

## Model Building

### Adding CNN Layers

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| Date         | 31 October 2022                                       |
| Team ID      | PNT2022TMID39453                                      |
| Project Name | AI-Powered Nutrition Analyzer For Fitness Enthusiasts |

### Adding CNN Layers

- ❖ For information regarding CNN Layers refer to the link  
<https://www.upgrad.com/blog/basic-cnn-architecture/>
- ❖ As the input image contains three channels, we are specifying the input shape as (64,64,3).
- ❖ We are adding a two convolution layer with activation function as “relu” and with a small filter size (3,3) and the number of filters (32) followed by a max-pooling layer.
- ❖ Max pool layer is used to down sample the input.(Max pooling is a pooling operation that selects the maximum element from the region of the feature map covered by the filter).
- ❖ Flatten layer flattens the input. Does not affect the batch size.

Creating the model

```
[ ] # Initializing the CNN
classifier = Sequential()

# First convolution layer and pooling
classifier.add(Conv2D(32, (3, 3), input_shape=(64, 64, 3), activation='relu'))
classifier.add(MaxPooling2D(pool_size=(2, 2)))

# Second convolution layer and pooling
classifier.add(Conv2D(32, (3, 3), activation='relu'))

# input_shape is going to be the pooled feature maps from the previous convolution layer
classifier.add(MaxPooling2D(pool_size=(2, 2)))

# Flattening the layers
classifier.add(Flatten())
```