Notes 16-03

# Registration

Funmilayo fixed the problem, run the code and saved a list with normalized MI score per patient. Changed the normalized MI score is adapted to 3D

## Merge 3D images

Lotte worked on it, however she didn’t have enough time (dependent on the result of Funmilayo) to fuse the images in 3D.

Lotte 🡪 Dice and STAPLE calculation

Dice score: take the average of the 2D dice score of every slice

STAPLE: determine per slice

There is no elaboration on the STAPLE algorithm in the paper of Josien.

## B-spline

Has been written

Everybody 🡪 read and add comments

## Report question Raquel

Add equation only and refer to the other paper in which the equation has been derived.

# Machine learning

We are not allowed to train the model on colab. For testing we can download an online dataset,

## U-net

Christos and Raquel worked on the u-net part.

They looked into parameters and values that can be changed.

* Optimizer learning rate
* Optimizers
* Batch size

They wanted to use a GridSearchCV, however that gave an error about image size

Proposal to manually do some combinations of those parameter variations.

Current\_validation/training\_loss: refer to each epoch loss

## VAE

Noortje looked into this and all information is added, the training can run. However an error occurs when a generated image is called. Then a model is returned instead of

## SPADE

Milan is working on it, he will try to get it working for our data before Monday. It is not really well documented

# Questions to Cian:

* STAPLE: loop over every 2D slice and then determine?
* Can we use a GridSearchCV to optimize the hyper-parameters of the U-net?

# Next tasks

Next meeting: Monday at 11:30.

* Everyone: look at report + add comments
* Lotte: fusion of images and dice score
* Christos, Noortje & Funmilayo: look at code of VAE and look at improvements
* Milan: look at SPADE
* Raquel: finish report part of equation

Christos might not be able to be in Eindhoven, but probably online