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| DATE | 08-11-2022 |
| TEAM ID | PNT2022TMID07592 |
| PROJECT NAME | AI-POWERED NUTRITION ANALYSER FOR FITNESS  ENTHUSIASTICS |

MODEL BUILDING

**import** numpy **as** np*#used for numerical analysis*

**import** tensorflow *#open source used for both ML and DL for computation* **from** tensorflow.keras.models **import** Sequential *#it is a plain stack of layers*

**from** tensorflow.keras **import** layers *#A layer consists of a tensor-in tensor-out computation function*

*#Dense layer is the regular deeply connected neural network layer* **from** tensorflow.keras.layers **import** Dense,Flatten

*#Faltten-used fot flattening the input or change the dimension*

**from** tensorflow.keras.layers **import** Conv2D,MaxPooling2D,Dropout *#Convolutional layer*

*#MaxPooling2D-for downsampling the image*

**from** keras.preprocessing.image **import** ImageDataGenerator

*# 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())

*# Adding a fully connected layer*

classifier**.**add(Dense(units**=**128, activation**=**'relu')) classifier**.**add(Dense(units**=**5, activation**=**'softmax')) *# softmax for more than 2*

classifier**.**summary()*#summary of our model* Model: "sequential"



Layer (type) Output Shape Param #

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|  |  |
| --- | --- |
| 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 (MaxPooling (None, 14, 14, 32)  2D) | 0 |
| flatten (Flatten) (None, 6272) | 0 |
| dense (Dense) (None, 128) | 802944 |
| dense\_1 (Dense) (None, 5) | 645 |

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Total params: 813,733

Trainable params: 813,733

Non-trainable params: 0

