Name: Li-Kai Chuang
NetID(s): likaikc2

GAN and LSGAN MNIST

Show final results from training both your GAN and LSGAN (4x4 grid of images for both):

GAN:

LSGAN:

GAN and LSGAN Cats

Show final results from training both your GAN and LSGAN (4x4 grid of images for both):
Data Augmentation:
transforms.Resize(int(1.03 * imsize)),
transforms.RandomCrop(imsize),
transforms.ColorJitter(brightness=0.4, contrast=0.4, saturation=0.4, hue=0.1),
transforms.RandomHorizontalFlip(),

GAN:

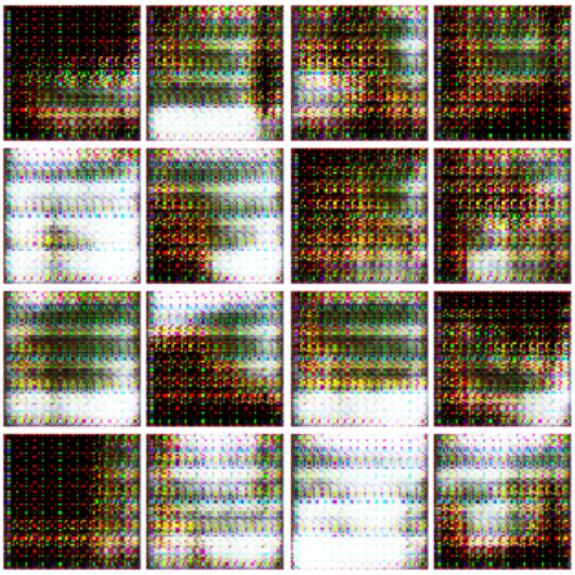
LSGAN:

Discuss any differences you observed in quality of output or behavior during training of the two GAN models.

In terms of the difference between GAN and LSGAN, for some reason the results of LSGAN turned out to be sharper, and have some sort of mask artifacts, whereas the original GAN looks cleaner, but blurrer.

Do you notice any instances of mode collapse in your GAN training? Show some instances of mode collapse from your training output.

First of all, I noticed that adding a sigmoid at the end of the Discriminator can make the model more stable. For a normal GAN, discriminator without sigmoid can work fine, whereas LSGAN tends to fail without sigmoid. The failure happens in the midpoint of training all of a sudden, even though previous epochs showed good results.



In terms of mode collapse, the output below has some sort of mode collapse artifact where images generated all look similar.