

**[CS-8395 Spring 2020]**

## **Deep Learning in Medical Image Computing**

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

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Paper Title: Learning Deep Features for Discriminative Localization

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

The key idea of the paper is Class Activation Mapping, which uses global average pooling to enable us to see the parts of the image that most contribute to the reason the network classifies an image a certain way. The idea is that by removing the fully connected layers, we are able to see into the convolutional layers and see which parts of the image the neural network is looking at when it makes its guess. The most helpful part of the paper is that the authors are able to present actual heatmaps for specific images so we can see actual examples of the approach working correctly when the part of the picture relevant to the label is highlighted.

Question 1 for the paper: Why is max pooling so popular today if average pooling seems to work well here?

Question 2 for the paper: How could we apply a similar method of trying to understand neural networks to input data that is not an image?