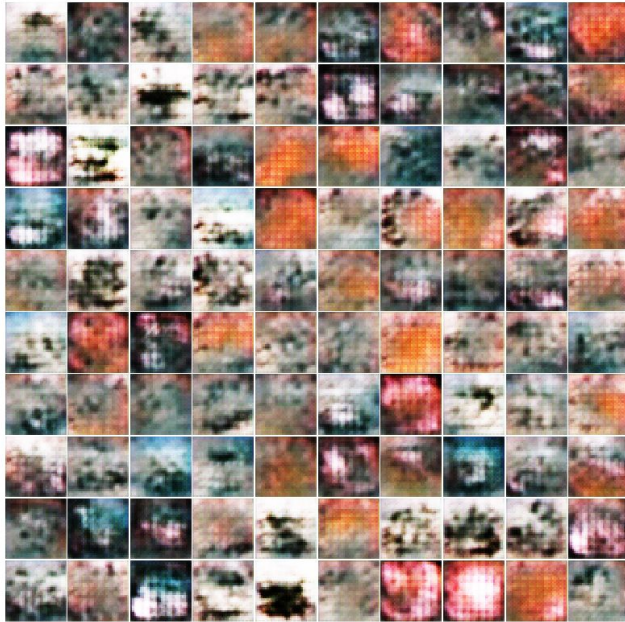


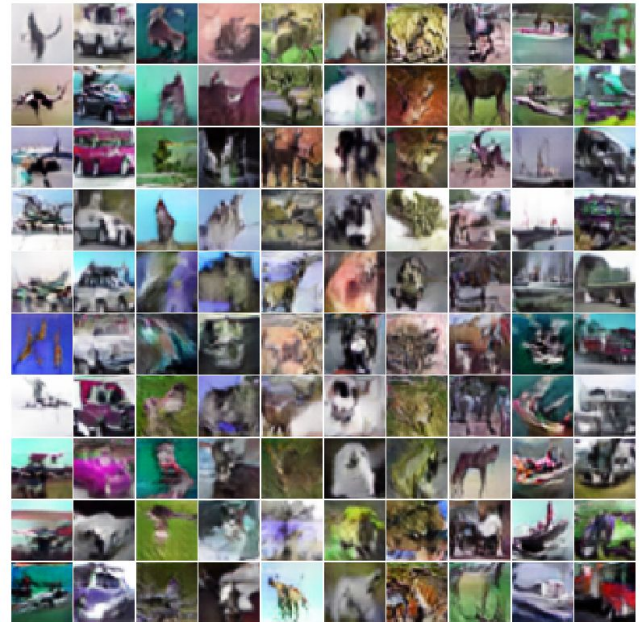
HW7 - Understanding CNNs and Generative Adversarial Networks

