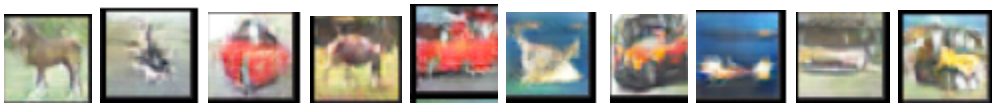
Jacob Justice

Homework 3

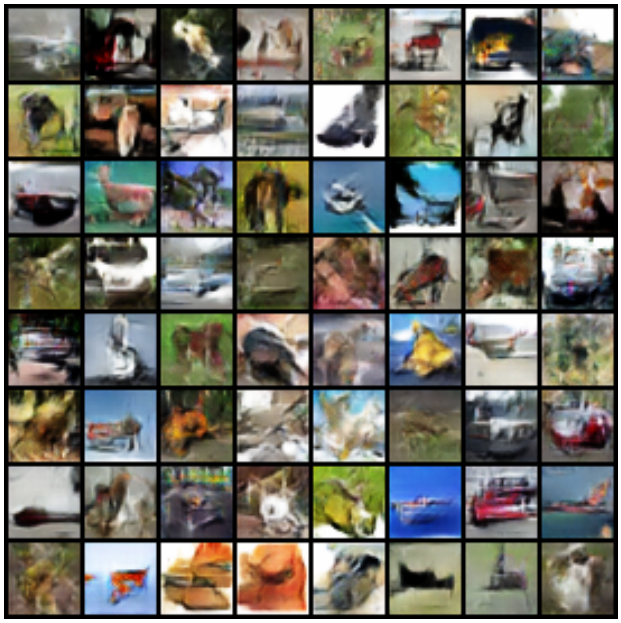
DCGAN

My pictures:



In some of my pictures it's clear that it's an animal, firetruck, or objects floating in the water, but the low resolution and general blurriness of the image makes it hard to tell what is going on. I don't think the images are indistinguishable from the ground truth but it is interesting to see how close it has gotten

Pictures from https://wandb.ai/sairam6087/dcgan/reports/DCGAN-on-CIFAR-10--Vmlldzo5NjMyOQ:



My pictures are a little washed out, when compared to the saturated colors from the DCGAN I found online, but the actual content is relatively equal I would say.

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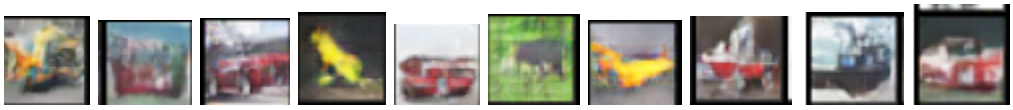
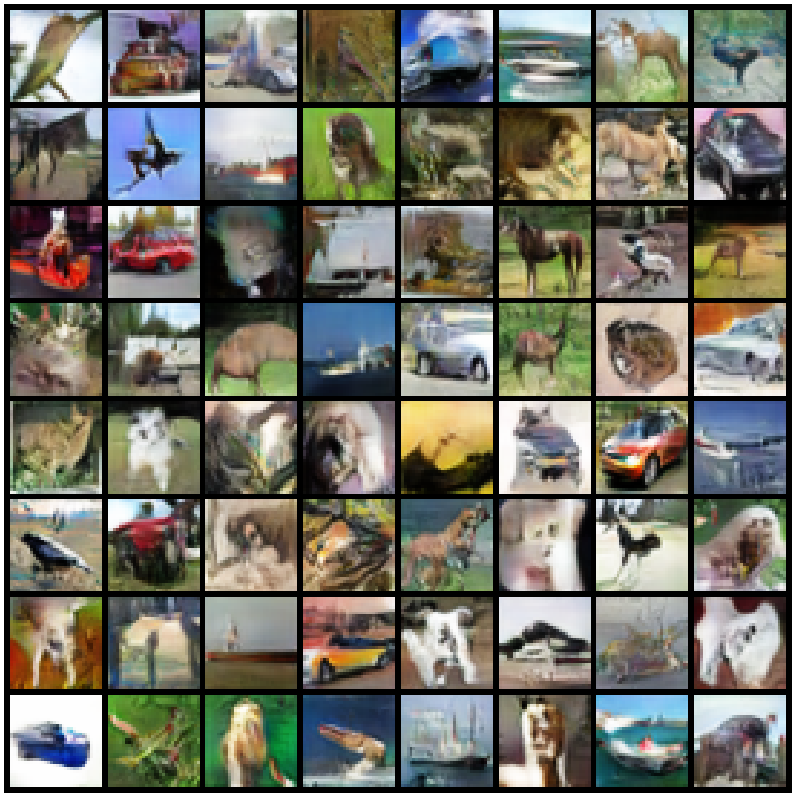
WGAN

My best 10 pictures:



Compared to DCGAN, WGAN performs noticeably better. The colors are much closer to the actual dataset, and many pictures of cars and truck actually look extremely accurate.

Pictures from https://github.com/anibali/wgan-cifar10:



Compared to the WGAN I found online, my pictures look only slightly fuzzier. I assume this is because their model was able to train for a longer period of time.

In general, WGAN performs significantly better than DCGAN. I'm sure by tweaking hyperparameters I could improve the performance of both of my models. WGAN took a significantly longer amount of time to converge on something reasonable, as the learning rate was specified to be much lower.

Overall, I'm quite proud of the performance of both of my models.