0.5003
Epoch 8/15
125/125 [=====] - 104s 831ms/step - loss: 1.0429 - accuracy: 0.5003
Epoch 9/15
125/125 [=====] - 104s 834ms/step - loss: 1.0444 - accuracy: 0.5003
Epoch 10/15
125/125 [=====] - 105s 836ms/step - loss: 1.0431 - accuracy: 0.5003
Epoch 11/15
125/125 [=====] - 104s 834ms/step - loss: 1.0421 - accuracy: 0.5003
Epoch 12/15
```