

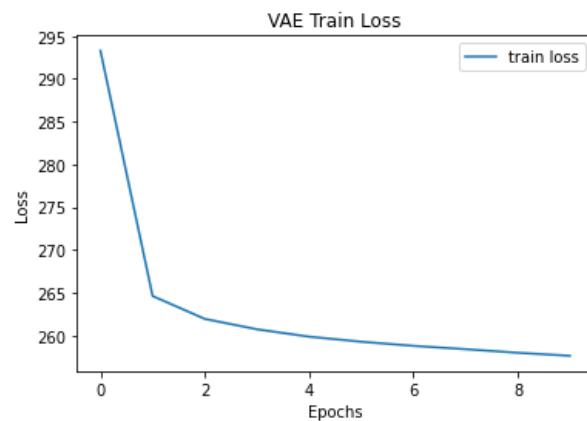
VAE GANS Report

By Ishani Mhatre, Ruchi Gupte

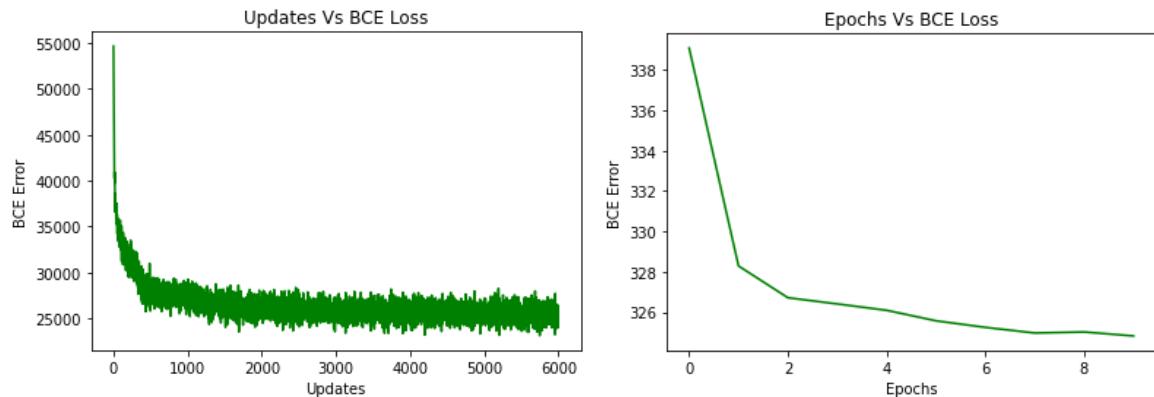
VAE Results

Loss Curves:

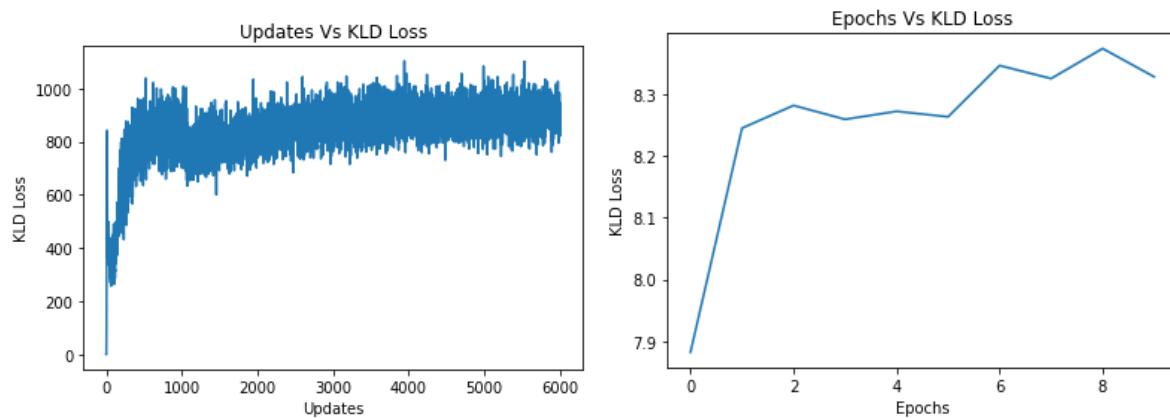
Total loss = Reconstruction + KL Loss



Reconstruction loss curve:

