Report for Assignment 4

I had issues when trying to run the program and while it runs, it doesn't finish. Nevertheless, the code is in the repository, and I will explain here my experiences.

The U-net has been implemented using two files for improved readability. The file named `unet.py` has the structure of the network, with all the layers and methods required to initialise the weigths and biases. After the 5th level, the network does a backpropagation reusing the features from the forward propagation. For this, the output of the last convolution (after the ReLu) is cropped in every level of the forward propagation. This is then concatenated to the "normal" input of the first convolution for every level of the backward propagation. The methods used are `tf.image.resize_image_with_crop_or_pad()` and `tf.concat()`.

The iterations and optimization is in `exercise_04.py`. For optimization, `AdamOptimizer` is used.

The network classifies the pixels in the images in the two possible classes, depending on whether they are part of a cell or the background.

The graphs I was expecting to see were a curve with a positive slope for the training and validation accuracy starting at 0 and quickly growing close to 1. The segmentation plots would be black and white images showing the pixels in each of the two classes.

Running my code starts the network and it will do the first 100 iterations. It then crashes on the 100th, due to some problem with the training accuracy. Unfortunately, I haven't been able to locate the issue, so it doesn't go on from there.