Style Transfer

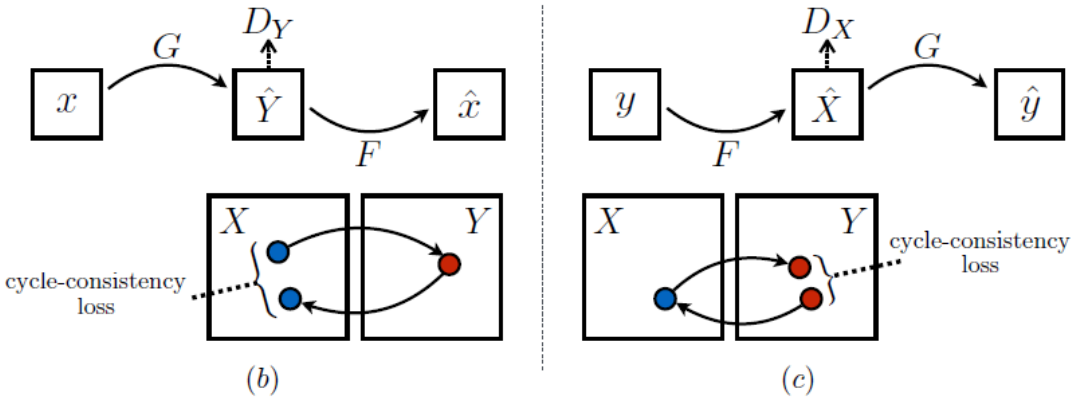
GAN -> DCGAN ->CycleGAN，DiscoGAN ..++

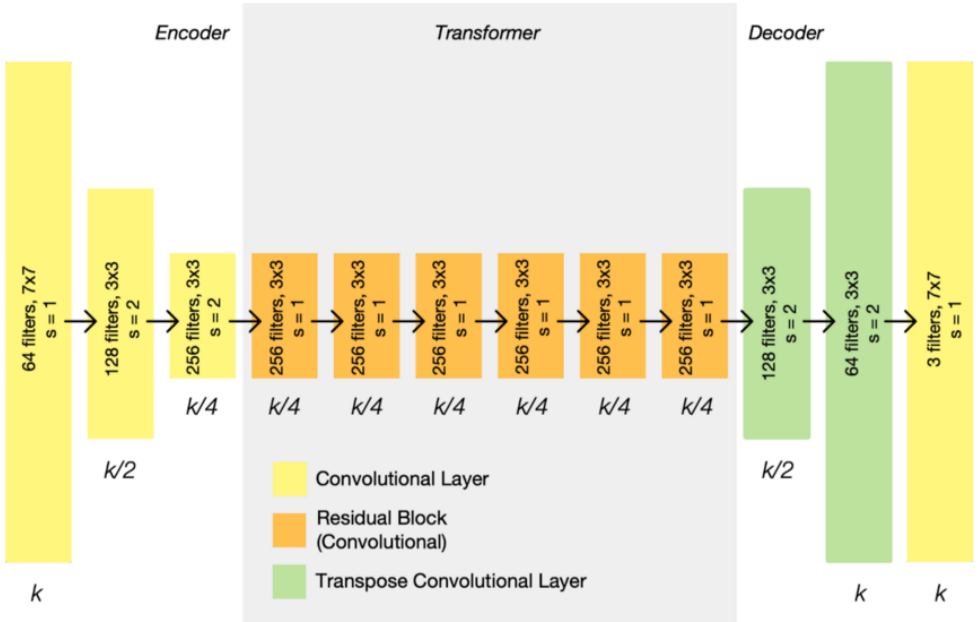
Dataset

Training Dataset
- Size : 1327
- Batch size : 1
- Input data size : 256*256

Test Dataset
- Size : 140
- Input data size : 256*256

CycleGAN structure





Learning rate : 2e-4 /LambdaLR scheduler
Batch size:1
Epoch : 200
Optimizer : Adam
Loss function :
- GAN loss: MSELoss()
- Cycle loss:L1Loss()
- Identity loss:L1Loss()

