

## Model Building

### Adding Dense Layers

|              |   |
|--------------|---|
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| Project Name | AI-Powered Nutrition Analyzer For Fitness Enthusiasts |

### Adding Dense Layers

A dense layer is a deeply connected neural network layer. It is the most common and frequently used layer.

```
# Adding a fully connected layer
classifier.add(Dense(units=128, activation='relu'))
classifier.add(Dense(units=5, activation='softmax')) # softmax for more than 2
```

The number of neurons in the Dense layer is the same as the number of classes in the training set. The neurons in the last Dense layer, use soft max activation to convert their outputs into respective probabilities.

Understanding the model is a very important phase to properly using it for training and prediction purposes. Keras provides a simple method, a summary to get the full information about the model and its layers.

▶ classifier.summary()#summary of our model

↳ Model: "sequential"

| 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, 128)        | 802944  |
| dense_1 (Dense)                | (None, 5)          | 645     |
| =====                          |                    |         |
| Total params: 813,733          |                    |         |
| Trainable params: 813,733      |                    |         |
| Non-trainable params: 0        |                    |         |
| =====                          |                    |         |