Qiyang Chen

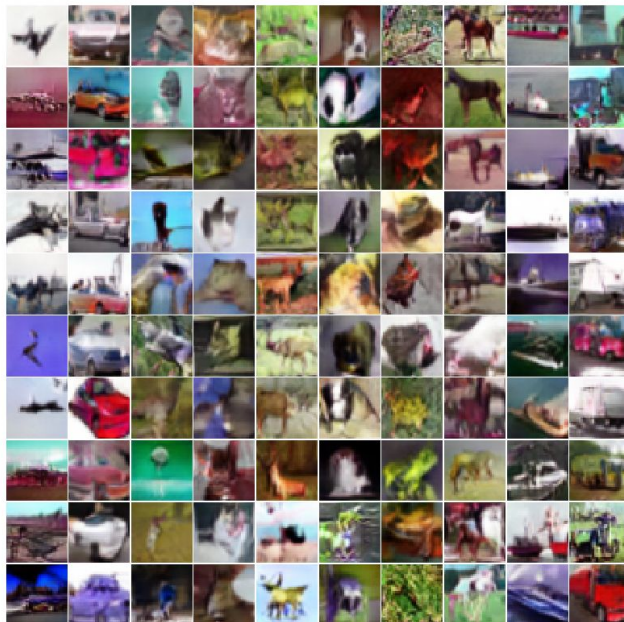
1.Generated Image



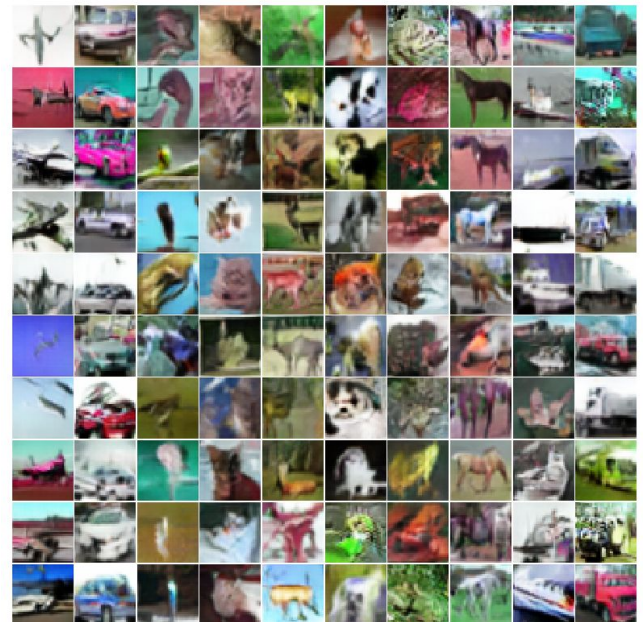
