

## Homework 2

Due: 11:59 pm May 19

In this homework, we learn how to use variational autoencoder (VAE) to generate medical images. First, understand the code of VAE in <https://github.com/AntixK/PyTorch-VAE> . Then, take the chest X-ray dataset from <https://www.kaggle.com/paultimothymooney/chest-xray-pneumonia> and train a VAE model using code in the github link above on the chest X-ray dataset. Use the trained VAE to generate chest X-ray images, and write a report (2 pages, NeurIPS format). In the report, you can include the following: 1) hyperparameter settings; 2) training loss curves; 3) Inception score and FID score of generated images, using code from <https://pytorch-ignite.ai/blog/gan-evaluation-with-fid-and-is/> 4) examples of generated images. Submit the report to Gradescope.