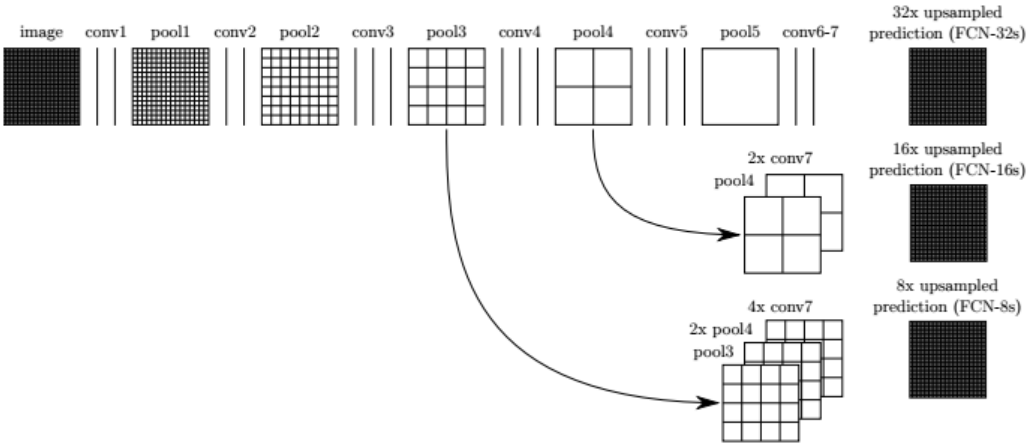
The goal of the project was all about to implement a Fully Connected Network for Semantic Segmentation starting from a pre-trained model that was the VGG16.

The steps were roughly the following:

- Upsampled a given fully connected layer
- Transformed a fully connected layer into a convolutional 1x1 layer
- Added skipping connections

The method implemented recalls the 2015 paper “Fully Connected Layer” from UC Berkely.



The network has been trained with the following parameters:

- keep_prob: 0.8
- learning rate: 0.0001
- epochs: 10
- batch_size: 1

Besides, the loss function of the network is a cross-entropy, an Adam optimizer and a L2-regularizer for the kernel weights have been picked.

The final loss amounted at 0.017 at the 10th epoch.

```
Training...

EPOCH 1 ...
Loss: = 0.072
EPOCH 2 ...
Loss: = 0.207
EPOCH 3 ...
Loss: = 0.060
EPOCH 4 ...
Loss: = 0.041
EPOCH 5 ...
Loss: = 0.105
EPOCH 6 ...
Loss: = 0.031
EPOCH 7 ...
Loss: = 0.034
EPOCH 8 ...
Loss: = 0.073
EPOCH 9 ...
Loss: = 0.071
EPOCH 10 ...
Loss: = 0.017
```

Below a bunch of the results over the images elaborated.