IMAGE COLORIZATION

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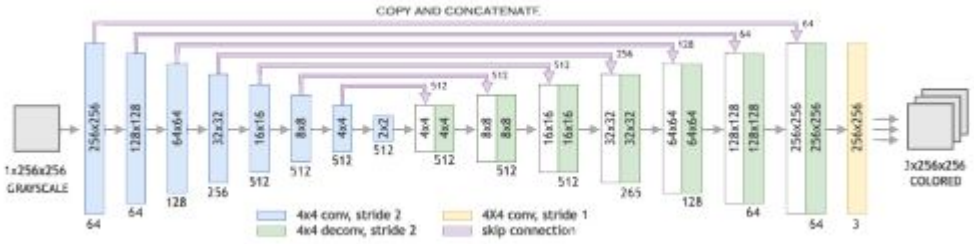
Image Colorization using Generative Adversarial Network:

- “CIFAR-10” dataset
- we use only 5000 training images and 1000 for testing.
- Number of Epochs = 100
- Batch size = 50



Improvement:

- We can add ResNet block in the generator which helps us to identify the high-level features of the image. This will help in better isolation of objects which finally leads to more accurate colorization.

Image Colorization using CNNs and Inception-Resnet-v2:

- Inception-ResNet Model

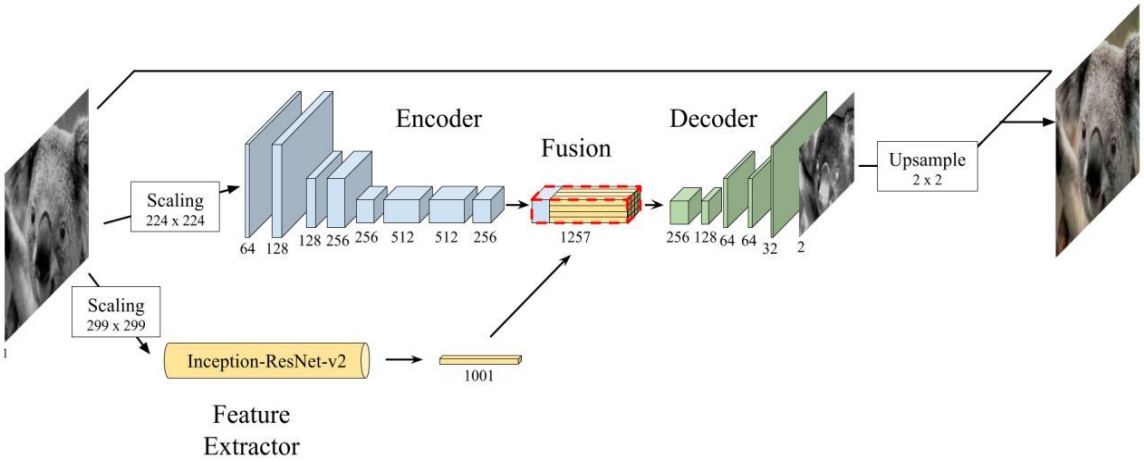
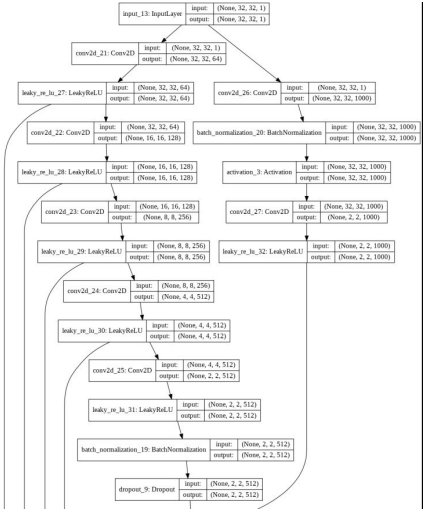
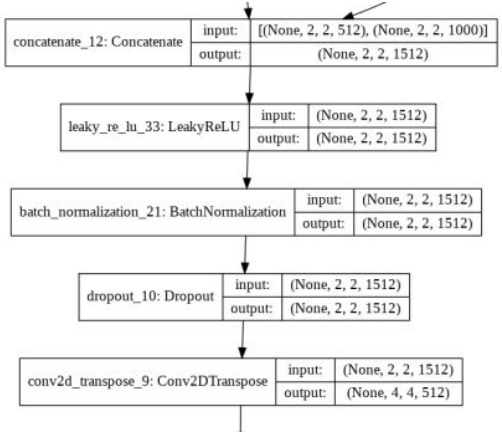


Image Colorization using Generative Adversarial Network:

New Model Architecture





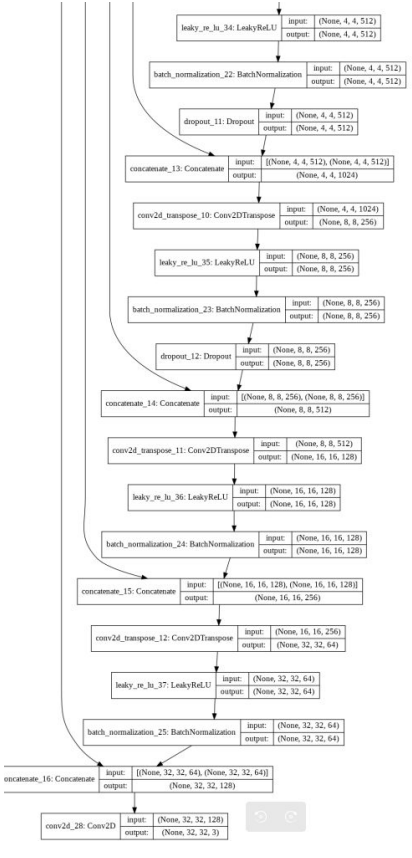


Image Colorization using Generative Adversarial Network:

Architecture before improvement

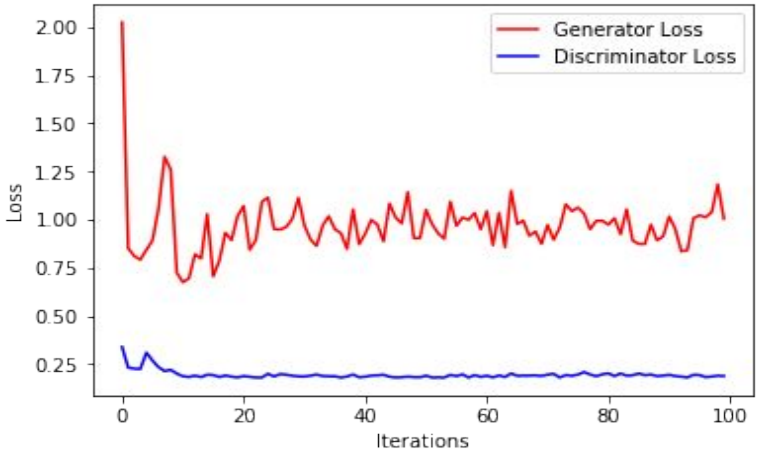
```
layer :  (?, 32, 32, 64)
layer :  (?, 16, 16, 128)
layer :  (?, 8, 8, 256)
layer :  (?, 4, 4, 512)
layer :  (?, 2, 2, 512)
layer :  (?, 4, 4, 1024)
layer :  (?, 8, 8, 512)
layer :  (?, 16, 16, 256)
layer :  (?, 32, 32, 128)
layer :  (?, 32, 32, 3)
```

Architecture after improvement

```
layer :  (?, 32, 32, 64)
layer :  (?, 16, 16, 128)
layer :  (?, 8, 8, 256)
layer :  (?, 4, 4, 512)
layer :  (?, 2, 2, 512)
Resnet layer :  (?, 2, 2, 1000)
layer :  (?, 2, 2, 1512)
layer :  (?, 4, 4, 1024)
layer :  (?, 8, 8, 512)
layer :  (?, 16, 16, 256)
layer :  (?, 32, 32, 128)
layer :  (?, 32, 32, 3)
```

Image Colorization using Generative Adversarial Network:

Result before improvement:



Results after improvement:

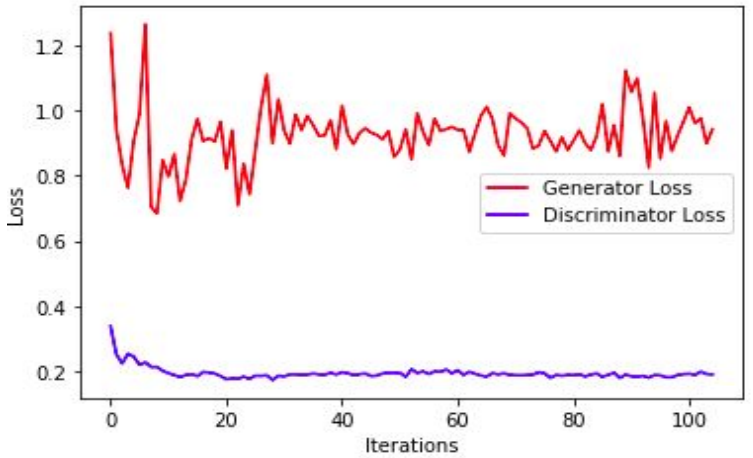


Image Colorization using Generative Adversarial Network:

Result before improvement:

Gray Scales

Ours

Ground Truth

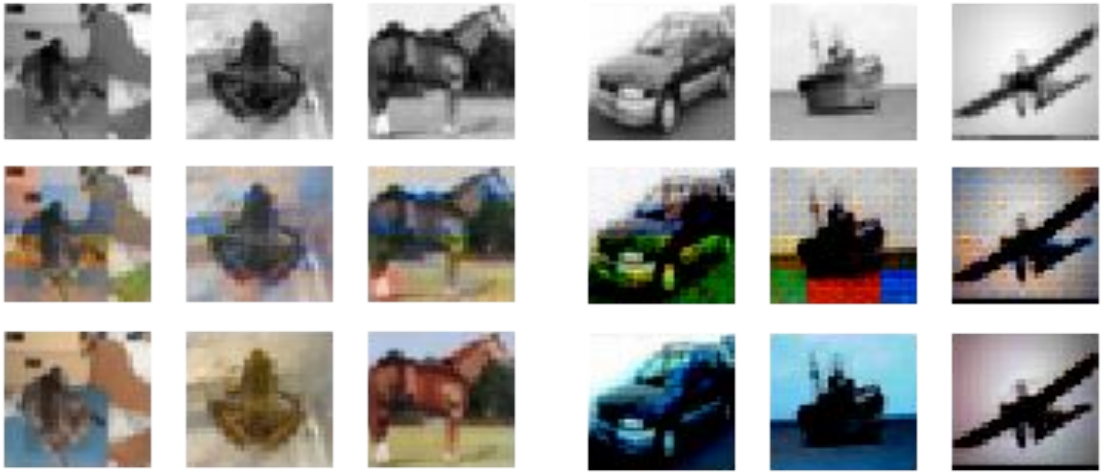


Image Colorization using Generative Adversarial Network:

Results after improvement:

Gray Scales

Ours

Ground Truth

Thank You !!