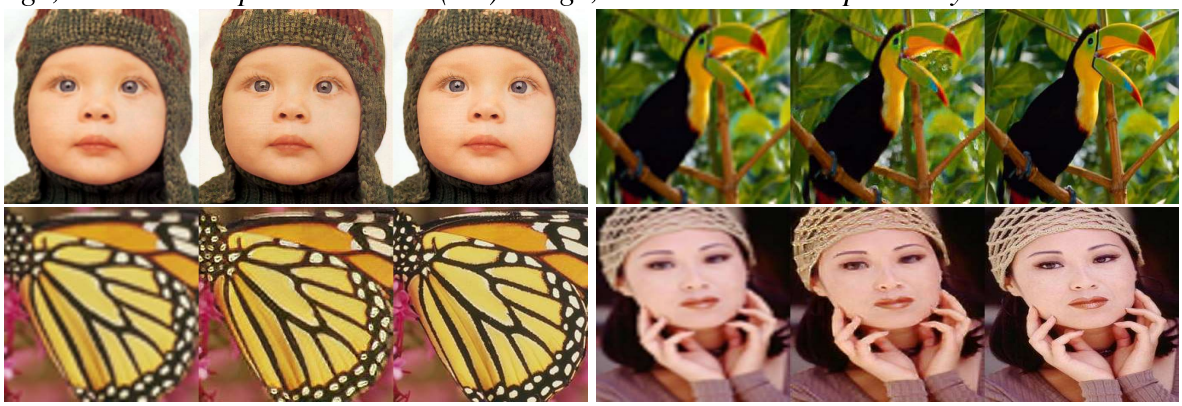
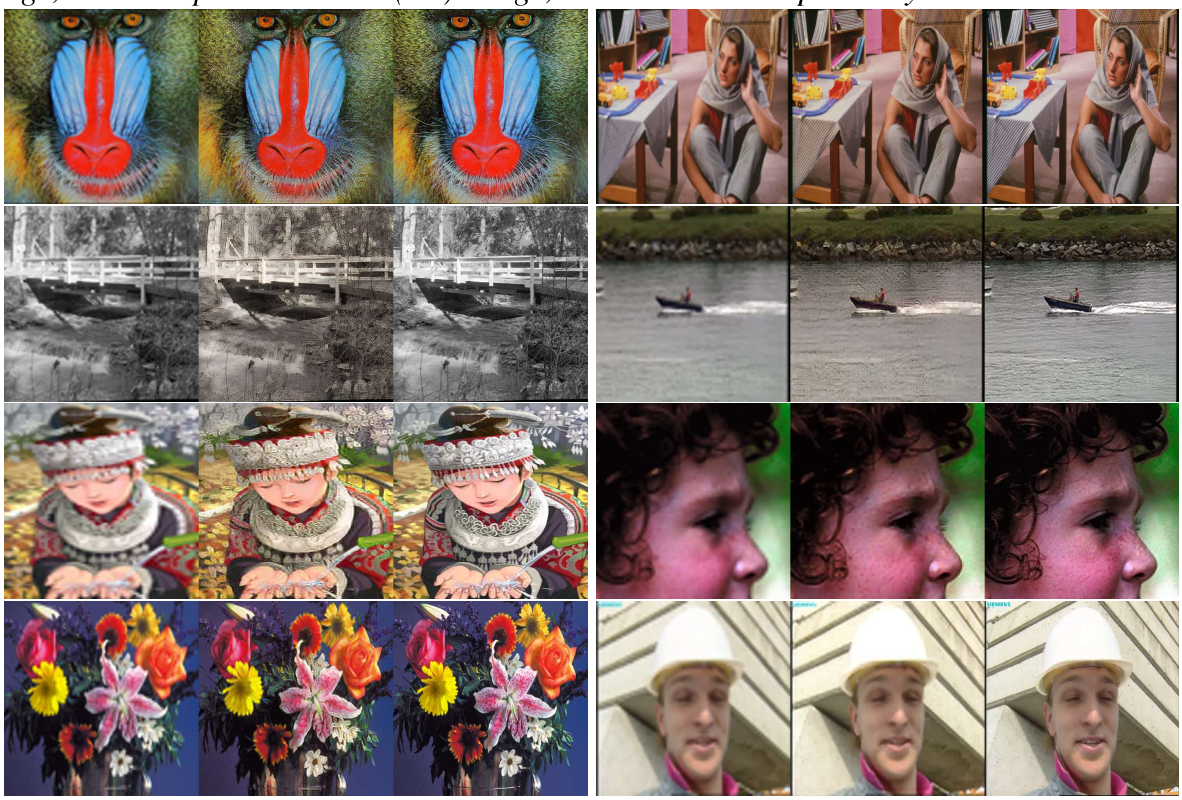
2.6 Test and Result of ESRGAN model on Set5 and Set14