Result

Zebra => Horse






Horse => Zebra





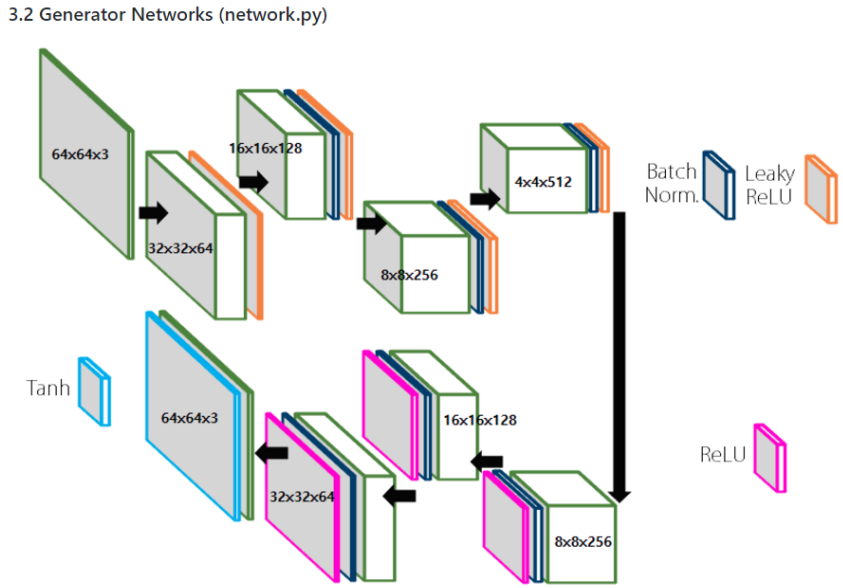

Horse -> Zebra

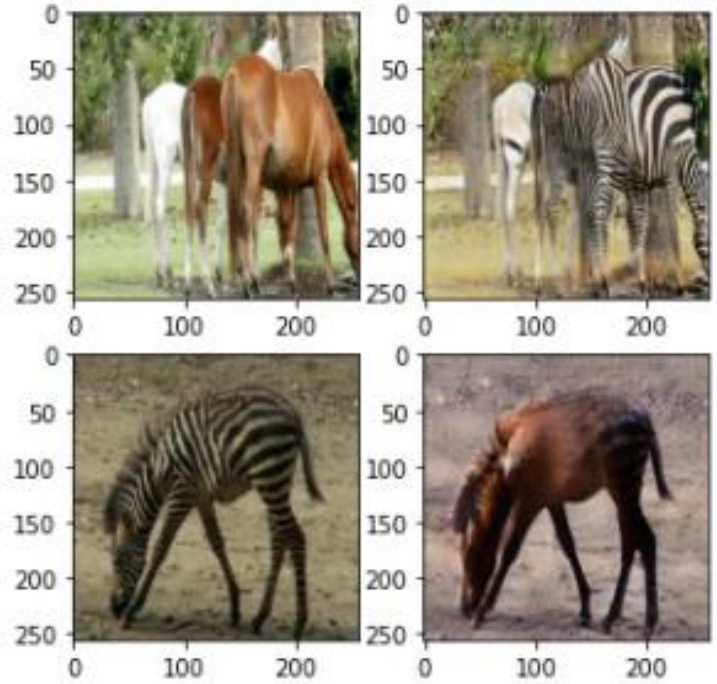
Zebra -> Horse

Failure

=>Dataset problem

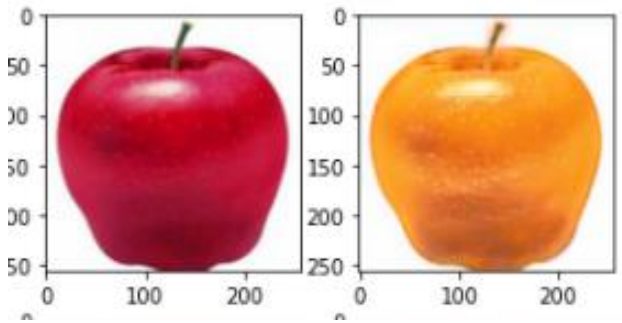
DiscoGAN





- Encoder-Decoder structure
- Cycle Loss : L2 Loss (MSE Loss)
- Generator Training :
  Cycle Loss, GAN Loss+ Feature Loss (ImprovedGAN)
- Backpropagation

