

风格迁移

```
root@autodl-container-5ab7449f7c-2afb70a3:~/autodl-tmp# python neural_style.py
/root/miniconda3/lib/python3.12/site-packages/torchvision/models/_utils.py:208:
UserWarning: The parameter 'pretrained' is deprecated since 0.13 and may be
removed in the future, please use 'weights' instead.
```

```
warnings.warn(
/root/miniconda3/lib/python3.12/site-packages/torchvision/models/_utils.py:223:
UserWarning: Arguments other than a weight enum or `None` for 'weights' are
deprecated since 0.13 and may be removed in the future. The current behavior is
equivalent to passing `weights=VGG19_weights.IMAGENET1K_V1`. You can also use
`weights=VGG19_weights.DEFAULT` to get the most up-to-date weights.
```

```
warnings.warn(msg)
Downloading: "https://download.pytorch.org/models/vgg19-dcbb9e9d.pth" to
/root/.cache/torch/hub/checkpoints/vgg19-dcbb9e9d.pth
100%
```

██████████ | 548M/548M [00:35<00:00, 16.1MB/s]

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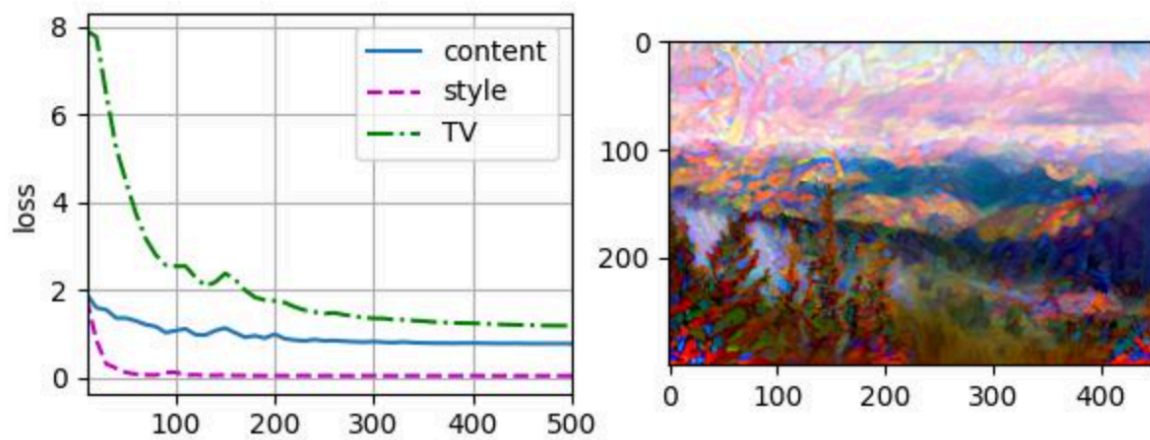
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root@autodl-container-5ab7449f7c-2afb70a3:~/autodl-tmp#
```

第一种内容层和样式层参数:

style_layers, content_layers = [0, 5, 10, 19, 28], [25]

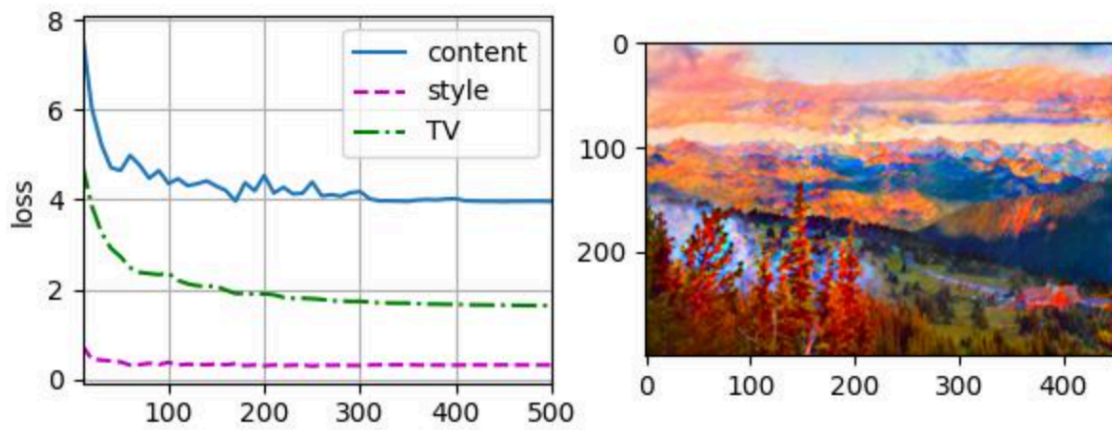
得到的输出:



第二种内容层和样式层参数:

style_layers, content_layers = [3, 8, 15, 22], [15]

得到的输出:



原程序中得到图片噪声比较多，发现如果将风格特征层向后推一层，从cov2d推到其后的relu会大幅降低噪声出现，（即改为【3, 8, 15, 22】，内容层【15】）。

思考了一下原因：原程序中特征是提取的数个cov2d出来的特征，而更改后提取的是cov2d后面紧接着的relu的特征，而在训练时cov2d中小于0的特征会被relu将梯度置为0，也就是没有被训练，所以如果用cov2d特征去对照，自然就会出现一些噪点，也就是那些被relu置为0而没有被训练的地方。**即滤除掉了一些噪声**