

Deep Learning Exercise 4 Report

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1 U-Net for biological cell segmentation

This exercise was completed with the usual amount of problems occurring while implementing and training the net. The biggest hassle was separating numpy and tensorflow libraries and using the correct ones at the right places. Also I chose to calculate the intersection over union accuracy a bit differently than in the lecture: the union was not calculated as total cell pixels + false right cell pixels, but rather as addition of both label and prediction counts and then subtracting the intersection count, resulting in the same number.

I've included the accuracy and loss development as well as one output of both layers, rounded, and also the corresponding label. An example of the output

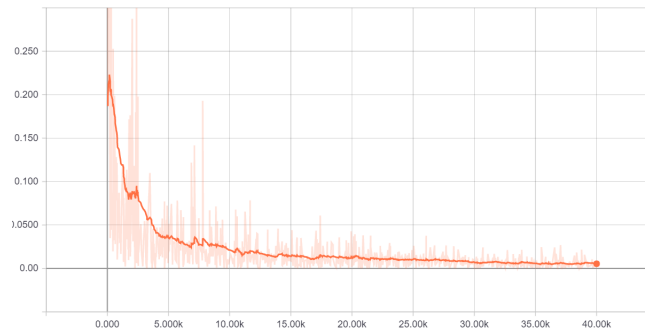


Figure 1: Loss development, loss is calculated with cross entropy

layers and the prediction kann be found in the Jupyter Notebook.

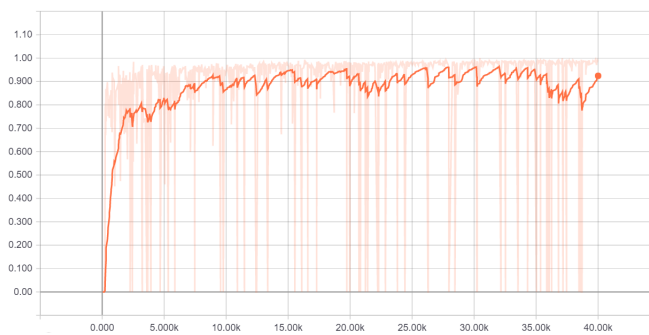


Figure 2: Accuracy development, accuracy is intersection over union