Epoch 0



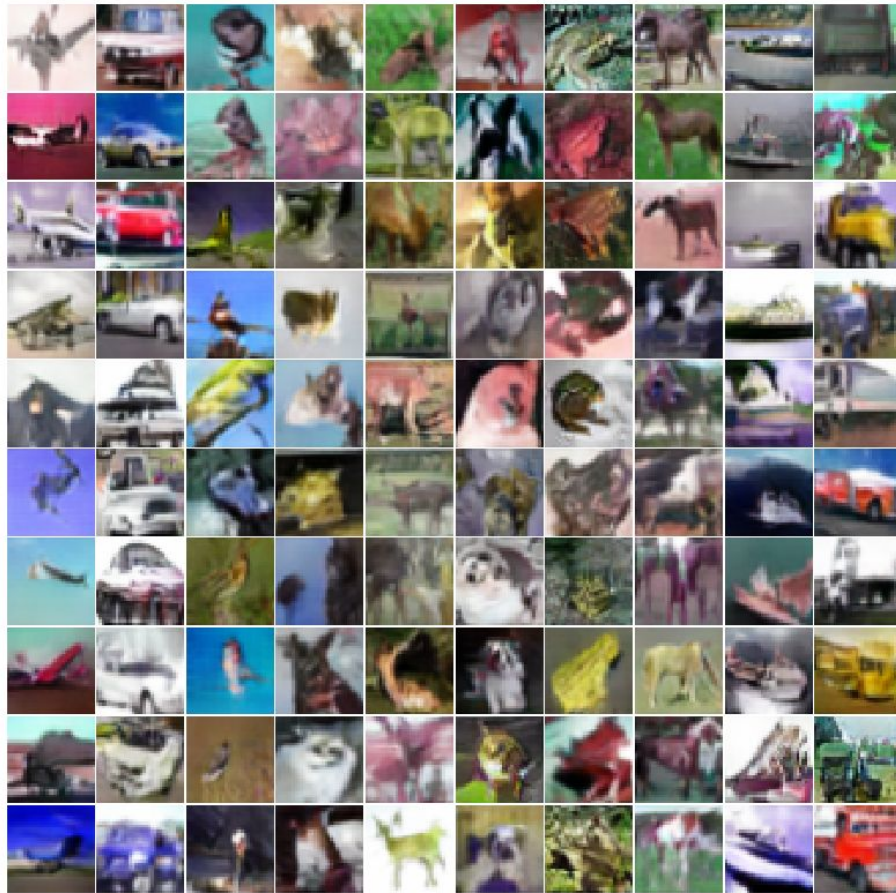
Epoch 30



Epoch 90

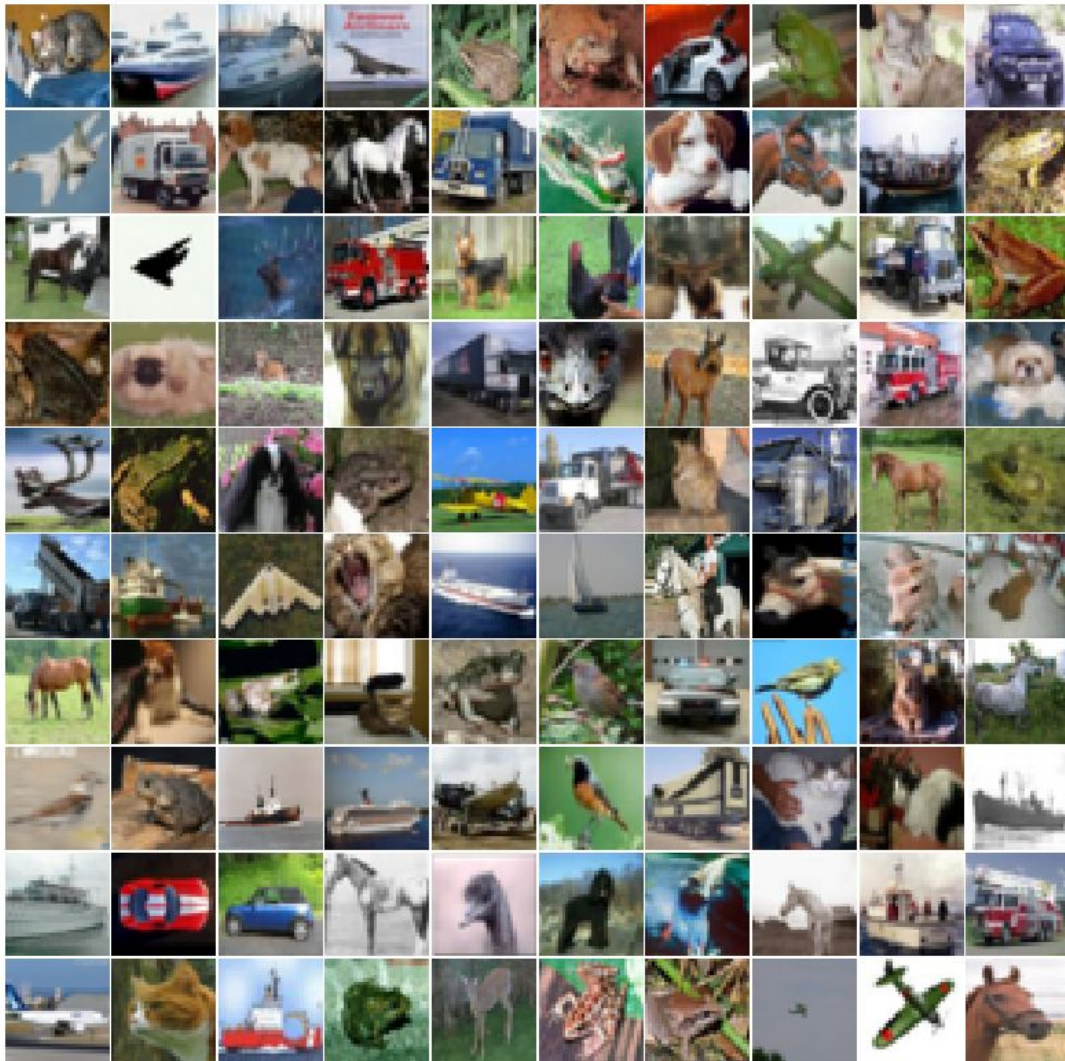


