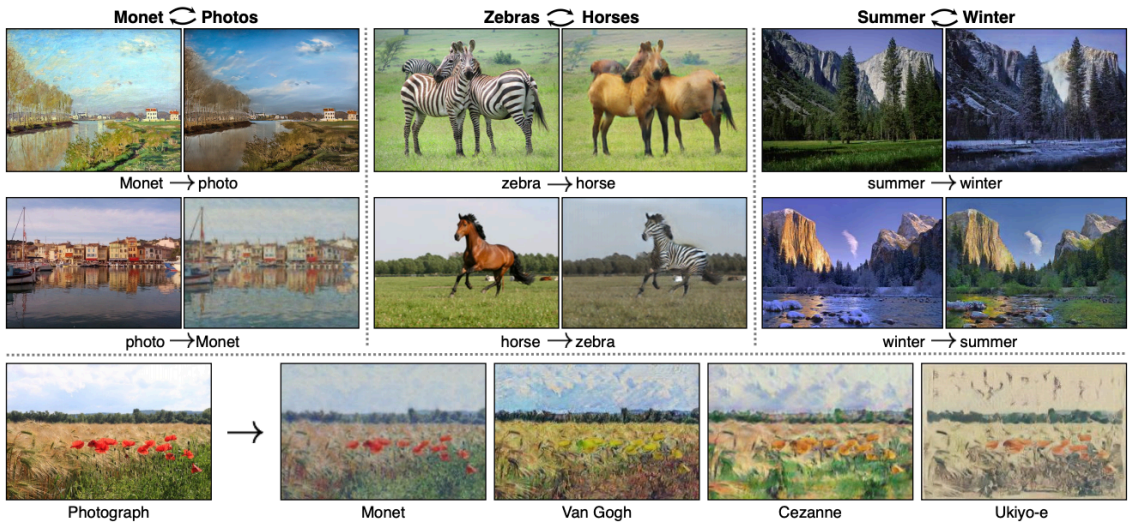
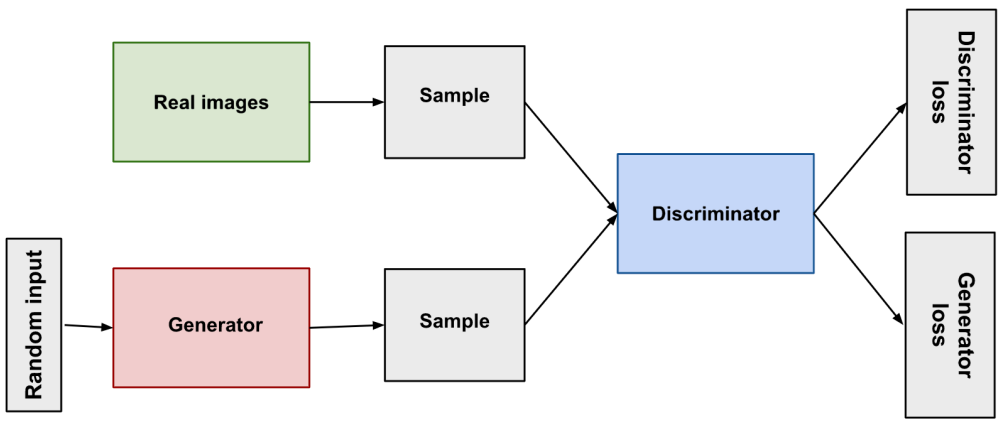
Unpaired Image-to-Image Translation

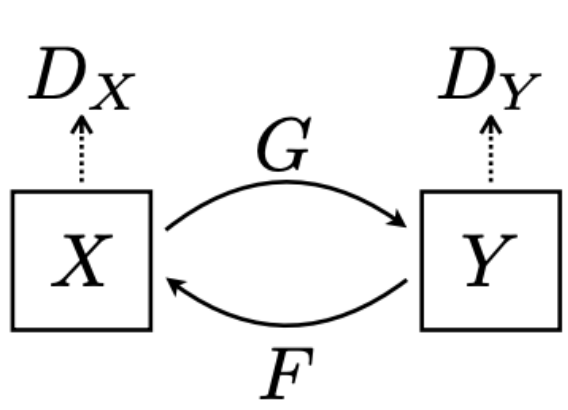
How to transform images from one set to another.



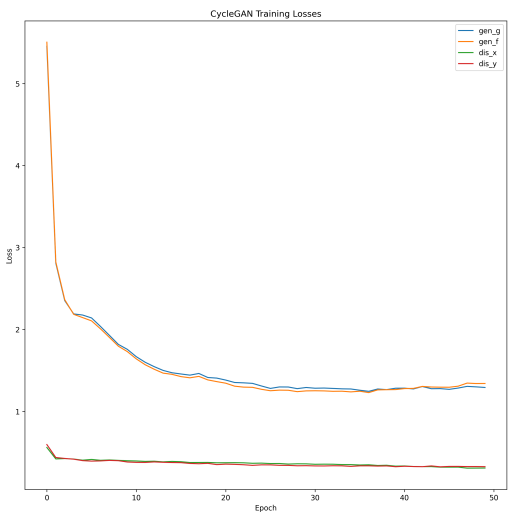
Results from the CycleGAN publication by Zhu, Park, Isola, and Efros from UC Berkley [1].

