VistGAN: Unsupervised VSR solution for Smart Carpark

Application

A novel Video Super-Resolution (VSR) approach to retrieve high-resolution details from low-resolution video. The AI enabled solution can achieve one-to-many car plate recognition simultaneously, which is a cost saving solution to smart parking management system.

Application area:

- Indoor Carpark – car plate recognition and way guiding
- Outdoor Carpark – smart cities for parking space enquiry

Technology

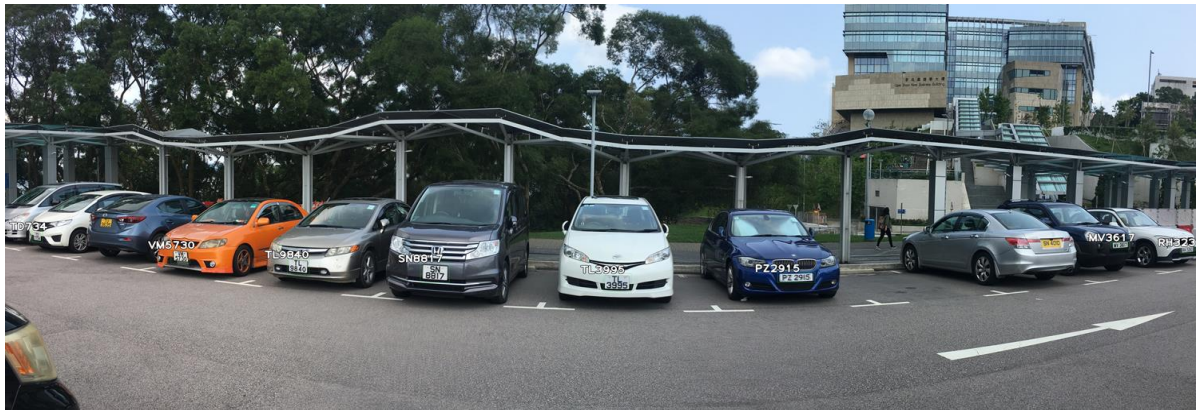
VistGAN – an unsupervised video super-resolution technique which reconstructions a high-resolution video sequence of grams from a low-resolution video sequence of frames. The reconstruction makes use of a video super-resolution approach with temporal consistency using Generative Adversarial Networks (GAN), an unsupervised learning mode, and a metric learning model in its discriminator which maps degradation operations of the low-resolution frames.

Advantages

- Higher video quality up to 26.78 Peak SNR
- Reduce CAPEX on hardware installation (10 camera into 1)
- Flexible installation for public parking area
- AI model and OCR running on the IoT edge (Future)

Method	Bicubic	VSRnet	VESCPN	DRVSR	TDVSR	FRVSR	HFENet(ours)
PSNR	23.53	24.84	25.35	25.87	25.49	26.17	26.78
SSIM	0.628	0.702	0.756	0.772	0.746	0.798	0.821
FWE(10^{-4})	3.72	6.94	5.42	5.24	5.03	4.53	3.92

Achieve high PSNR compare to other algorithm for high definition video with temporal consistency.



Talk to Us

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Intellectual Properties

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