Epoch 120

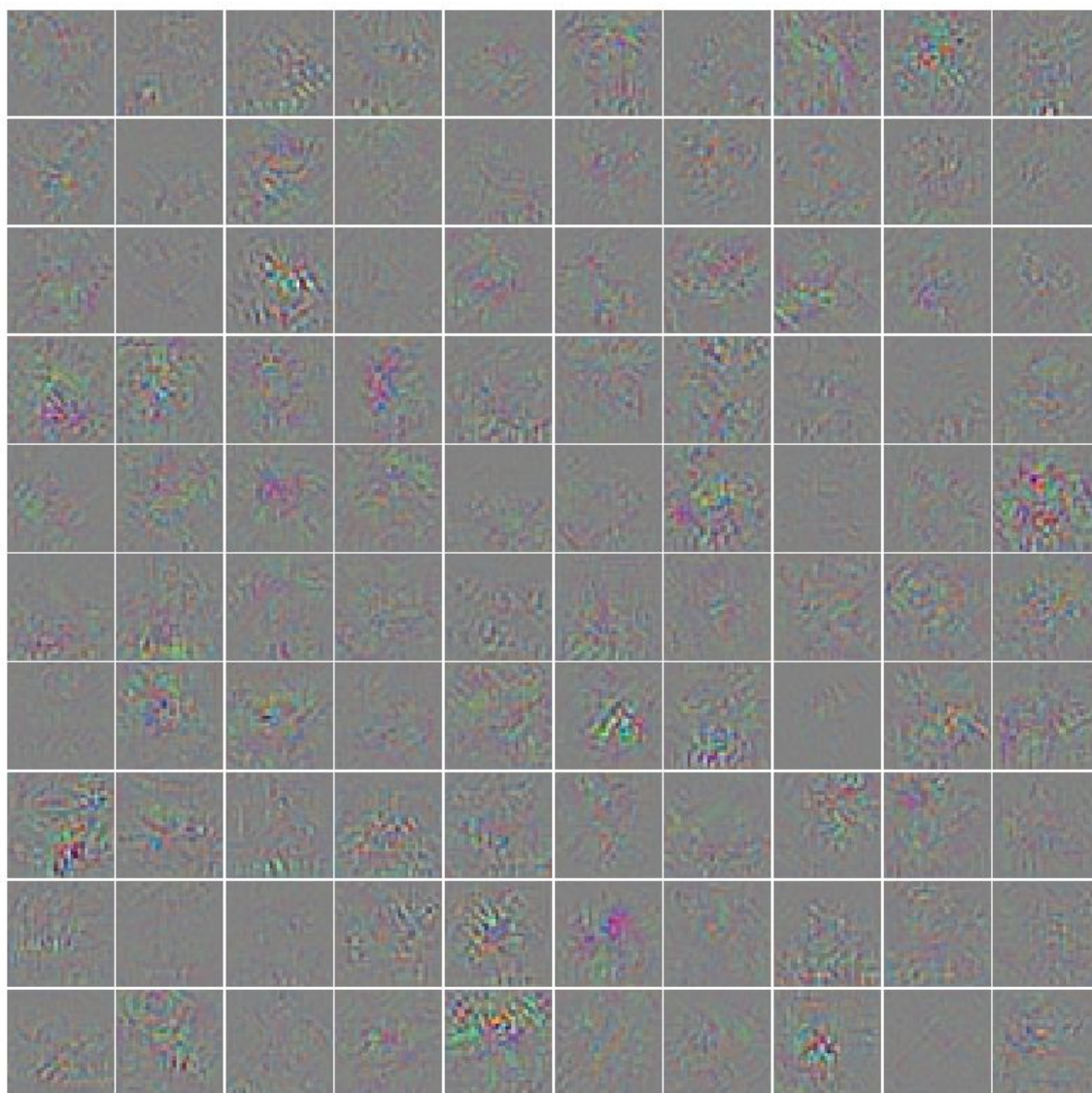


Epoch 180

2.Real images, Gradients images

