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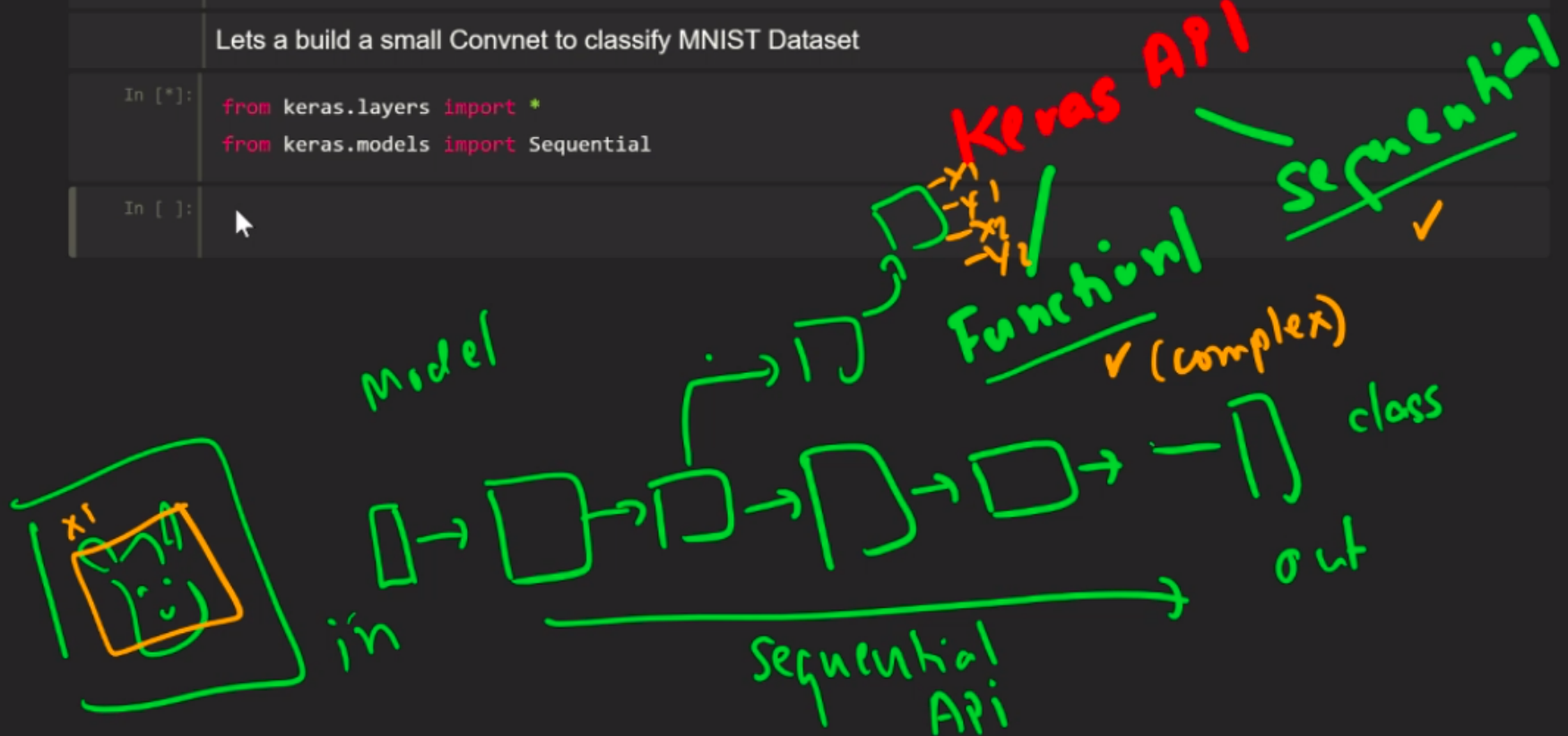
Convolutional Neural Networks

Understanding CNN's Better

Lets a build a small Convnet to classify MNIST Dataset

In [*]:
```
from keras.layers import *
from keras.models import Sequential
```

In [ ]:



Convolutional Neural Networks

Understanding CNN's Better

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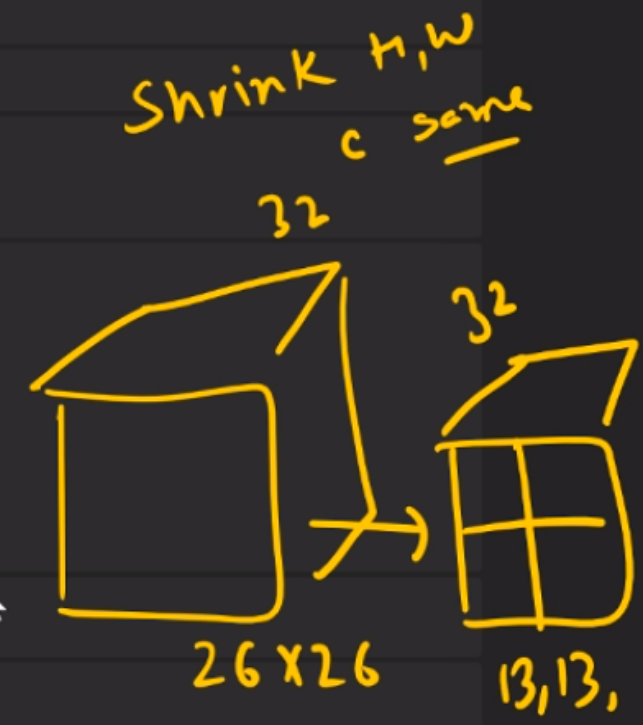
In [3]:
```
from keras.layers import *
from keras.models import Sequential
```

In [ ]:
```
# Build a Model

model = Sequential()
model.add(Conv2D(32,(3,3),activation='relu',input_shape=(28,28,1)))
model.add(MaxPool2D((2,2))
```

In [4]:
```
MaxPool2D?
```

In [ ]:



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Convolutional Neural Networks

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Lets a build a small Convnet to classify MNIST Dataset

In [3]:
```
from keras.layers import *
from keras.models import Sequential
```

In [8]:
```
# Build a Model

model = Sequential()
model.add(Conv2D(32,(3,3),activation='relu',input_shape=(28,28,1)))
model.add(MaxPool2D((2,2)))
model.add(Conv2D(64,(3,3),activation='relu',input_shape=(28,28,1)))
model.add(MaxPool2D((2,2)))
model.add(Conv2D(64,(3,3),activation='relu',input_shape=(28,28,1)))
model.add(MaxPool2D((2,2)))
```

In [4]:
```
MaxPool2D?
```

In [ ]:

input → h, w → flatten → classif [MLP]

small details increase your receptive field.

Kernel size = (3,3)

Receptive field increases.

Receptive field increase

2012 Alexnet (11,11)

2013 ZF-Net (7,7)

2014 VGG-16,19 (3,3)

Network Deep → more powerful.