PROJECT OUTLINE

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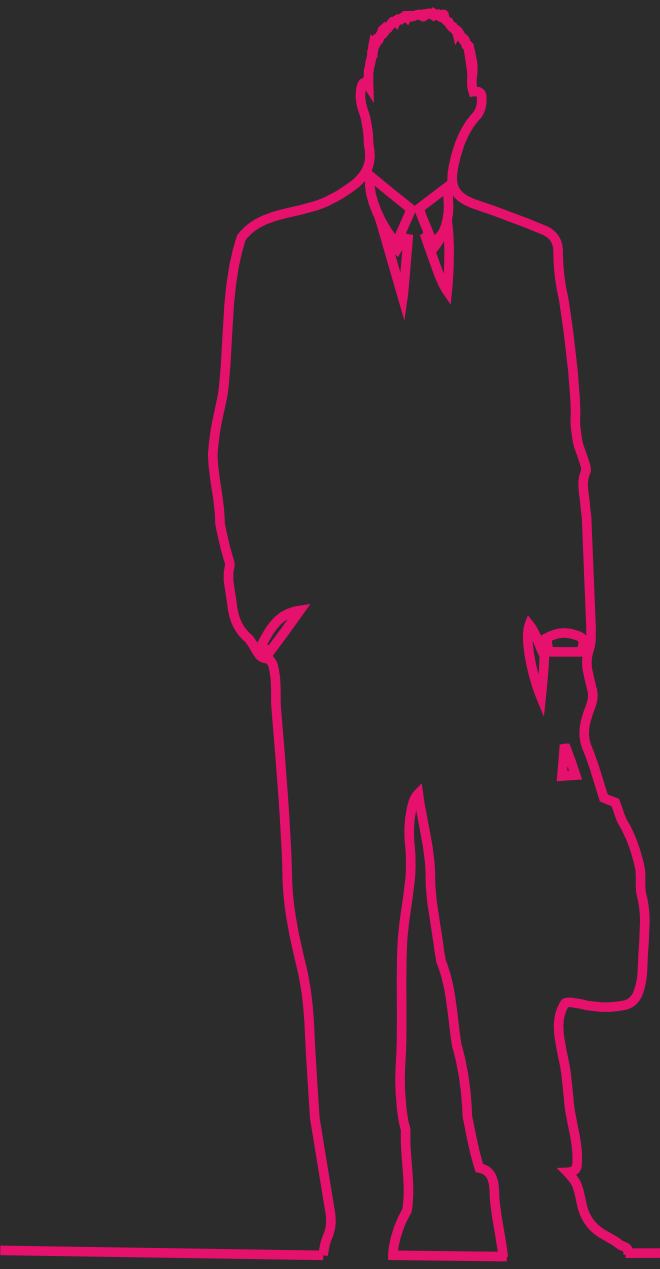


CONTENTS

CNN MODEL

```python
# Definition of the CNN model

self_model = Sequential()
self_model.add(Conv2D(filters=32, kernel_size=(5,5), activation='relu',
                      input_shape=X_train.shape[1:]))
self_model.add(Conv2D(filters=64, kernel_size=(3, 3), activation='relu'))
self_model.add(MaxPool2D(pool_size=(2, 2)))
self_model.add(Dropout(rate=0.25))
self_model.add(Conv2D(filters=64, kernel_size=(3, 3), activation='relu'))
self_model.add(MaxPool2D(pool_size=(2, 2)))
self_model.add(Dropout(rate=0.25))
self_model.add(Flatten())
self_model.add(Dense(256, activation='relu'))
self_model.add(Dropout(rate=0.5))
self_model.add(Dense(43, activation='softmax'))
```

Convolutional Layer

A fundamental layer which performs intensive processing.

Pooling Layer

Used to reduce the computational requirement.

Flattening Layer

Connector between feature and classifier layer.

CNN Model

Created by using 3 Convolutional Layers.

CLASSIFIER LAYER

```
# Classifier Layer.

model_classifier = layers.Flatten()(model_last_layer)
model_classifier = layers.Dense(1024, activation='relu')(model_classifier)
model_classifier = layers.Dropout(0.2)(model_classifier)
model_classifier = layers.Dense(classes, activation='softmax')(model_classifier)
```

Flatten Layer

Converts Multi-dimensional to one-dimensional.

