

DIP-HW13

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1 Digital Image Processing - HW13 - 98722278 - Mohammad Doosti Lakhani

In this notebook, I have solved the assignment's problems which are as follows:

1. Answer below questions:
 1. What is **Dilated Convolution**?
 2. What are use cases?
 3. What are Pros and Cons?
2. Mask R-CNN:
 1. Report a summary of [Mask R-CNN](#) paper.
 2. Use any implemented model(pretrained) on your custom input
3. Compute number of parameters *in each layer* for below network:

```
model = get_unet((256, 256, 3))
def conv2d_block(input_tensor, n_filters, kernel_size=3):

    # first layer
    x=Conv2D(filters=n_filters, kernel_size=(kernel_size, kernel_size),
padding='same')(input_tensor)
    x=Activation('relu')(x)
    # second layer
    x=Conv2D(filters=n_filters, kernel_size=(kernel_size, kernel_size),
padding='same')(input_tensor)
    x=Activation('relu')(x)
    return x
def get_unet(input_img, n_filters=16):
    # Contracting Path
    c1=conv2d_block(input_img, n_filters*1, kernel_size=3)
    p1=MaxPooling2D((2, 2))(c1)

    c2=conv2d_block(p1, n_filters*2, kernel_size=3)
    p2=MaxPooling2D((2, 2))(c2)

    c3=conv2d_block(p2, n_filters*4, kernel_size=3)
```