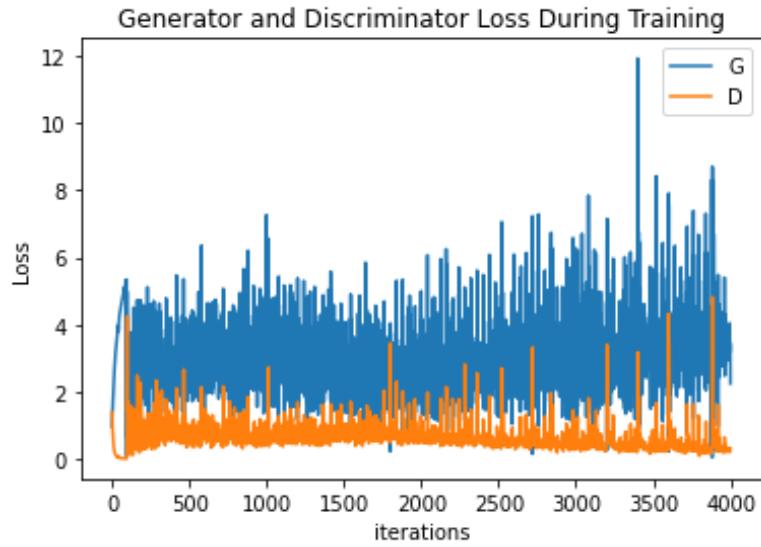


KL divergence loss Curve

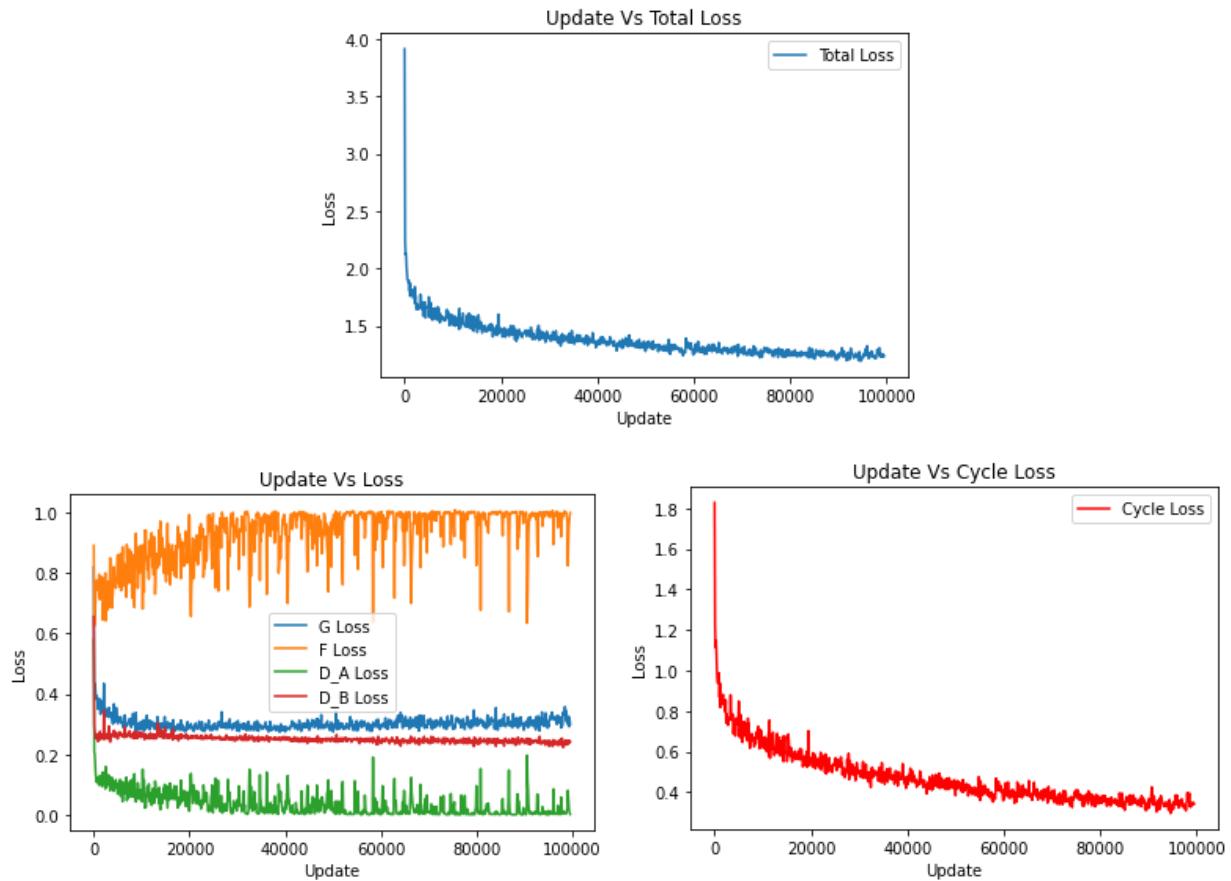


GANs Results

Generator loss and Discriminator loss curve