Dense Layer

To reduce all features to 1024 using relu.

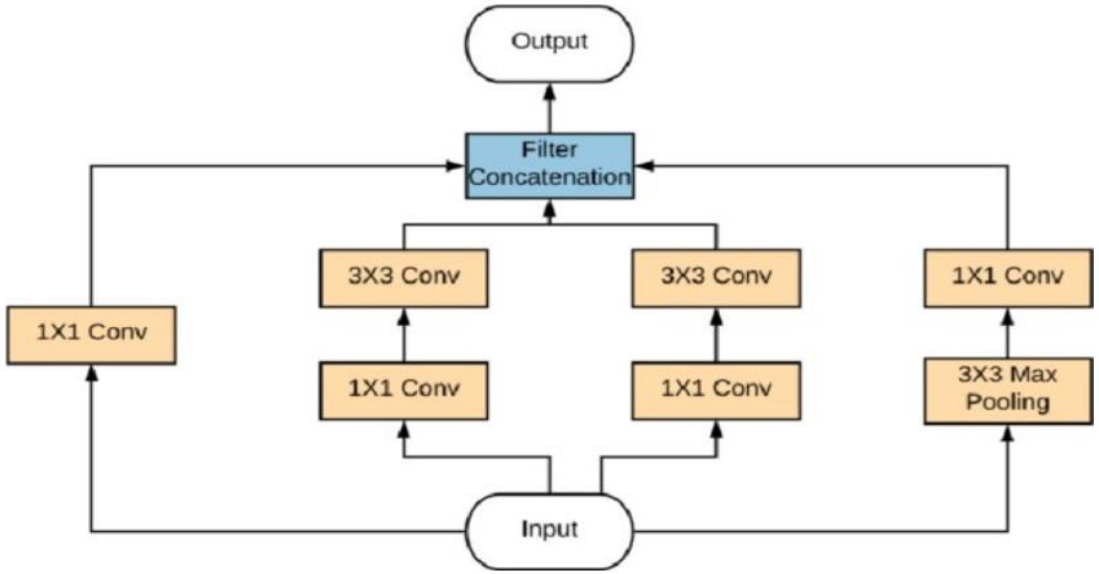
Dropout Layer

Barrier between dense layers..

Dense Layer

To predict all the 43 categories using Softmax.

