Perceptual Losses for Real-Time Style Transfer and SR

方法:feed-forward transform+perceptual lf

depend on high-level features from a pretrained loss network(代替：per-pixel lf)

应用：style transfer (fast x3) / single-image super-resolution(好于 SRCNN)

都是ill-posed，前者没有固定结果，后者结果太多

因此需要semantic reasoning about the input image

不用从头做：the use of perceptual loss functions allows the transfer of semantic knowledge from the loss network to the transformation network.

结论：提出perceprual loss，前向反馈传播：感知损失（高等级特征）确实好于MSE，可以代替基于像素点的LF用于SR，风格变换

SRGAN

EnhanceNet: Single Image Super-Resolution through Automated Texture Synthesis(自动纹理合成)

GAN之后发表

自动生成纹理(adversarial training)+视觉损失(希望生成真实类似图片)

对抗训练中的前向反馈全卷机神经网络

输出：高质高量

训练通过：Euclidean loss或者(新)adversarial training + perceptual loss + texture transfer loss

AffGAN - Amortised MAP Inference for Image Super-Resolution

参考：<http://www.leiphone.com/news/201704/UOlptCxSKNIAQ5EC.html>

MAP：最大后验概率

方法：approximate MAP inference

三个方法：分别基于GANs(AFFGAN最好), denoising or density models

对SRGAN的发展

新型神经网络

仿射子空间

结论：没看懂，据说很好

视频

Real-Time Video Super-Resolution with Spatio-Temporal Networks and Motion Compensation

spatio-temporal subpixel convolution networks

early fusion, slow fusion and 3D convolutions

joint motion compensation and video super-resolution algorithm

sub-pixel convolutions + temporal fusion strategies

models is to facilitate an improvement in reconstruction accuracy / temporal consistency / or reduce computational complexity relative to independent single frame processing

方法：sub-pixel convolution + spatio-temporal networks and motion compensation