

Supplementary Materials : Generator Knows What Discriminator Should Learn in Unconditional GANs

1 Additional results and visualization

We additionally provide results and their corresponding feature visualization for the datasets used in the main paper including CIFAR-10 [4], FFHQ [3], LSUN cat, horse, church [5], AFHQ [2] and Landscapes [1]. From **Fig. 1** to **Fig. 5**, we show uncurated random samples generated by our method. For FFHQ and LSUN dataset, we sample from StyleGAN2 trained with GGDR, and we sample from ADA trained with GGDR for the others. From Figure 6 to Figure 8, we visualize the guidance feature maps from the generator and their corresponding fake images. For feature map visualization, we run k -means($k = 6$) clustering on 64 samples. All visualized feature map size is 64×64 except CIFAR-10(8×8).

References

1. Kaggle landscapes dataset. <https://www.kaggle.com/arnaud58/landscape-pictures> (2019) 1
2. Choi, Y., Uh, Y., Yoo, J., Ha, J.W.: Stargan v2: Diverse image synthesis for multiple domains. In: CVPR (2020) 1
3. Karras, T., Laine, S., Aila, T.: A style-based generator architecture for generative adversarial networks. In: CVPR (2019) 1
4. Krizhevsky, A., Hinton, G., et al.: Learning multiple layers of features from tiny images. Tech. rep., Department of Computer Science, University of Toronto (2009) 1
5. Yu, F., Seff, A., Zhang, Y., Song, S., Funkhouser, T., Xiao, J.: Lsun: Construction of a large-scale image dataset using deep learning with humans in the loop. arXiv preprint arXiv:1506.03365 (2015) 1

