



# Autoencoder- visual results

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All the results are after 200 epochs.

For all the results: L2 loss and parameters - Adam  $\beta_1 = 0.9$ , Adam  $\varepsilon = e^{-8}$ , Adam weight decay=0.

Parameter Results number	Learning rate	Leaky ReLU slope	Batch normalization $\varepsilon$	Batch normalization momentum	Adam $\beta_2$	Train Loss
1	0.00305	0.0056	$3e^{-6}$	0.3	0.9	0.00331
2	0.0004	0.006	$e^{-5}$	0.1	0.999	0.00326
3	0.0008	0.006	$e^{-5}$	0.1	0.999	0.00325
4	0.0001	0.006	$e^{-5}$	0.1	0.999	0.00361
5	0.0002	0.008	$e^{-5}$	0.1	0.99	0.00336

IMG Test Loss								
1: 0.00366								
2: 0.00370								
3: 0.00371								
4: 0.00372								
5: 0.003735								

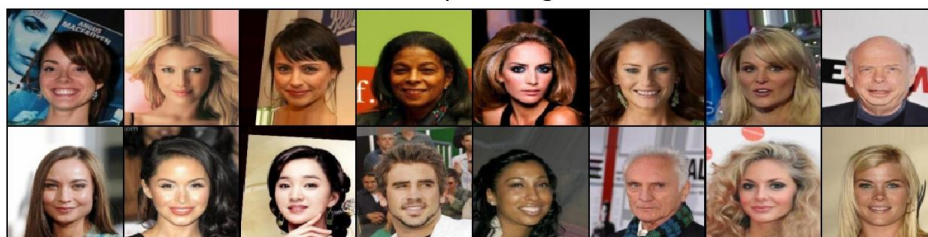
IMG Test Loss								
1: 0.00366								
2: 0.00370								
3: 0.00371								
4: 0.00372								
5: 0.003735								

We also tried a deeper network and got the following result:

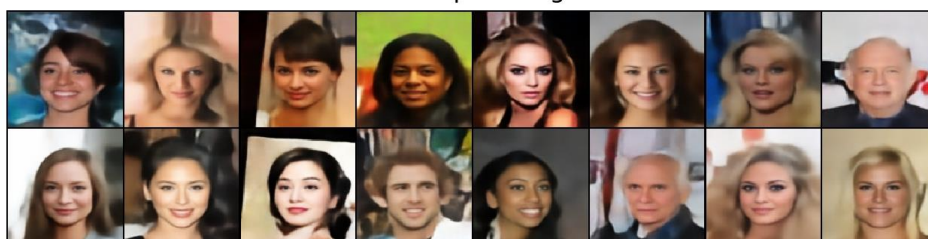
Parameters	Learning rate	Leaky ReLU slope	Batch normalization $\epsilon$	Batch normalization momentum	Adam $\beta_2$	Epochs
	0.0002	0.006	$e^{-5}$	0.1	0.999	600

Train Loss	Test Loss
0.00252	0.00410

Test input images



Test output images



Test input images



Test output images