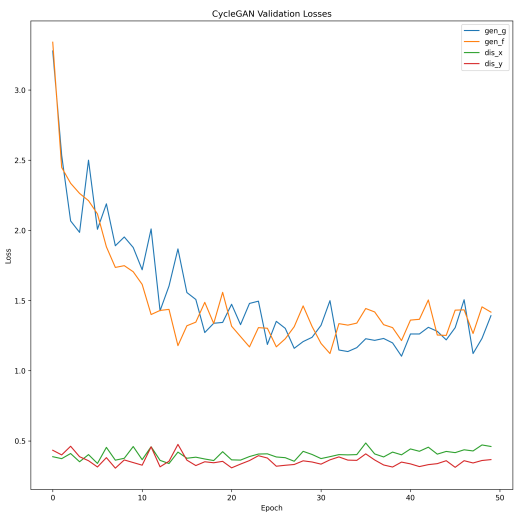


Generative Adversarial Networks (GANs) can learn to generate authentic looking images from vectors. This is done by training 2 competing networks [2].

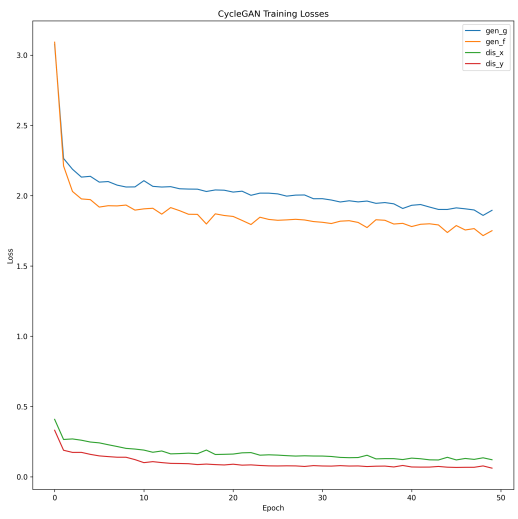


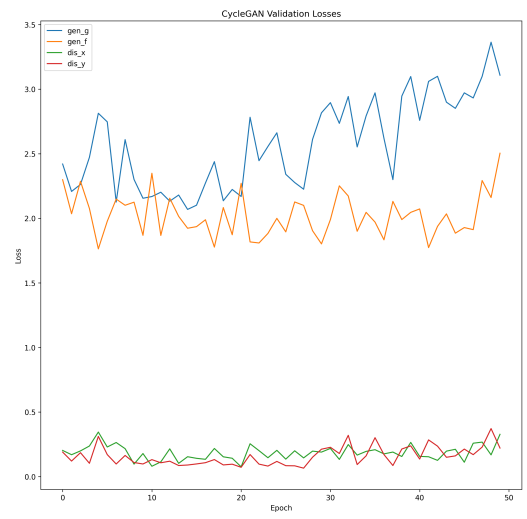
The CycleGAN trains 2 GANs to form a cycle. This added restriction improves training stability for translating images [1].





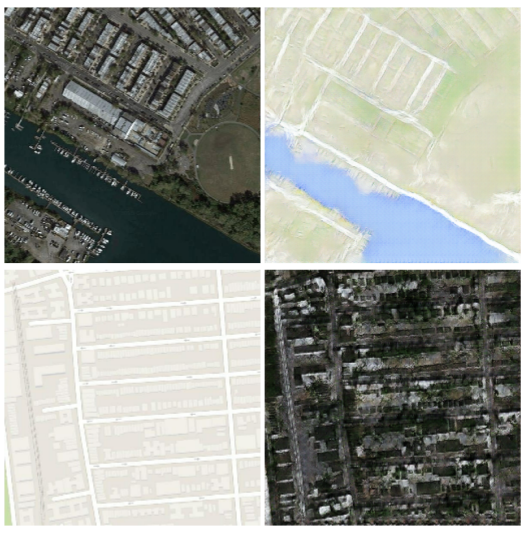
Cezanne to photo training & validation losses by training epoch.





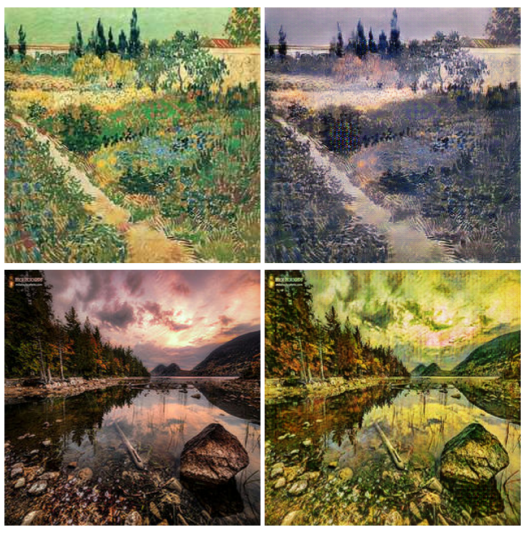
Satellite image to map training & validation losses by epoch.

Cezanne to photo validation output at epoch 44.



Satellite image to map validation output at epoch 17.

Horse to zebra validation output at epoch 47.



Van Gogh to photo validation output at epoch 49.

References

[1] J. Zhu*, T. Park*, P. Isola, and A. Efros. Unpaired Image-to-Image Translation using Cycle-Consistent Adversarial Networks, in IEEE International Conference on Computer Vision (ICCV), 2017. (* indicates equal contributions)

[2] *Overview of GAN* Structure | *Generative Adversarial Networks*. Google Developers. May 24, 2019. Accessed on: Aug 9, 2021. Available: https://developers.google.com/machine-learning/gan/gan_structure