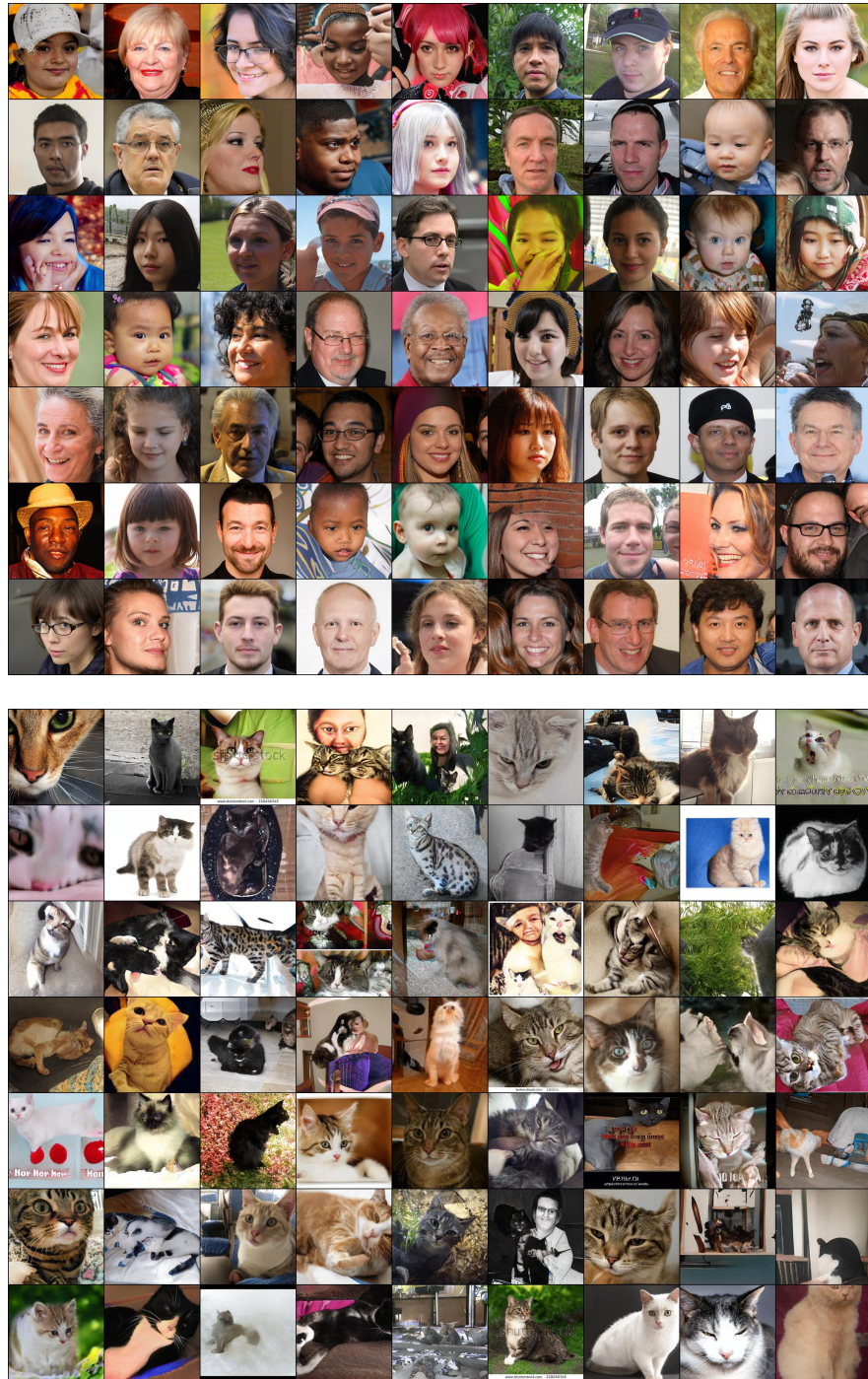


Fig. 1. Uncurated results on (top) FFHQ and (bottom) LSUN Cat.

