Title - How to fool radiologists with generative adversarial networks A visual Turing test for lung cancer diagnosis

Abstract – Differentiating lungs tumor as malignant and benign is still a challenge, for overcoming this challenge radiology needs better medical imaging which can help in differentiating the tumors. In this they studied the differentiative features of the tumor by an adversarial learning methodology. Further they used a Deep Convolution Generative Adversarial Network for constructing realistic lung samples. They proposed this hypothesis to two different radiologists to test the “fake” nodules produced by the NN. The results are overwhelming as it will improve the diagnosis, help to train new radiologists, generate realistic samples to train NN on large data.

Introduction – Their contribution in medical imaging research was, first they use GAN framework for generating realistic images for sample data. Second, they are paired with expert radiologists for qualitative evaluation of the result produced by the NN. Lastly, their aim was to cluster nodules in malignant and benign on quantitively measures.

Literature Survey – Recent contribution of Ian Goodfellow proposed a new framework GAN i.e. Generative Adversarial Network that can learn form sample images and generate realistic images. Kamnitsas further founded invariant features that he used for unsupervised automatic brain lesion segmentation. These and other related work proved that GAN can help in improving the medical imaging in significant ways.