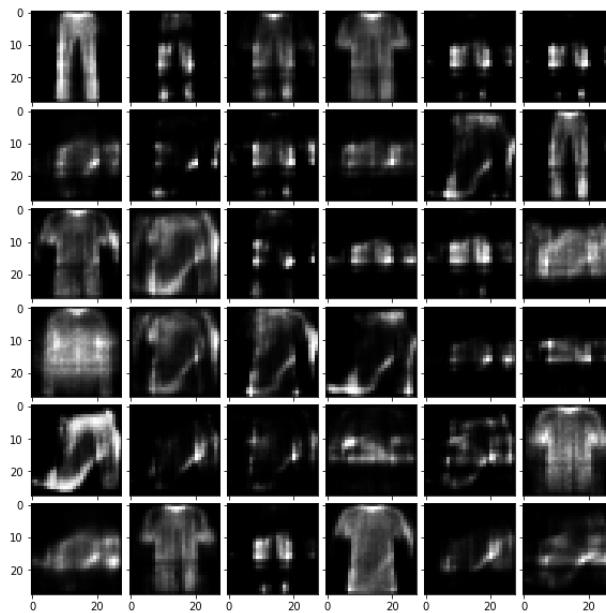
CycleGAN Results



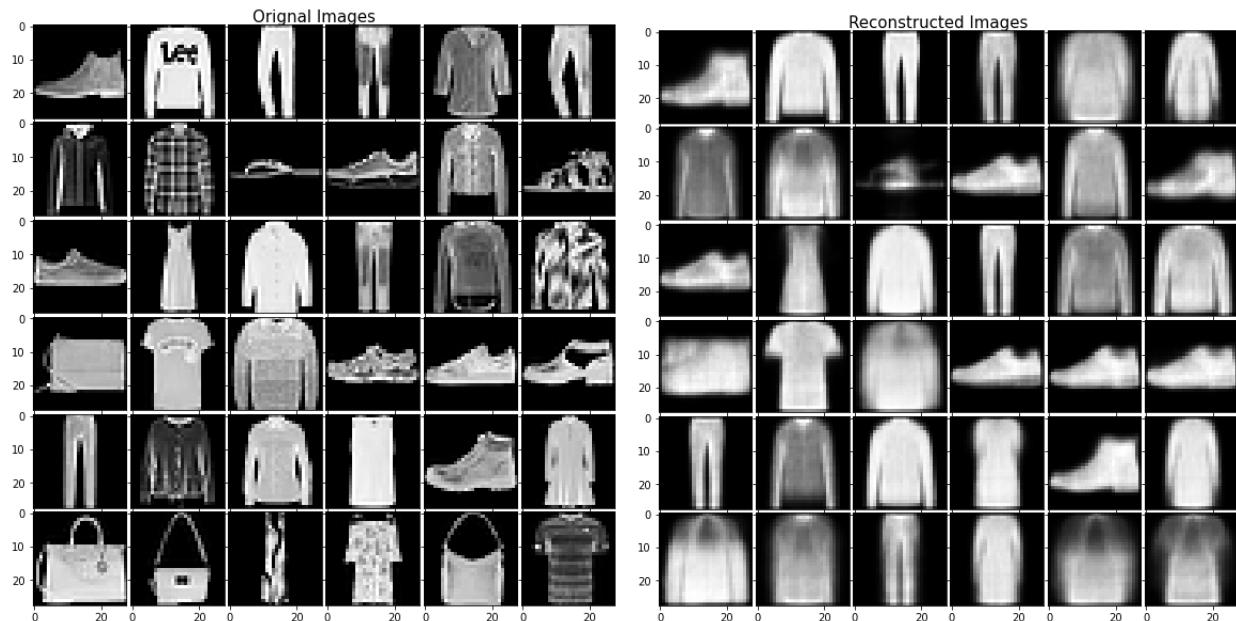
Qualitative Evaluation

VAE

Generated from Noise:

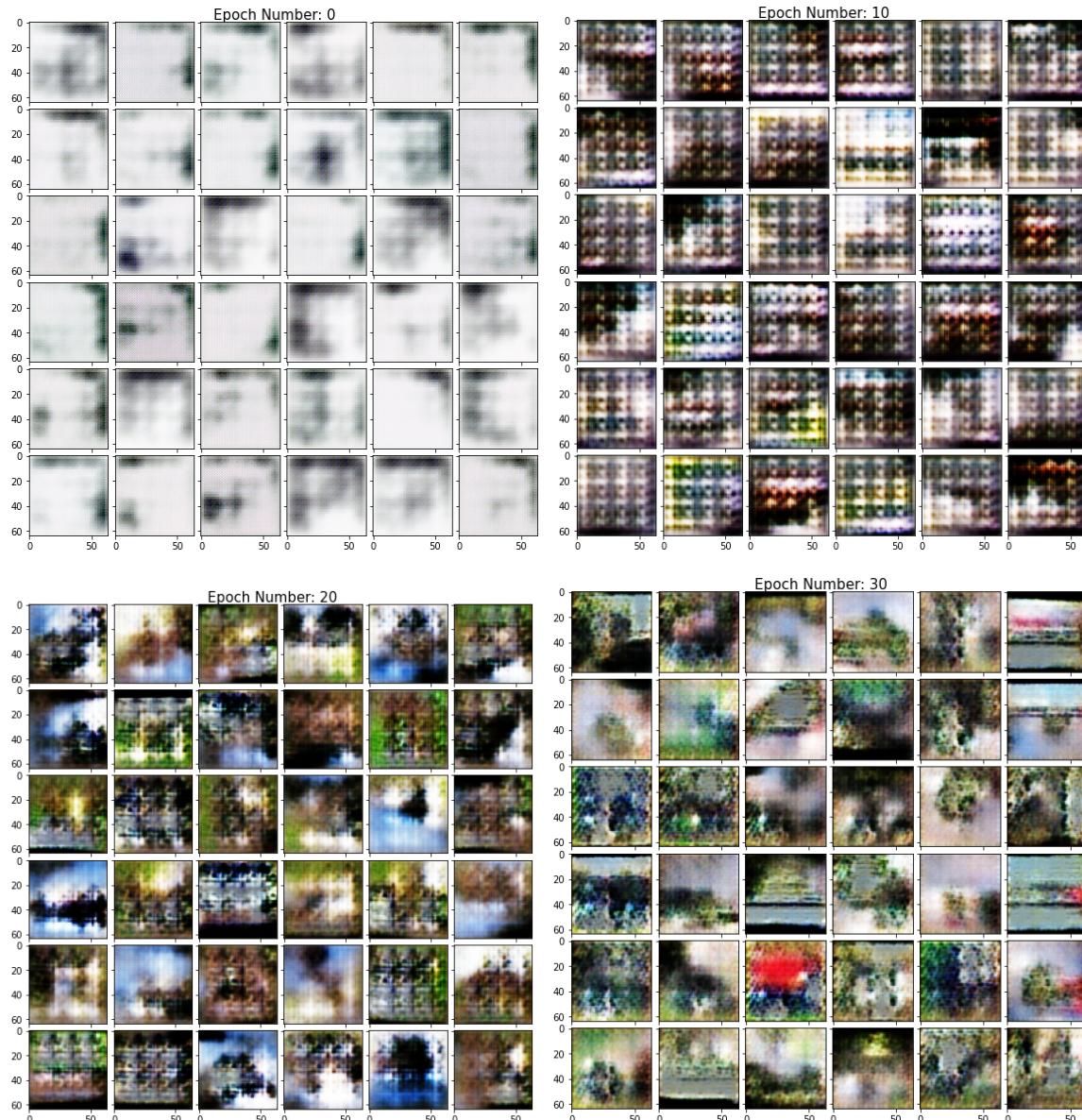


Using Following Original Images



GANS

Visualized Grid from 0 to 90 for every 10 epochs:

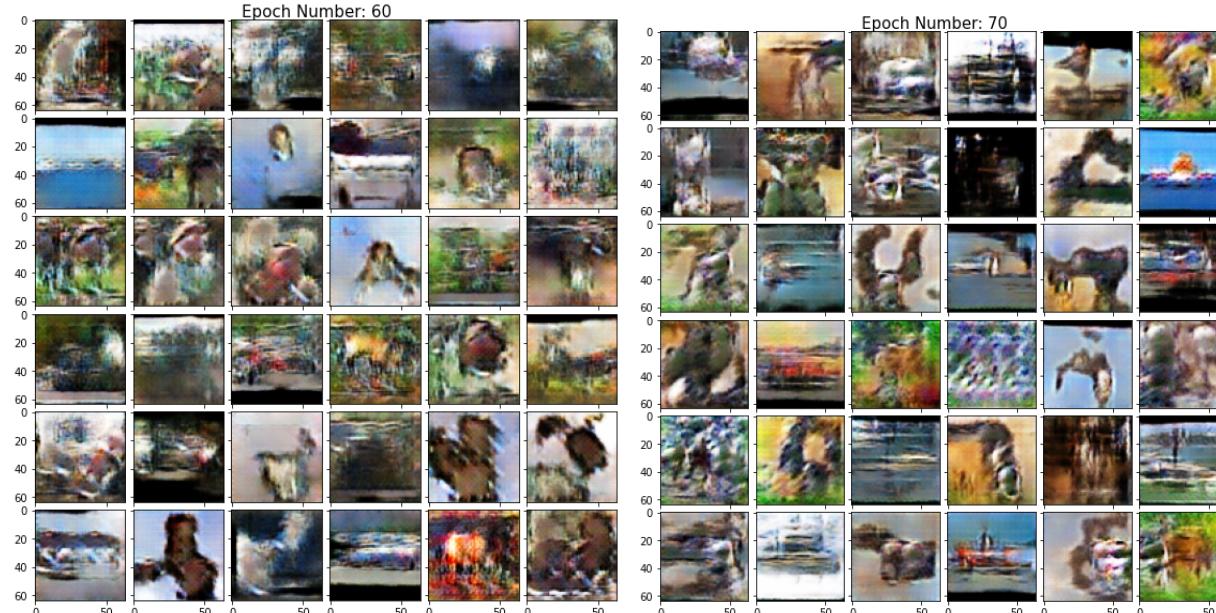


Epoch Number: 40



Epoch Number: 50

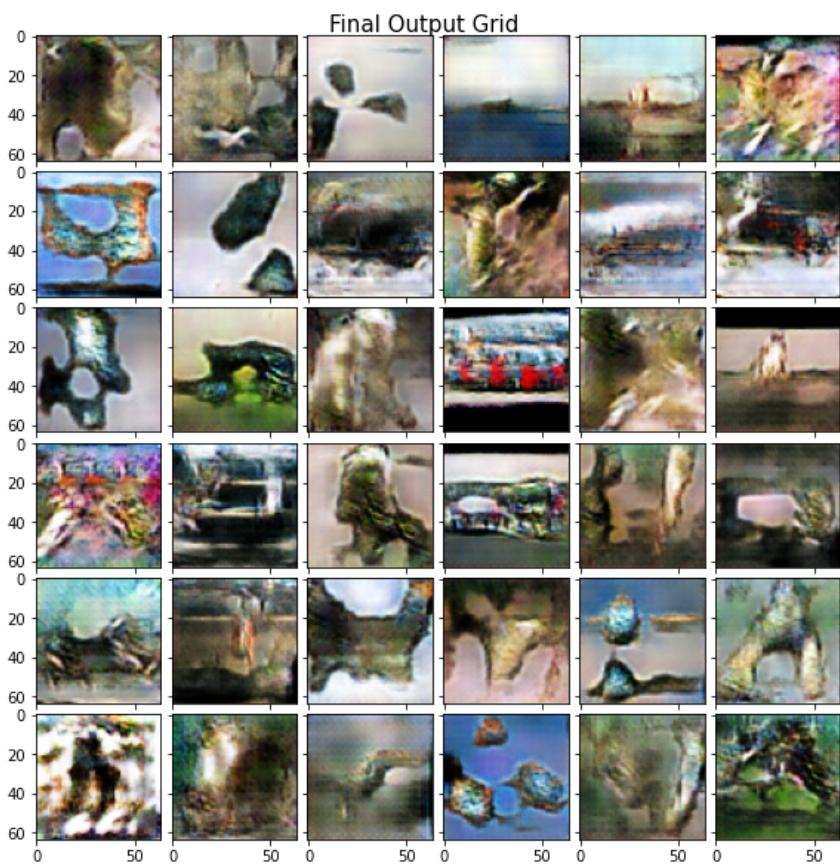
Epoch Number: 60



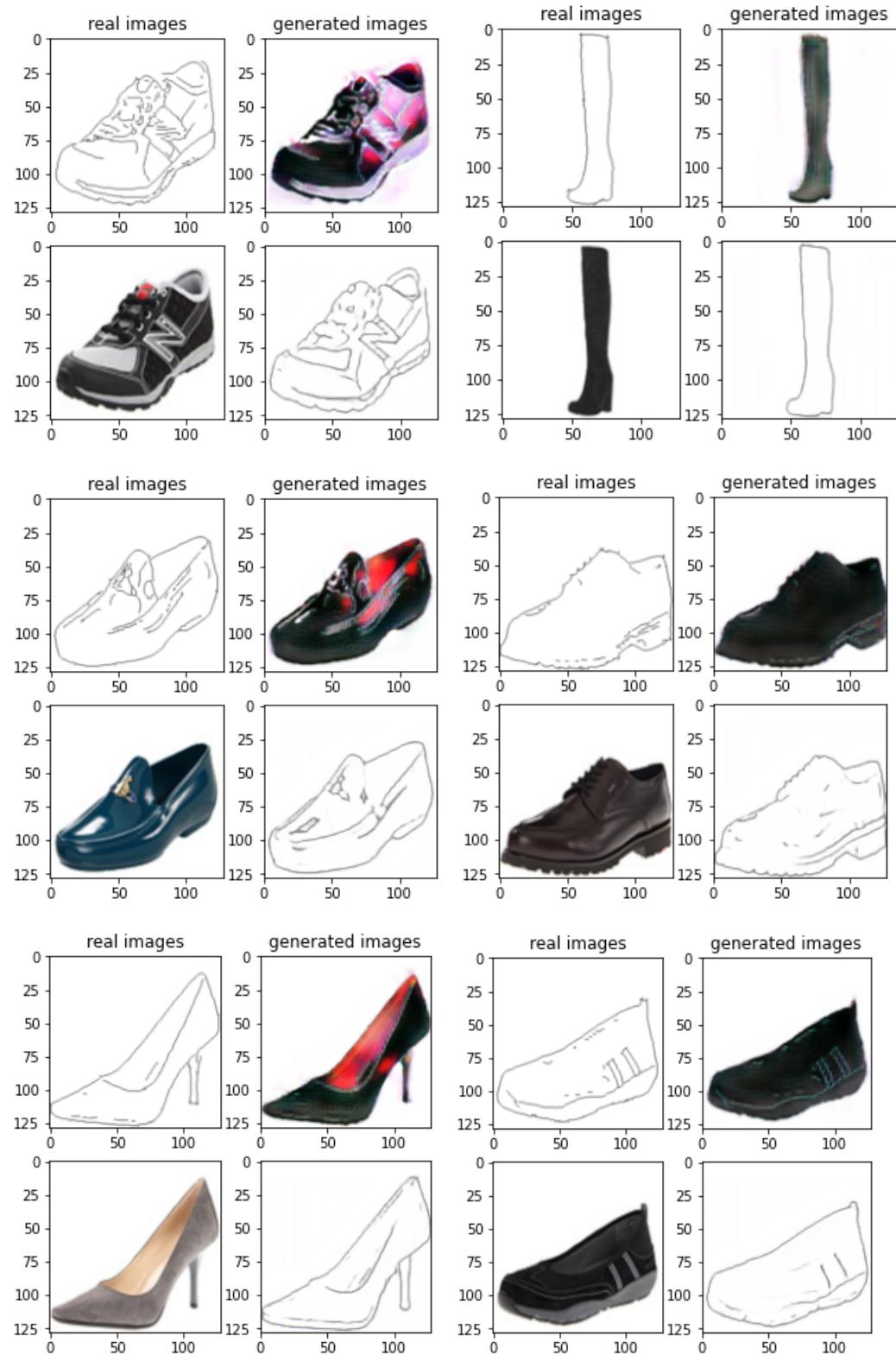
Epoch Number: 70



Final Output after 100 epochs.



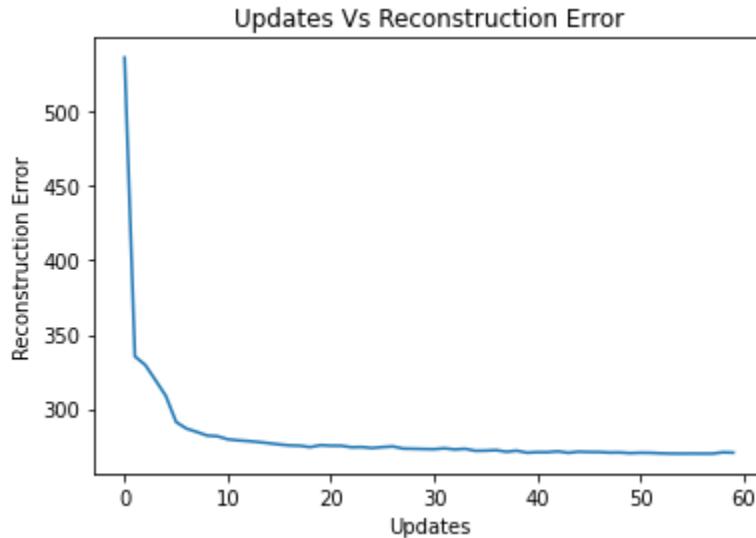
Cycle GAN



Quantitative Evaluations

VAE

Final Reconstruction Error: 270.5832214355469



Inception Score (IS):

Image Set	IS VAE
Real image set	4.2342
Generated image set	2.3772

GANS

Image Set Pair	FID GAN	Image set	IS GAN
STL-10 real set 1 vs STL-10 real set 1	-2.2891e-05	STL-10 real set 1	14.6234382
STL-10 real set 1 vs STL-10 real set 2	37.675688	STL-10 real set 2	15.9134497
STL-10 real set 1 vs STL-10 generated set	211.29145	STL-10 generated set	2.361471

Cycle GAN

Image Set Pair	FID CycleGAN	Image set	IS CycleGAN
real_edge 1 vs real_edge 2	49.9680413	real_edge1	1.00380880
real_edge 1 vs generated_edge	70.78322	generated_edge	1.00304089
real_shoe 1 vs real_shoe 2	60.5039705	realshoe 1	3.98384848
real_shoe 1 vs generated_shoe	112.75014	generatedshoe	3.17458946