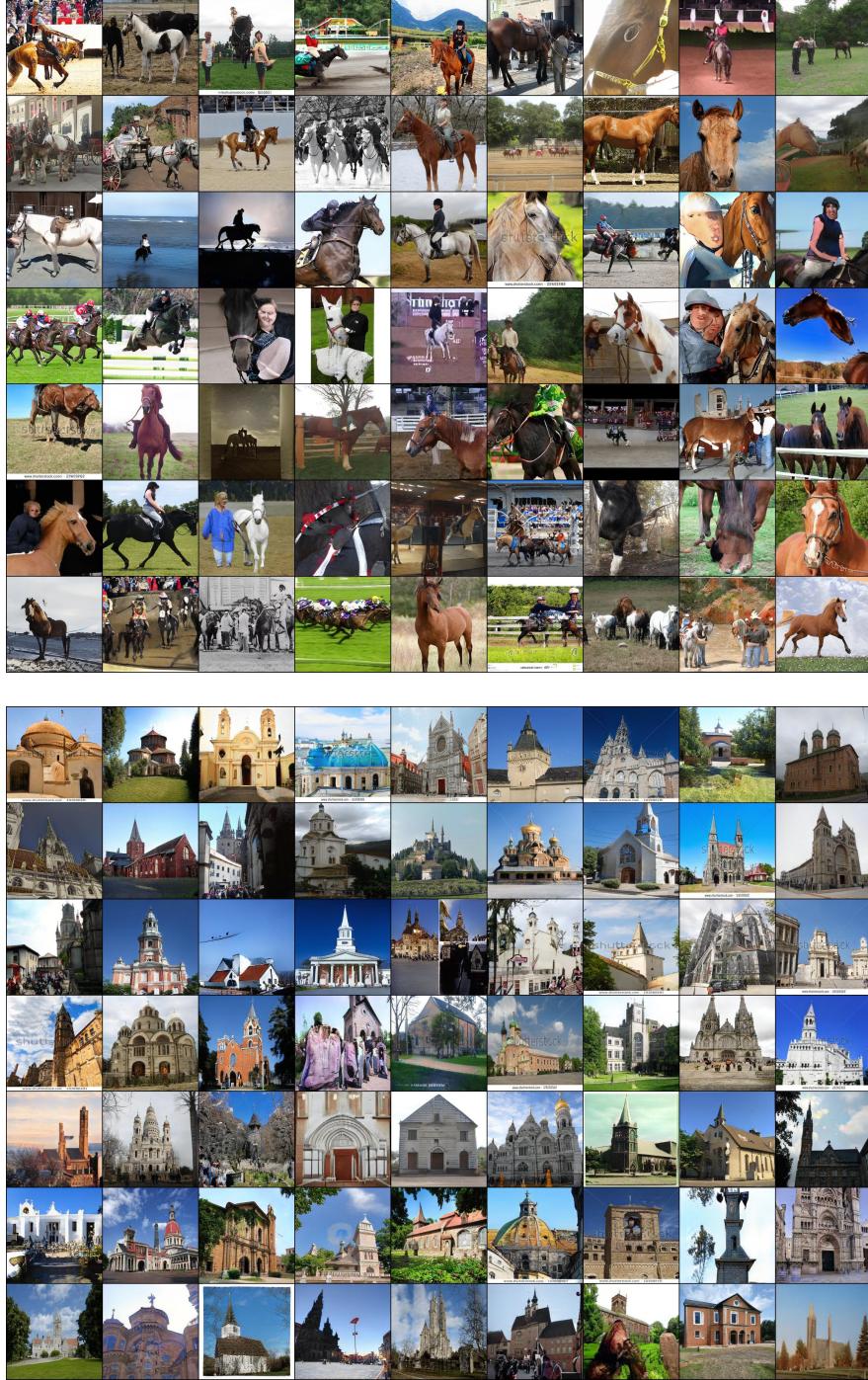


Fig. 2. Uncurated results on (top) LSUN Horse and (bottom) LSUN Church.