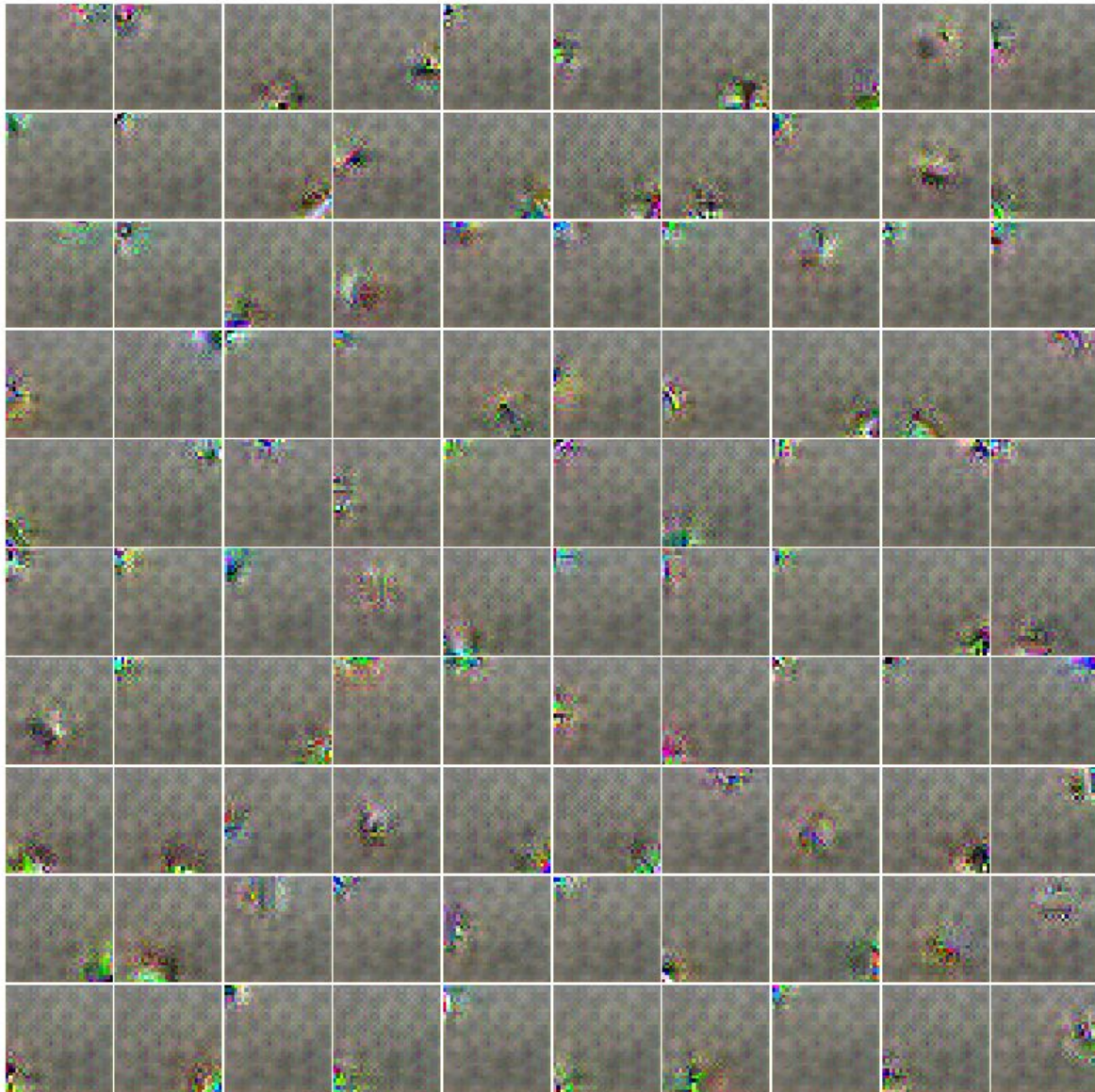


Real image



Gradient Image

3.Synthetic images (without generator)