CycleGAN (apple -> orange)

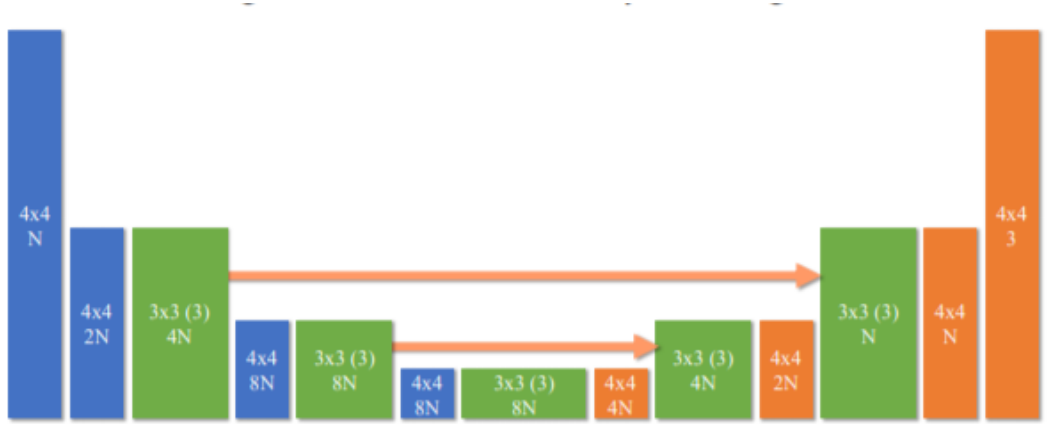


Improving Shape Deformation in Unsupervised Image-to-Image Translation

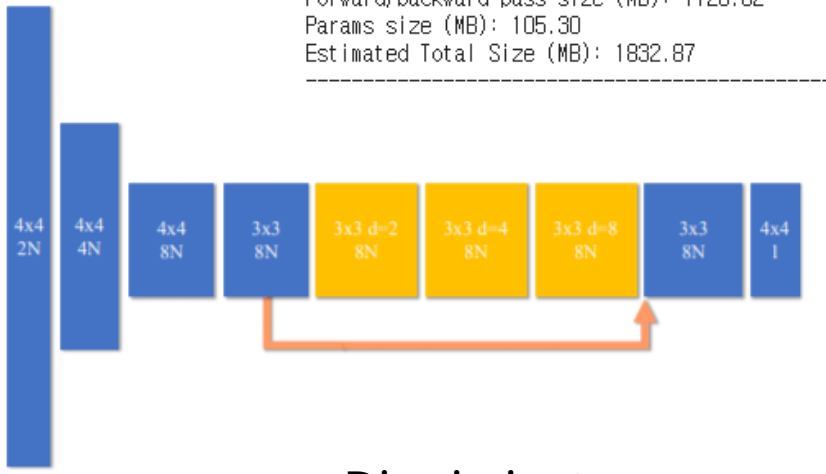
Aaron Gokaslan[1], Vivek Ramanujan[1], Daniel Ritchie[1],
Kwang In Kim[2], James Tompkin[1]

[1] Brown University, USA
[2] University of Bath, UK

```
================================================================
Total params: 27,603,331
Trainable params: 27,603,331
Non-trainable params: 0
----------------------------------------------------------------
Input size (MB): 0.75
Forward/backward pass size (MB): 1726.82
Params size (MB): 105.30
Estimated Total Size (MB): 1832.87
----------------------------------------------------------------
```



Generator



Discriminator