**[CS-8395 Spring 2020]**

**Deep Learning in Medical Image Computing**

**\* Please print and bring it before each class**

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Paper Title: Faster R-CNN: Towards Real-Time Object Detection with Region Proposal Networks

Please summarize the paper using your own words: (<100 words)

This paper presents a new technique for object detection by utilizing shared convolutional layers between a network that creates the boxes and the network that classifies the objects in the boxes. The authors note that existing techniques often do not share network layers for these two tasks, making the computation take a longer time. In this architecture, the authors first train a network to propose regions, and then use the regions to train a classifier for the objects, but keep several shared convolutional layers between the two networks to reduce the running time of the algorithm.

Question 1 for the paper:

How effective would such an architecture be if we were to outline the object instead of just using a rectangular box?

Question 2 for the paper:

How difficult is the hyperparameter tuning for this network architecture, since we now have to use shared layers that work for two networks?