

Lesson 1: GAN 的诞生

[GAN, NIPS] Goodfellow, I., Pouget-Abadie, J., Mirza, M., Xu, B., Warde-Farley, D., Ozair, S., ... & Bengio, Y.. Generative adversarial nets. In *Advances in neural information processing systems* (NIPS 2014).

Lesson 2: 从无到有-条件式

- (1) [InfoGAN, NIPS] Chen, X., Duan, Y., Houthoofd, R., Schulman, J., Sutskever, I., & Abbeel, P.. Infogan: Interpretable representation learning by information maximizing generative adversarial nets. In *Advances in Neural Information Processing Systems* (NIPS 2016).
- (2) [cGAN, ARXIV] Mirza, M., & Osindero, S.. Conditional generative adversarial nets. *arXiv*, 2014.
- (3) [DCGAN, ICLR] Radford, A., Metz, L., & Chintala, S.. Unsupervised Representation Learning with Deep Convolutional Generative Adversarial Networks. *International Conference on Learning Representations* (ICLR 2016).

Lesson 3: 从无到有-渐进式

● Lesson-3.1:

- (1) [LAPGAN, NIPS] Denton, E. L., Chintala, S., & Fergus, R.. Deep generative image models using a laplacian pyramid of adversarial networks. In *Advances in neural information processing systems* (NIPS 2015).
- (2) [StackGAN, ICCV] Zhang, H., Xu, T., Li, H., Zhang, S., Huang, X., Wang, X., & Metaxas, D.. Stackgan: Text to photo-realistic image synthesis with stacked generative adversarial networks. In *IEEE Int. Conf. Comput. Vision* (ICCV 2017).

● Lesson-3.2:

- (3) [pix2pix, CVPR] P. Isola, J.-Y. Zhu, T. Zhou, and A. A. Efros. Image-to-Image Translation with Conditional Adversarial Networks. In *IEEE Conference on Computer Vision and Pattern Recognition* (CVPR 2017).
- (4) [pix2pixHD, CVPR] Wang T C, Liu M Y, Zhu J Y, et al. High-Resolution Image Synthesis and Semantic Manipulation with Conditional GANs. *Conference on Computer Vision and Pattern Recognition* (CVPR 2017).

Lesson 4: 从 A 到 B 的迁移学习

- (1) [cycle GAN, ICCV] Zhu J Y, Park T, Isola P, et al. Unpaired image-to-image translation using cycle-consistent adversarial networks. *IEEE International Conference on Computer Vision* (ICCV 2017).

- (2) **[Dual GAN, ICCV]** Yi Z, Zhang H, Tan P, et al. DualGAN: Unsupervised dual learning for image-to-image translation. *IEEE International Conference on Computer Vision (ICCV 2017)*.
- (3) **[Disco GAN, ICML]** Kim T, Cha M, Kim H, et al. Learning to discover cross-domain relations with generative adversarial networks. *International Conference on Machine Learning (ICML 2017)*.
- (4) **[StarGAN, CVPR]** Choi Y, Choi M, Kim M, et al. StarGAN: Unified Generative Adversarial Networks for Multi-Domain Image-to-Image Translation. *Conference on Computer Vision and Pattern Recognition (CVPR 2017)*.

Lesson 5: GAN 的训练-理论篇

- (1) **[WGAN, ICML]** Arjovsky M, Chintala S, Bottou L. Wasserstein GAN. *International Conference on Machine Learning (ICML 2017)*.
- (2) **[f-GAN, NIPS]** Nowozin, S., Cseke, B., & Tomioka, R. f-gan: Training generative neural samplers using variational divergence minimization. *In Advances in Neural Information Processing Systems (NIPS 2016)*.
- (3) **[EBGAN, ICLR]** Zhao J, Mathieu M, LeCun Y. Energy-based generative adversarial network. *International Conference on Learning Representations (ICLR 2016)*.
- (4) **[BEGAN, ARXIV]** Berthelot D, Schumm T, Metz L. BeGAN: Boundary equilibrium generative adversarial networks. *arXiv, 2017*.

Lesson 6: GAN 的训练-技巧篇

- (1) **[DCGAN, ICLR]** Radford A, Metz L, Chintala S. Unsupervised representation learning with deep convolutional generative adversarial networks. *International Conference on Learning Representations (ICLR 2015)*.
- (2) **[GAN, NIPS]** Salimans, T., Goodfellow, I., Zaremba, W., Cheung, V., Radford, A., & Chen, X.. Improved techniques for training gans. *In Advances in Neural Information Processing Systems (NIPS), 2016*.
- (3) **[SN-GANs, ICLR]** Miyato T, Kataoka T, Koyama M, et al. Spectral normalization for generative adversarial networks. *International Conference on Learning Representations (ICLR 2018)*.

Lesson 7: GAN 的训练-结构篇

- (1) **[D2GAN, NIPS]** Nguyen, T., Le, T., Vu, H., & Phung, D.. Dual discriminator generative adversarial nets. *In Advances in Neural Information Processing Systems (NIPS 2017)*.
- (2) **[MGAN, ARXIV]** Hoang Q, Nguyen T D, Le T, et al. Multi-Generator Generative Adversarial Nets. *arXiv, 2017*.
- (3) **[CoGAN, NIPS]** Liu, M. Y., & Tuzel, O.. Coupled generative adversarial networks. *In Advances in neural information processing systems (NIPS 2016)*.

Lesson 8: GAN 的训练-图像篇

[GAN, ECCV] Johnson, J., Alahi, A., & Fei-Fei, L.. Perceptual losses for real-time style transfer and super-resolution. *In European Conference on Computer Vision (ECCV 2016)*.

Lesson 9: GAN 的应用-视频篇

[GAN, ICCV] Liang, X., Lee, L., Dai, W., & Xing, E. P.. Dual motion GAN for future-flow embedded video prediction. *IEEE International Conference on Computer Vision (ICCV 2017)*.

Lesson 10: GAN 的应用-文本篇

- (1) [GAN, CVPR] Photographic Text-to-Image Synthesis With a Hierarchically-Nested Adversarial Network (CVPR 2018) .
- (2) [GAN, ICCV] Show, Adapt and Tell: Adversarial Training of Cross-Domain Image Captioner (ICCV 2017).

Lesson 11: 特征学习-半监督学习篇

[GAN, ICML] A Tensorflow implementation of Semi-supervised Learning Generative Adversarial Networks (ICML 2016).

Lesson 12: VIPL 实验室-姿态迁移

[GAN, CVPR] Hu L, Kan M, Shan S, et al. Duplex Generative Adversarial Network for Unsupervised Domain Adaptation. *Computer Vision and Pattern Recognition (CVPR 2018)*.

Lesson 13: 最新时令论文

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