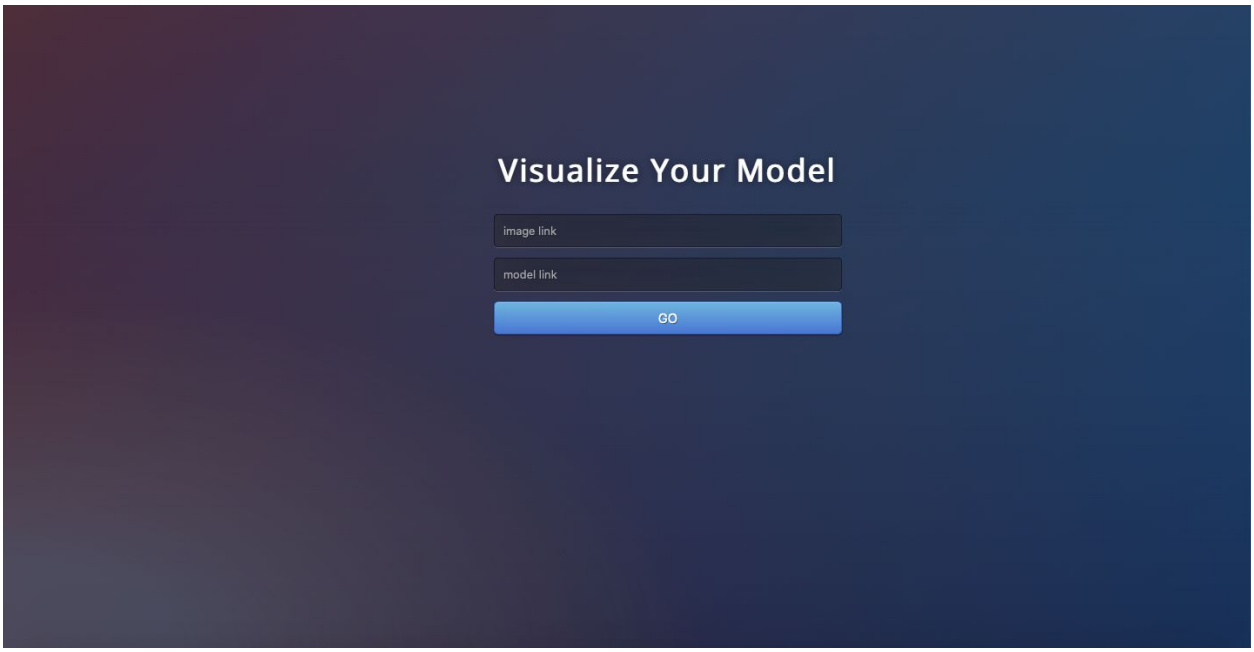
Visualizing neural network

Home page



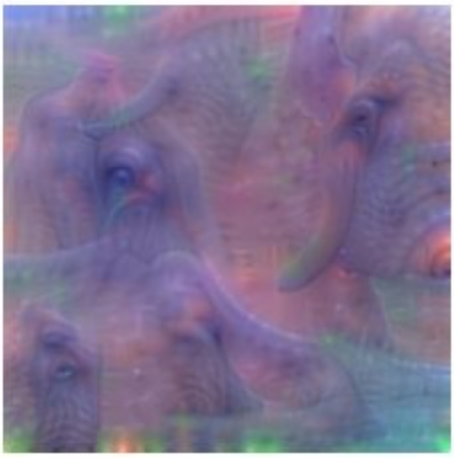
Here user will enter model link and image link after clicking “GO” button, he will be redirected to a page which will show model.summary() as follows