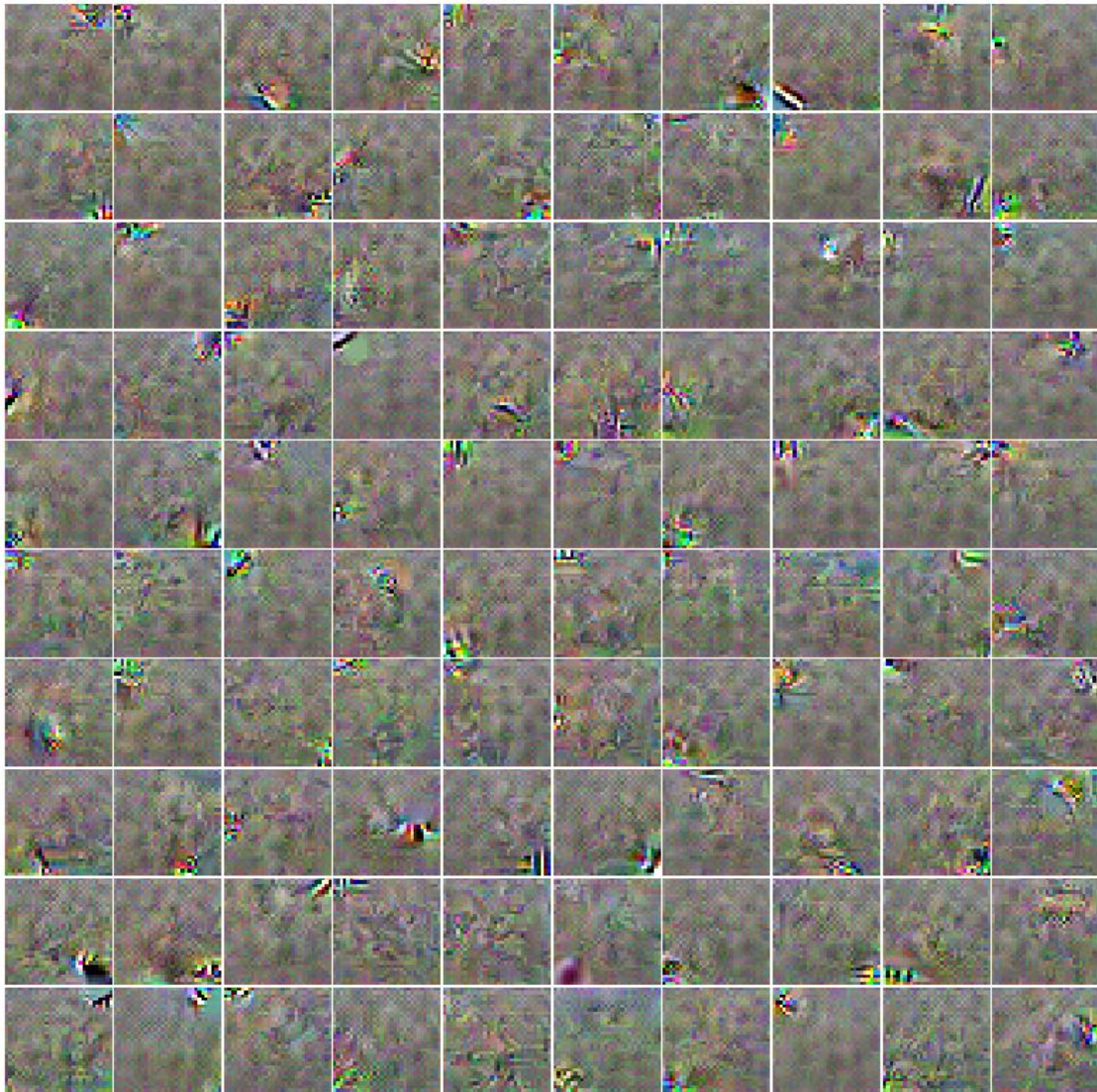


Synthetic Image (Maximizing Layer 4 without generator)

