Project blok 2 2017

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1 Exploratory data analysis in preparation for neural network segmentation of tubular structures in the pancreas

2 Project goal

The goal of this project is to perform an exploratory analysis preparing for an advanced deep learning segmentation algorithm in a followup project. A previously implemented deep learning implementation proved inadequate, and the purpose of this project is to understand why, and how we might be able to take full advantage of the power of CNNs.

- Test current annotation with "simple" classifiers for segmentation

- Use unsupervised method and compare with supervised

- Test the previous using different preprossecing methods

- Postprocess results, and compare result

- Test 2d versus 3d features measuring both performance and gains when going 3d

- Compare with previous results

3 Learning goals

The learning goals of this project are:

- Learn to manipulate data in several dimensions where structure is important. Both in two and in three image dimensions.

- Learn to use unsupervised learning, to produce ground truth annotation for segmentation

- Learn the basics of semisupervised learning