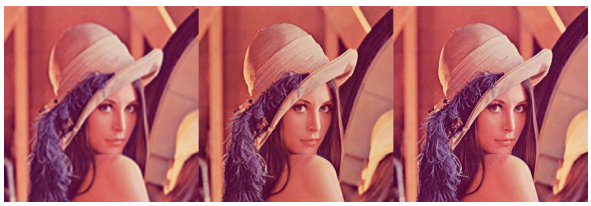
```
(esrgan-tf2) verma14@CSEDL01:~/neelu/esrgan-tf2$ python3 test.py --cfg_path="./configs/esrgan.yaml" --gpu=4
2020-06-25 17:34:16.943947: W tensorflow/stream_executor/platform/default/dso_loader.cc:55] Could not load dynamic library 'libnvinfer.
so.6'; dlerror: libnvinfer.so.6: cannot open shared object file: No such file or directory; LD_LIBRARY_PATH: /usr/local/cuda/lib64:
2020-06-25 17:34:16.944136: W tensorflow/stream_executor/platform/default/dso_loader.cc:55] Could not load dynamic library 'libnvinfer_
plugin.so.6'; dlerror: libnvinfer_plugin.so.6: cannot open shared object file: No such file or directory; LD_LIBRARY_PATH: /usr/local/c
uda/lib64:
2020-06-25 17:34:16.944167: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:30] Cannot dlopen some TensorRT libraries. If you would
 like to use Nvidia GPU with TensorRT, please make sure the missing libraries mentioned above are installed properly.
[*] load ckpt from ./checkpoints/esrgan/ckpt-3.
[*] Processing on Set5 and Set14, and write results
'set5_path' form ./data/Set5
  PSNR/SSIM
  [head.png            ] Bic=32.01db/0.76, SR=30.76db/0.76
  [bird.png            ] Bic=30.27db/0.87, SR=30.27db/0.86
  [butterfly.png       ] Bic=22.25db/0.72, SR=22.90db/0.77
  [woman.png           ] Bic=26.44db/0.83, SR=25.80db/0.84
  [baby.png            ] Bic=31.96db/0.85, SR=27.89db/0.79
'set14_path' form ./data/Set14
  PSNR/SSIM
  [flowers.png         ] Bic=25.85db/0.72, SR=25.03db/0.71
  [coastguard.png      ] Bic=25.33db/0.52, SR=23.80db/0.47
  [man.png             ] Bic=25.74db/0.68, SR=24.23db/0.62
  [face.png            ] Bic=31.98db/0.76, SR=30.71db/0.76
  [comic.png           ] Bic=21.69db/0.59, SR=20.14db/0.52
  [foreman.png         ] Bic=27.65db/0.86, SR=27.12db/0.86
  [barbara.png         ] Bic=25.19db/0.69, SR=24.31db/0.68
  [monarch.png         ] Bic=27.60db/0.88, SR=27.59db/0.88
  [lenna.png           ] Bic=29.67db/0.80, SR=28.81db/0.80
  [zebra.png           ] Bic=24.15db/0.68, SR=22.86db/0.57
  [pepper.png          ] Bic=29.38db/0.84, SR=29.67db/0.83
  [bridge.png          ] Bic=24.38db/0.56, SR=21.08db/0.40
  [ppt3.png            ] Bic=21.76db/0.82, SR=21.98db/0.83
  [baboon.png          ] Bic=22.06db/0.45, SR=20.10db/0.39
[*] write the visual results in ./results/esrgan/
```


Result of Set5 using PSNR model, Three images showing Low Resolution Bicubic(Bic) image, ESRGAN Super Resolution(SR) image, Ground Truth respectively



