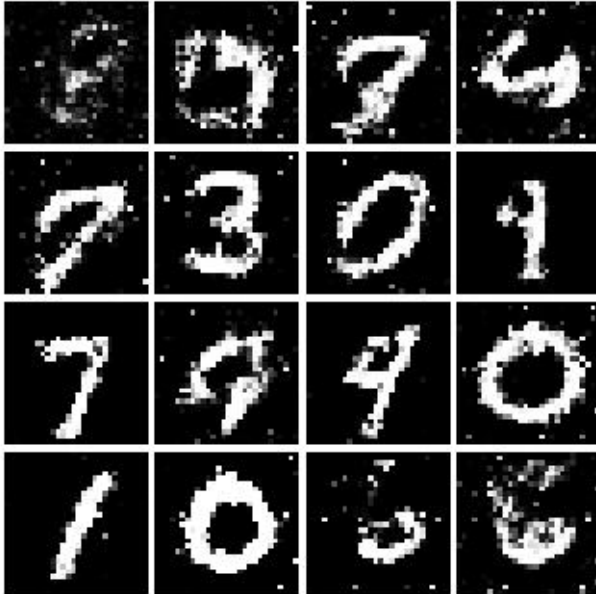


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NetID(s): ziyet3

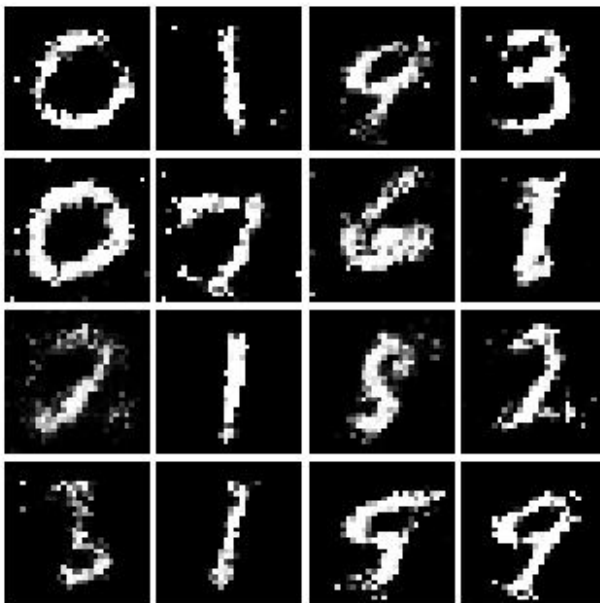
GAN and LSGAN MNIST

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):

GAN:



LSGAN:



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

As for the result, the images generated by LSGAN is a bit better than GAN. Especially, the cats' eyes generated by LSGAN is much more clear than those generated by GAN. And in the middle of training process (around epoch 29), LSGAN suddenly generated very bad-quality images, which looks much worse than those generated in previous epochs. But the image quality finally got better and better in later epochs. However, GAN's image quality changes stably: sometimes improve a little bit, and sometimes get a bit worse.

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

Here are some instances of mode collapse where lots of similar images are generated:

Epoch 18



Epoch 23



Epoch 48



Epoch 50



Extra Credit - Alternative GAN Formulation

Explain what you did (describing all model changes and hyperparameter settings) and provide output images.