# ITP 359 Fall 2024

# Homework 6 20 points Generative adversarial network

Use a GAN to generate ‘apparel’ based on MNIST fashion dataset.

*2 points each*

1. Use *keras* to download the fashion MNIST dataset directly.

keras.datasets.fashion\_mnist.load\_data()

1. Visualize 25 apparel from the train dataset.

A black and white image of different types of clothing

Description automatically generated

1. Flatten and scale the train and test images.
2. Build the generator and discriminator networks.
3. Choose appropriate hyperparameters.
4. Build the GAN network.
5. Train the GAN network with at least 50 epochs.
6. Plot the loss curves for the discriminator and generator.
7. After the GAN is trained, generate and visualize 64 apparels.

A collage of images of a person's face

Description automatically generated

1. Comment on the generative quality of these fashion items!

*Please only submit the Python notebook. Be sure it has outputs.*