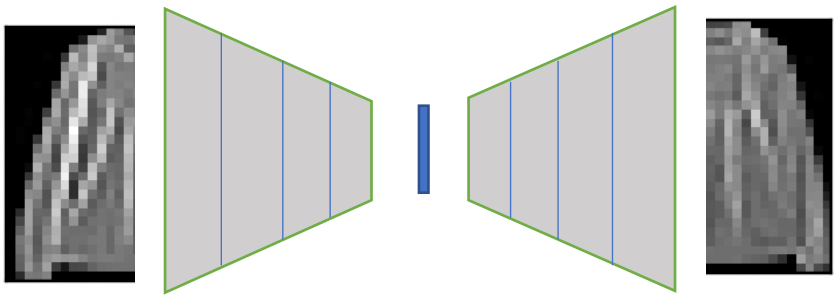
CS454-554 Homework 4: Convolutional Autoencoders
Spring 2022/2023

In this homework, you will implement a Convolutional Autoencoder, train it by the left half of the images in Fashion MNIST and try to predict their right half. An example input and expected output is shown below:



You need to obtain the dataset using the torchvision package, split the images into 2 so that your input is 28x14 and your output is 28x14. In the convolutional Autoencoder, the encoder part should have at least two convolutional layers and one fully-connected layer, and the decoder should be its mirror image architecturally. You should report your MSE loss progress across epochs and display the final output for five samples from each class from the test set.

You can modify the autoencoder template provided in the tutorial code file entitled:
autoencoder_example.py

This homework is due **May 24th (Wednesday), 23:00**.

Your submission should include a short report of your findings and your source code.

You must use Python and the PyTorch library to complete your implementation.

Upload your submission as one **zip file** that includes a .**pdf** file of your report and a **.py** file for your code. Your executable code should be named NAME_SURNAME_HW4.py. If your code does not compile, you will receive 0 points from the coding part of the assignment!