Layer (type)	Output Shape	Param #
input_1 (InputLayer)	(None, 224, 224, 3)	0
block1_conv1 (Conv2D)	(None, 224, 224, 64)	1792
block1_conv2 (Conv2D)	(None, 224, 224, 64)	36928
block1_pool (MaxPooling2D)	(None, 112, 112, 64)	0
block2_conv1 (Conv2D)	(None, 112, 112, 128)	73856
block2_conv2 (Conv2D)	(None, 112, 112, 128)	147584
block2_pool (MaxPooling2D)	(None, 56, 56, 128)	0
block3_conv1 (Conv2D)	(None, 56, 56, 256)	295168
block3_conv2 (Conv2D)	(None, 56, 56, 256)	590080
block3_conv3 (Conv2D)	(None, 56, 56, 256)	590080
block3_pool (MaxPooling2D)	(None, 28, 28, 256)	0
block4_conv1 (Conv2D)	(None, 28, 28, 512)	1180160
block4_conv2 (Conv2D)	(None, 28, 28, 512)	2359808
block4_conv3 (Conv2D)	(None, 28, 28, 512)	2359808
block4_pool (MaxPooling2D)	(None, 14, 14, 512)	0
block5_conv1 (Conv2D)	(None, 14, 14, 512)	2359808
block5_conv2 (Conv2D)	(None, 14, 14, 512)	2359808
block5_conv3 (Conv2D)	(None, 14, 14, 512)	2359808
block5_pool (MaxPooling2D)	(None, 7, 7, 512)	0
flatten (Flatten)	(None, 25088)	0
fc1 (Dense)	(None, 4096)	102764544
fc2 (Dense)	(None, 4096)	16781312
predictions (Dense)	(None, 1000)	4097000

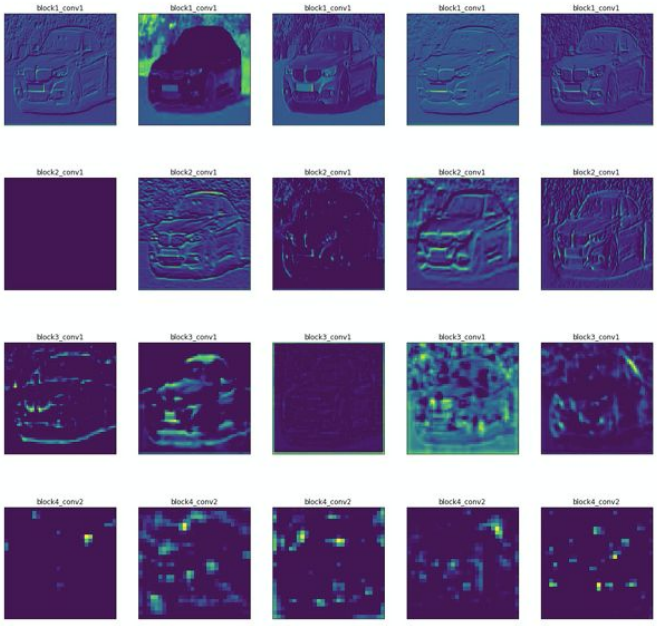
Total params: 138,357,544
Trainable params: 138,357,544
Non-trainable params: 0

Now user will get choice to visualize any layer or any filter of his model, after clicking this button user will be shown his choice

Suppose the user selected VGG16 model and wants to see 386th class's feature map of last layer (prediction layer), as 386th class if of elephant
The feature map is following -



If the user provides an image of a car and wants to see feature map of all the convolutional layers of our network, he will be shown 5 channels of feature map of all the convolutional layers as follows -



Suppose use wants to see the feature map after applying first filter of the first conv layer

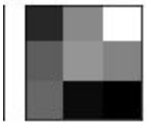
block1

- **First channel of the feature map after first filter of layer `block5_conv1`**

block2

- **First channel of the feature map after first filter of layer `block2_conv1`**

block3



- **First channel of the feature map after first filter of layer `block3_conv1`**

block4

- **First channel of the feature map after first filter of layer `block4_conv1`**

block5

- **First channel of the feature map after first filter of layer `block5_conv1`**