Fig. 3. Uncurated results on (top) AFHQ Cat and (bottom) AFHQ Dog

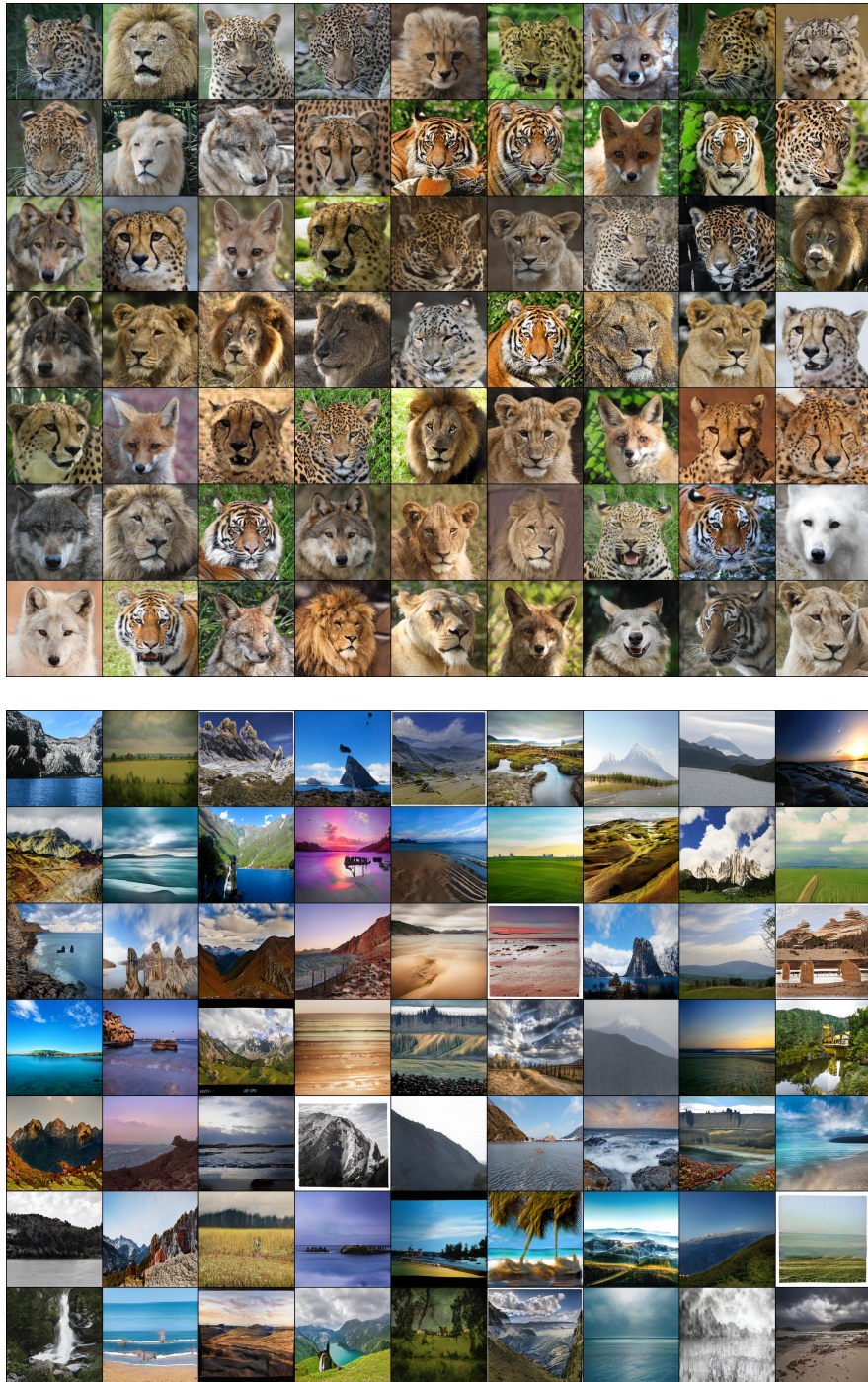


Fig. 4. Uncurated results on (top) AFHQ Wild and (bottom) Landscape.

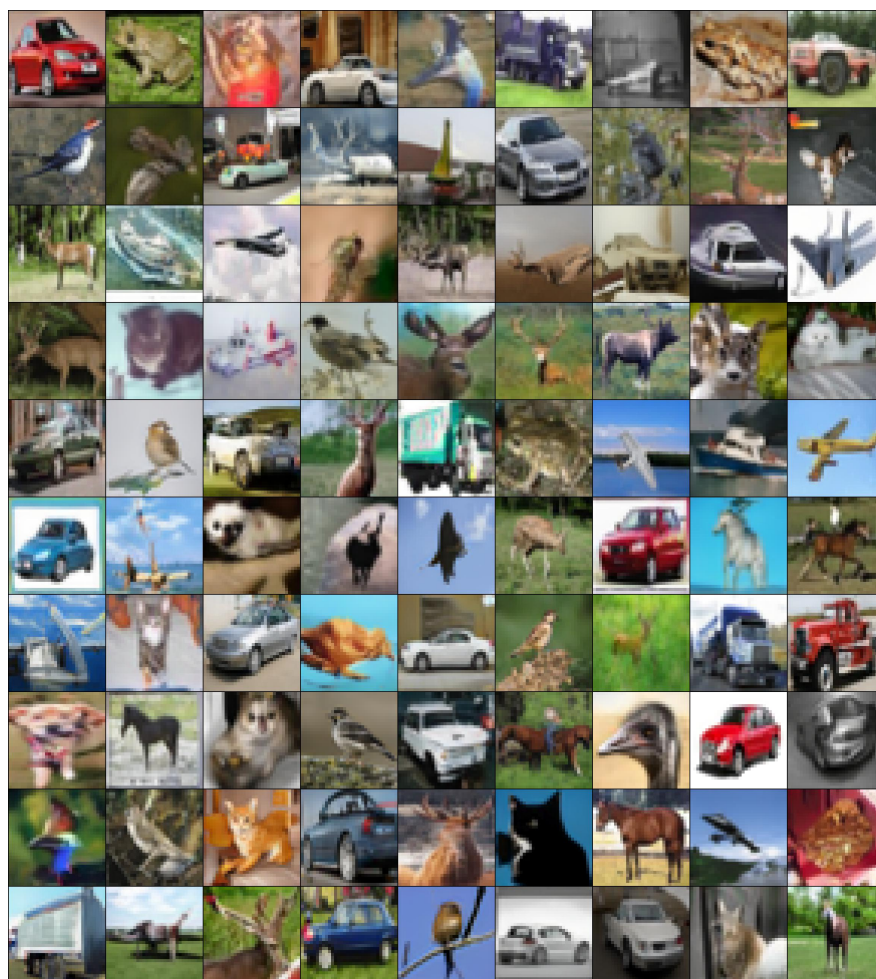


Fig. 5. Uncurated results on CIFAR-10.