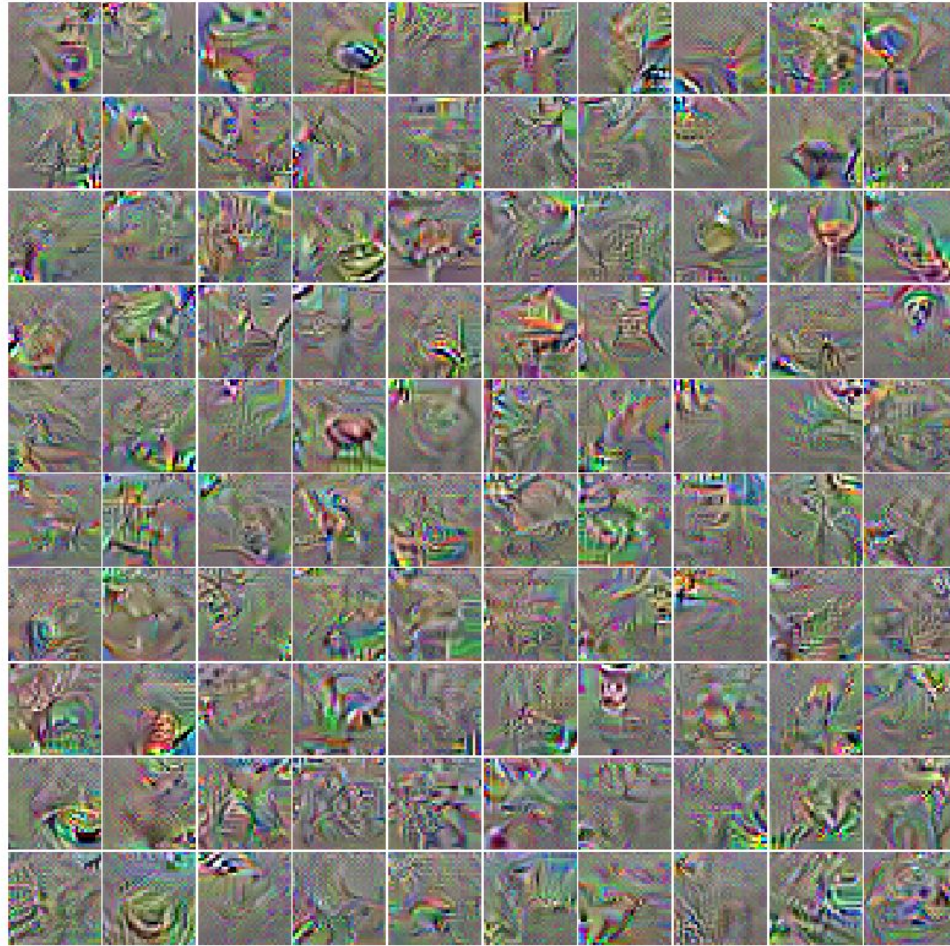


Synthetic Image (Maximizing Layer 8 without generator)

4.Synthetic images (with generator)



Synthetic Image (Maximizing Layer 4 with generator)



Synthetic Image (Maximizing Layer 8 with generator)

5. Test accuracy

The results below is Discriminator without generator after training 120 epochs.

==> Saving model at epoch: 115

epoch: 117 | Loss: 0.029912312332543 | Training accuracy: 99% | Test accuracy: 88%

epoch: 118 | Loss: 0.02957444434762001 | Training accuracy: 99% | Test accuracy: 88%

epoch: 119 | Loss: 0.030137124418616295 | Training accuracy: 99% | Test accuracy: 88%

epoch: 120 | Loss: 0.030421401546646778 | Training accuracy: 99% | Test accuracy: 88%

Test accuracy is 88 %.

The results below is Discriminator with generator after training 200 epochs.

Training epoch: 199 | Accuracy: 83.14597479738697 | Batch: 0 |

Training epoch: 199 | Accuracy: 83.16071606658002 | Batch: 100 |

Training epoch: 199 | Accuracy: 83.17455464564388 | Batch: 200 |

Training epoch: 199 | Accuracy: 83.18231432321153 | Batch: 300 |

Testing accuracy: 82.01%

Test accuracy is 82.01 %.