**[CS-8395 Spring 2020]**

**Deep Learning in Medical Image Computing**

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

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Paper Title: Models Genesis: Generic Autodidactic Models for 3D Medical Image Analysis

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

This paper presents a unified baseline deep learning model for transfer learning for 3-D medical imaging applications. The authors note that existing medical image neural networks often use transfer learning from ImageNet, but argue that results in a use of 2-D rather than 3-D data. The authors trained an encoder-decoder style network on 3D CT chest scans and used it as a base model to perform transfer learning for other tasks. Using this method, the authors were able to achieve better results than starting from a pretrained ImageNet model to perform transfer learning for medical applications.

Question 1 for the paper: Can these same principles be extended to create baseline models for 3-D computer vision tasks such as videos?

Question 2 for the paper: Are there any other modalities (MRI, ultrasound, etc) and types of images (brain, heart, etc) that would be more useful for transfer learning than the CT and chest scan combination?