(a) Visualization on FFHQ.



(b) Visualization on LSUN Cat.



(c) Visualization on LSUN Horse.

Fig. 6. Visualization of fake images and their corresponding generator feature maps on FFHQ, LSUN Cat and LSUN Horse.



(a) Visualization on LSUN Church.

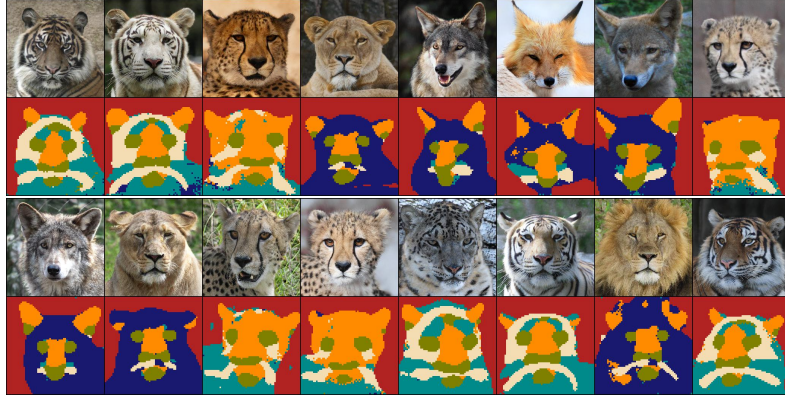


(b) Visualization on AFHQ Cat.

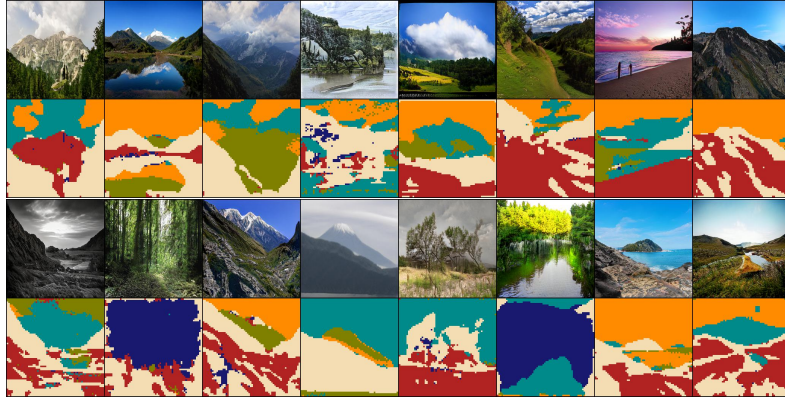


(c) Visualization on AFHQ Dog.

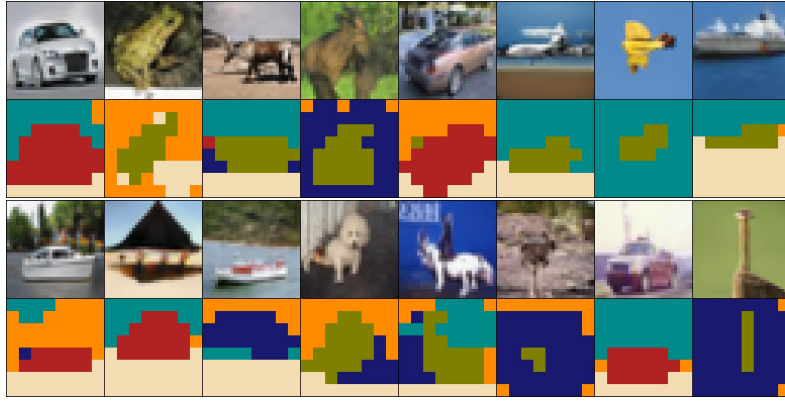
Fig. 7. Visualization of fake images and their corresponding generator feature maps on LSUN Church, AFHQ Cat and AFHQ Dog.



(a) Visualization on AFHQ Wild.



(b) Visualization on Landscapes.



(c) Visualization on CIFAR-10.

Fig. 8. Visualization of fake images and their corresponding generator feature maps on AFHQ Wild, Landscapes and CIFAR-10.