Weekly Report

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Outline

- The tasks I have finished this week

- Some Suggestions Professor Chen proposes about our project

- Things we want to do next week

The tasks I have finished this week

For the model part,I have finished model building and build the environment for training this week.Now I'm trying to fix some bugs in the code, and we want to see if the "Dropout Strategy" will work.

For the review part, I have finished half of my part, which is intergrated into the whole review.I also have finished article reading about the part left.

Some Suggestions Professor Chen proposes about our project

Professor Chen comes to our lab this weekend and has a long talk and discussion with us.Here is a summary of his guidance.

- About our ideals that using dropout to expand the suggest annotation to 3D images

  Danny believes it's an ideal worth trying, but the detailed strategy needs more attemptions.At the same time, Danny has observed the pixel-wised label we generate, and suggest that we could try "Fuzzy Segmentation Method" to generate a basic topology structure and use graph search method to fine it[2],[3].He also mention the article[4],[1], which we will read and discuss next week.

- About our training strategy "Quasi-Transfer Learning Method"

  Our main ideal is to use the parameters trained in a detector net, and add the deconvolution part after it. Danny believes the main point is to identify which layers we can use in our segment net. To figure it out, we need to do many attemptions such as add or remove a layer , input some data with noise, and then we can get some information from the feedback and find out the optimal stage.

Things we want to do next week

- Finish my review part.

  I plan to finish my part left of review before Wednesday next week,and the left part is the traditional method in nodule segment and diagnosis.

- Finish reading the 4 arcticles Professor chen recommended and write a conclusion.

- Begin our model training as soon as possible, and try some attemptions mentioned above.

Q. Dou, L. Yu, H. Chen, Y. Jin, X. Yang, J. Qin, and P. A. Heng.
3d deeply supervised network for automated segmentation of volumetric medical images.
Medical Image Analysis, 2017.

Kang Li, Xiaodong Wu, Danny Z Chen, and Milan Sonka.
Optimal surface segmentation in volumetric images-a graph-theoretic approach.
IEEE transactions on pattern analysis and machine intelligence, 28(1):119–134, 2006.

X. Liu, D. Z. Chen, M. H. Tawhai, X. Wu, E. A. Hoffman, and M. Sonka.
Optimal graph search based segmentation of airway tree double surfaces across bifurcations.
IEEE Transactions on Medical Imaging, 32(3):493–510, March 2013.

Lequan Yu, Jie-Zhi Cheng, Qi Dou, Xin Yang, Hao Chen, Jing Qin, and Pheng-Ann Heng.
Automatic 3D Cardiovascular MR Segmentation with Densely-Connected Volumetric ConvNets, pages 287–295.
Springer International Publishing, Cham, 2017.