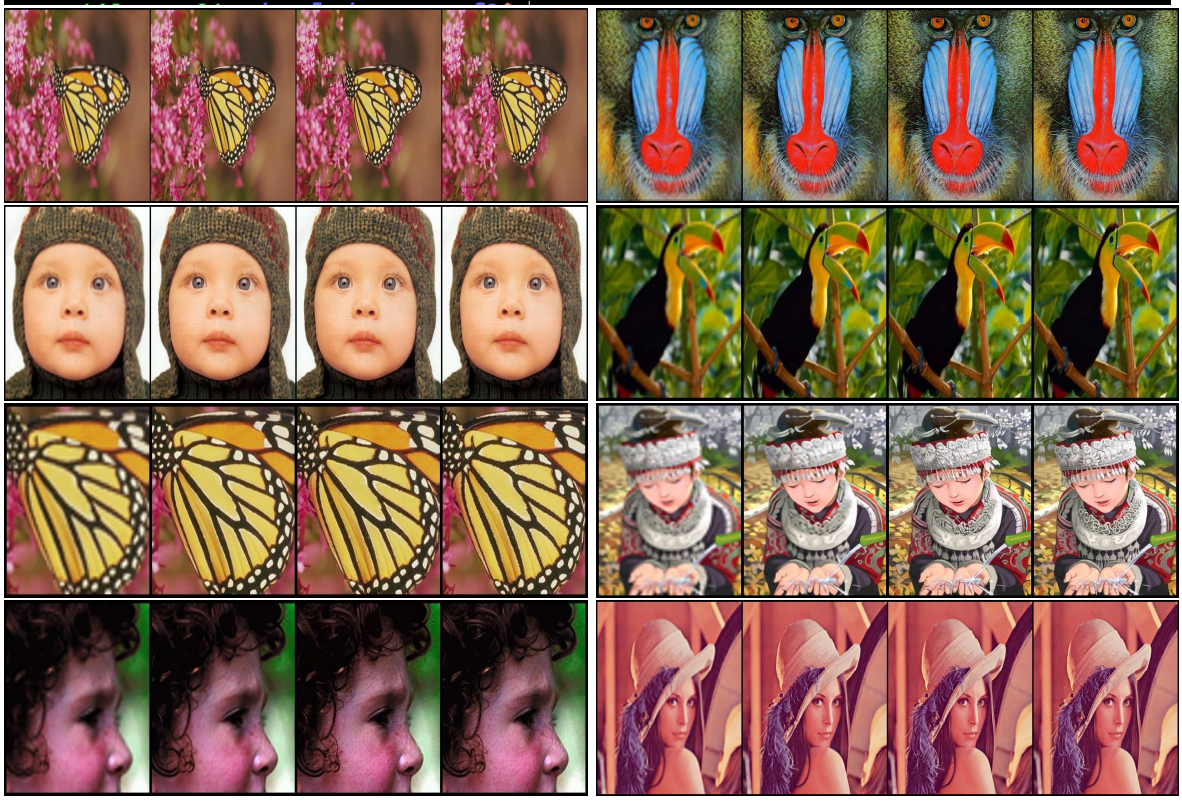
Result of Set14 using PSNR model, Three images showing Low Resolution Bicubic(Bic) image, PSNR Super Resolution(SR) image, Ground Truth respectively





2.7 Combined result of Bic, PSNR, ESRGAN, GT: From subsection 2.5(PSNR) and 2.6(ESRGAN) the selected area shows that Super Resolution(SR) Results of ESRGAN is much better than PSNR. Some images below also shows the comparision.

```
verma14@CSEDL01:~/neelu/esrgan-tf2$ python3 merge_table_img.py
Comparative table of Bic, PSNR, ESRGAN, GT is stored in photo folder
Merging done,check your Photo folder
```



3 Network Interpolation on DIV2K800_sub_bicLRx4 for ESRGAN, PSNR on alpha= $[1.0, 0.8, 0.6, 0.4, 0.2, 0.0]$

```
(esrgan-tf2) verma14@CSEDL01:~/neelu/esrgan-tf2$ python3 net_interp.py --cfg_path1="./configs/psnr.yaml" --cfg_path2="./configs/esrgan.
yaml" --img_path="./data/PIPRM_3_crop.png" --save_image=True --save_ckpt=True
2020-06-25 17:40:20.183705: W tensorflow/stream_executor/platform/default/dso_loader.cc:55] Could not load dynamic library 'libnvinfer.
so.6'; dlerror: libnvinfer.so.6: cannot open shared object file: No such file or directory; LD_LIBRARY_PATH: /usr/local/cuda/lib64:
2020-06-25 17:40:20.183929: W tensorflow/stream_executor/platform/default/dso_loader.cc:55] Could not load dynamic library 'libnvinfer_
plugin.so.6'; dlerror: libnvinfer_plugin.so.6: cannot open shared object file: No such file or directory; LD_LIBRARY_PATH: /usr/local/c
uda/lib64:
2020-06-25 17:40:20.183957: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:30] Cannot dlopen some TensorRT libraries. If you would
 like to use Nvidia GPU with TensorRT, please make sure the missing libraries mentioned above are installed properly.
[*] load ckpt 1 from ./checkpoints/psnr_pretrain/ckpt-1.
[*] load ckpt 2 from ./checkpoints/esrgan/ckpt-3.
[*] Processing on single image ./data/PIPRM_3_crop.png
[*] Process alpha = 1.0
[*] Process alpha = 0.8
[*] Process alpha = 0.6
[*] Process alpha = 0.4
[*] Process alpha = 0.2
[*] Process alpha = 0.0
[*] write the weight interp ./results_interp/psnr_pretrain_esrgan/weight_interp_PIPRM_3_crop.png
[*] write the image interp ./results_interp/psnr_pretrain_esrgan/image_interp_PIPRM_3_crop.png
```

weight interpolation on PIMRM_3.png

image interpolation

weight interpolation and image interpolation

weight interpolation and image interpolation

weight interpolation and image interpolation

weight interpolation and image interpolation