INCEPTIONV3



History

Started by GoogLeNet in 2015

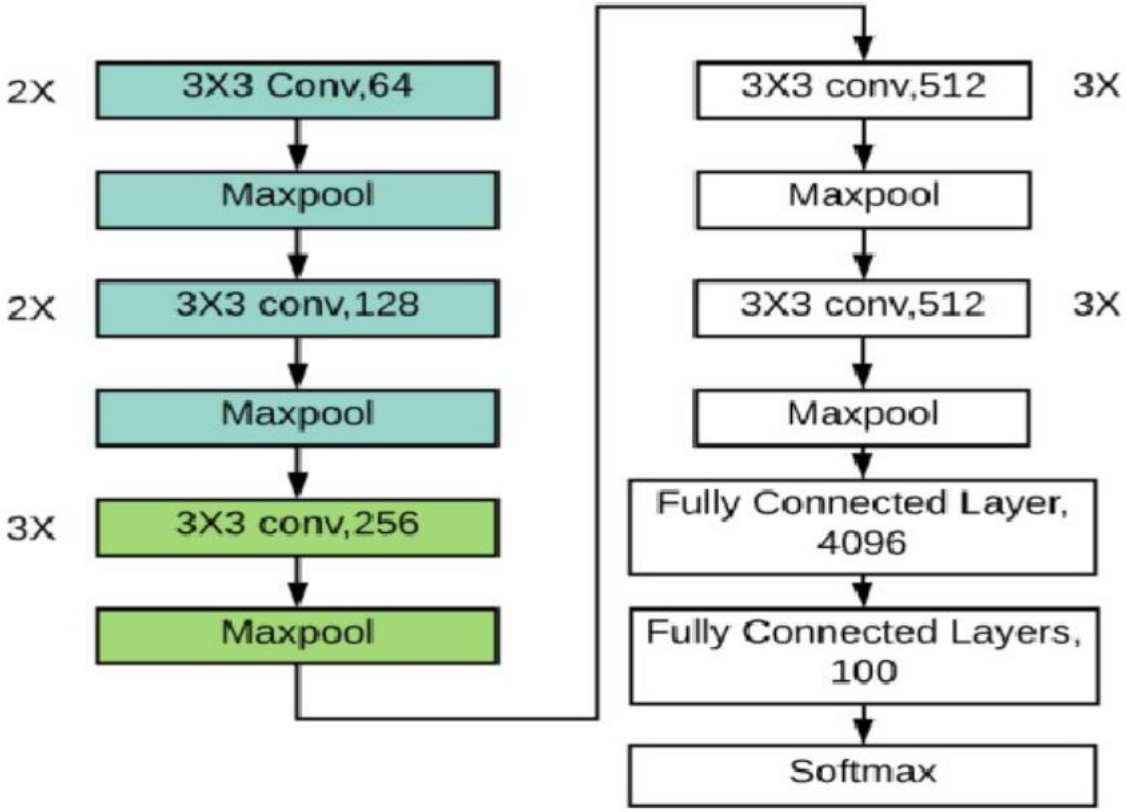
Model

It is a part of Transfer Learning model.

Layers

It is 48 layers deep.

VGG16



History

Started in 2014 by Oxford.

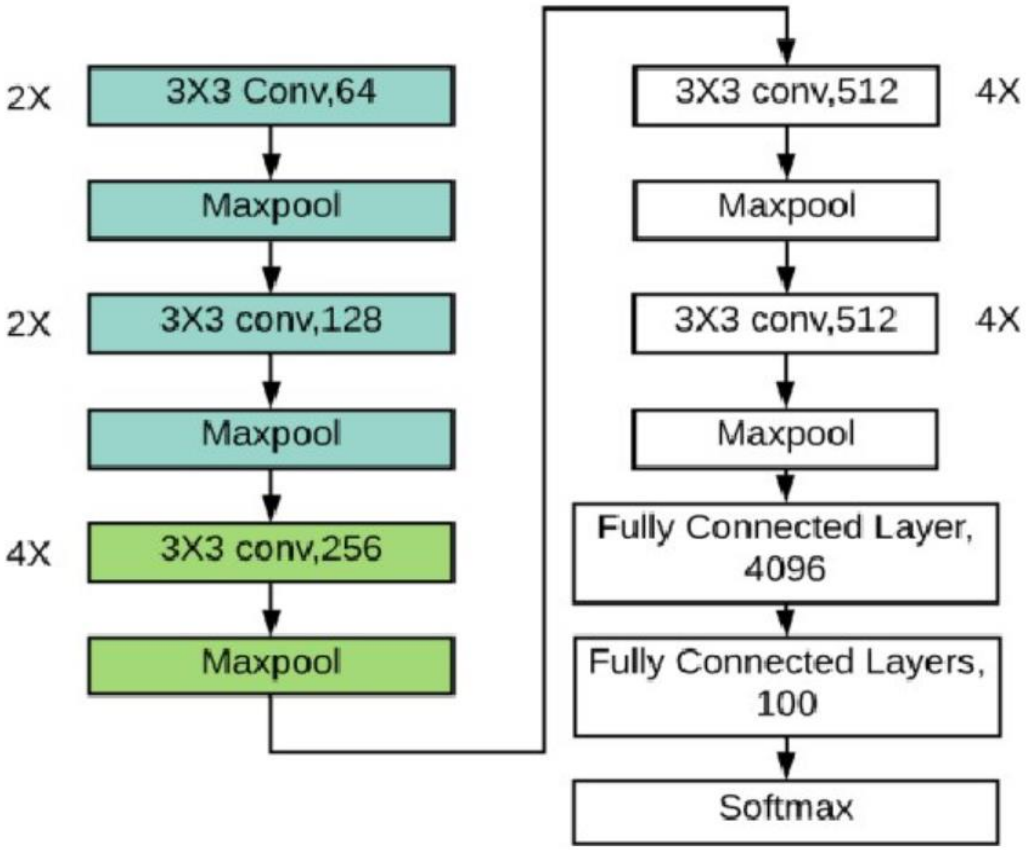
Model

It is a part of Transfer Learning model.

Layers

Shown in the diagram

VGG19



History

Started in 2012 by AlexNet.

Model

It is a part of Transfer Learning model.

Layers

Shown in the diagram


Thank You