

CS671 - Deep Learning and its Applications
Hackathon Proposal

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1. Problem Statement

Automatic liver segmentation has been one of the great challenges in today's world. According to WHO, Liver cancer was the second most common cause of cancer induced deaths in 2015. Due to the heterogeneous and diffusive shape of liver lesions, automatic segmentation of tumor is very challenging. Until now, only interactive methods achieved acceptable results, segmenting liver lesions.

We are encouraged to develop automatic segmentation algorithm to segment liver lesions in contrast-enhanced abdominal CT scans.

2. Dataset

The dataset has been downloaded from [Codalab LiTS challenge](#). Data and segmentations are provided by various clinical sites around the world. The training data set contains 130 CT scans and the test data set 70 CT scans.

3. Tentative Procedure

We plan to train 3D Autoencoder to generate masks which highlight the tumor lesions from the given CT scan images.

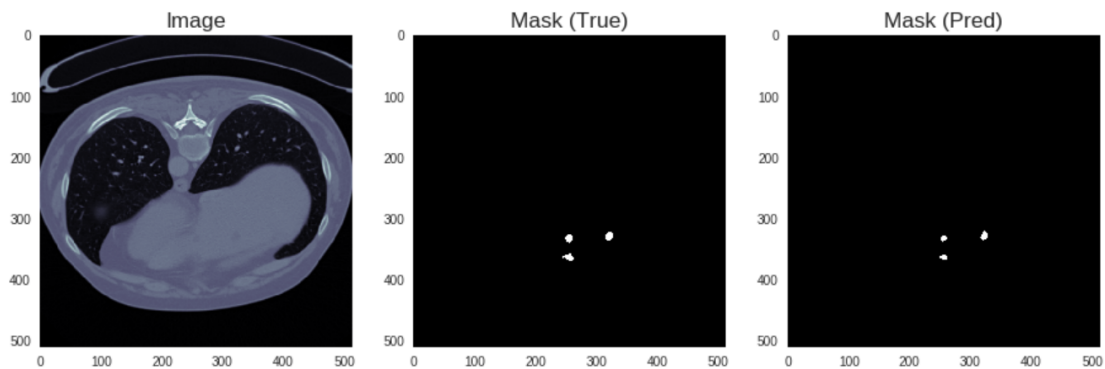


Figure 1: Expected Output of Tumor Masks

4. Final Deliverable

We plan to develop a web-app with a REST API at the backend that accepts CT scan image from the user and generates the mask.