**[CS-8395 Spring 2020]**

**Deep Learning in Medical Image Computing**

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

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Paper Title: 3D U-Net: Learning Dense Volumetric Segmentation from Sparse Annotation

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

This paper extends the idea of U-Net to 3-dimensional volumetric data, which is commonly used in medical image processing. The authors note that labeling volumetric data is often time consuming because it is done slice by slice, and nearby slices are often quite similar. The 3D U-Net architecture proposed by the authors is able to generate labeled data from sparsely labeled slices so that only a few slices need to be labeled. Moreover, the framework is also able to generalize from sparsely labeled data to create labels for unlabeled data. The authors demonstrate that their technique is feasible with an example of actual data.

Question 1 for the paper: Are there any other architectures that translate well from 2D to 3D, or is this unique to U-Net?

Question 2 for the paper: Is the use of the architecture limited to 3D volumetric data, or can it have other applications to 3D data such as video data?