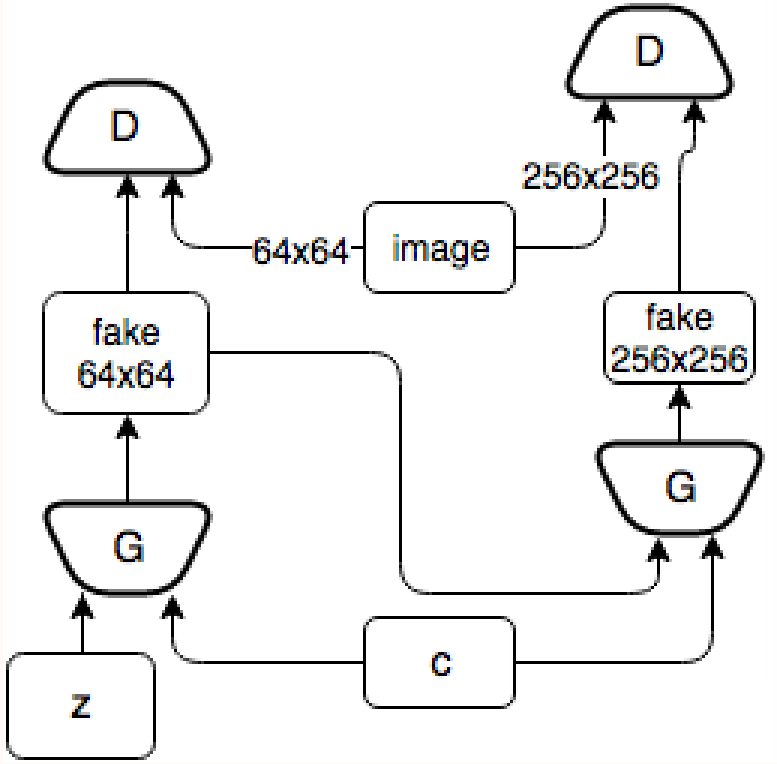
GAS - Generative Auxiliary Strategy to Accelerate Unconditional GAN training

Presentation: SunnerLi

Outline

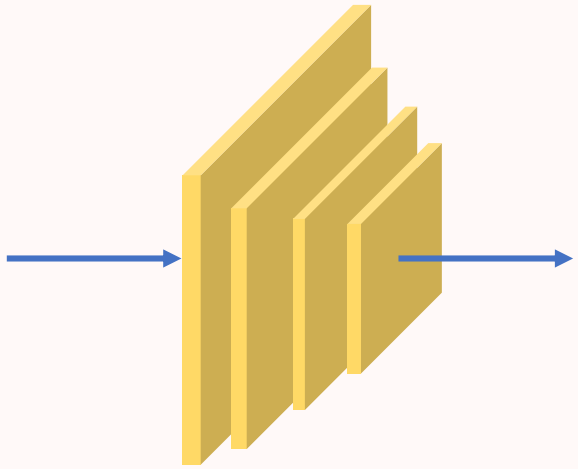
- Motivation
- Purposed structure
- Experiments
- Reference

Motivation

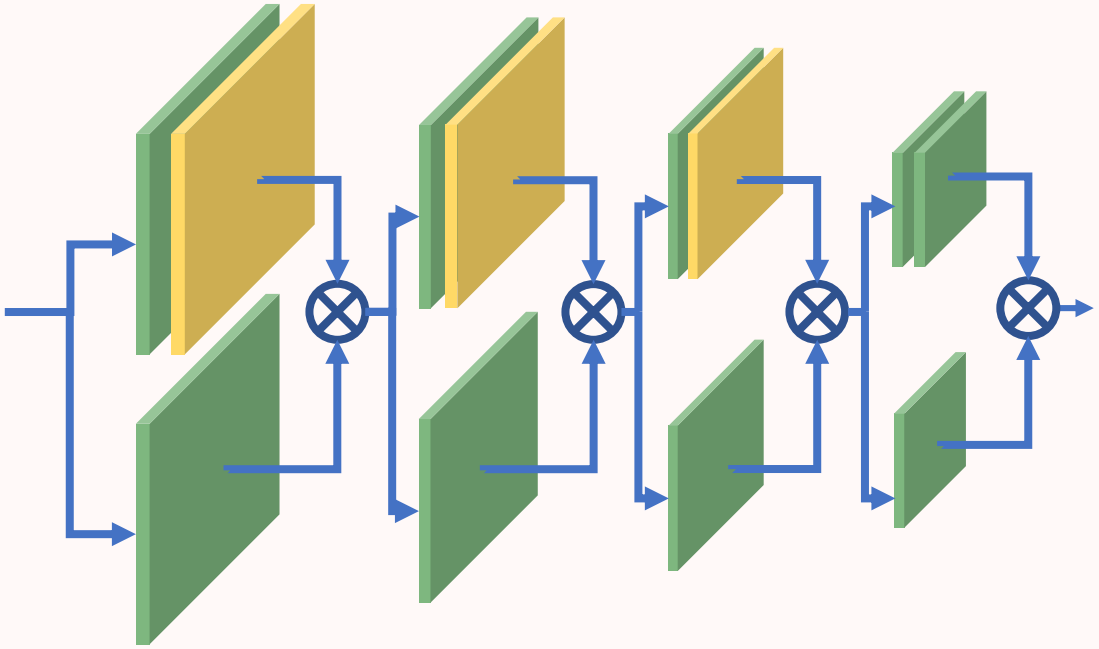


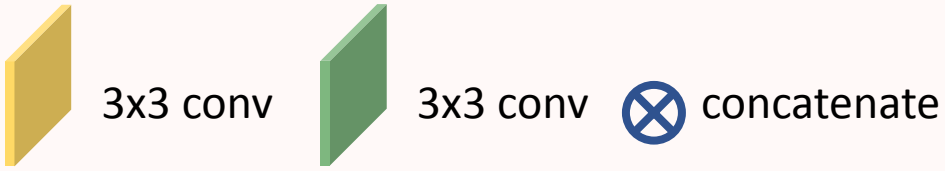
Purposed structure

Original structure



Inception idea revision

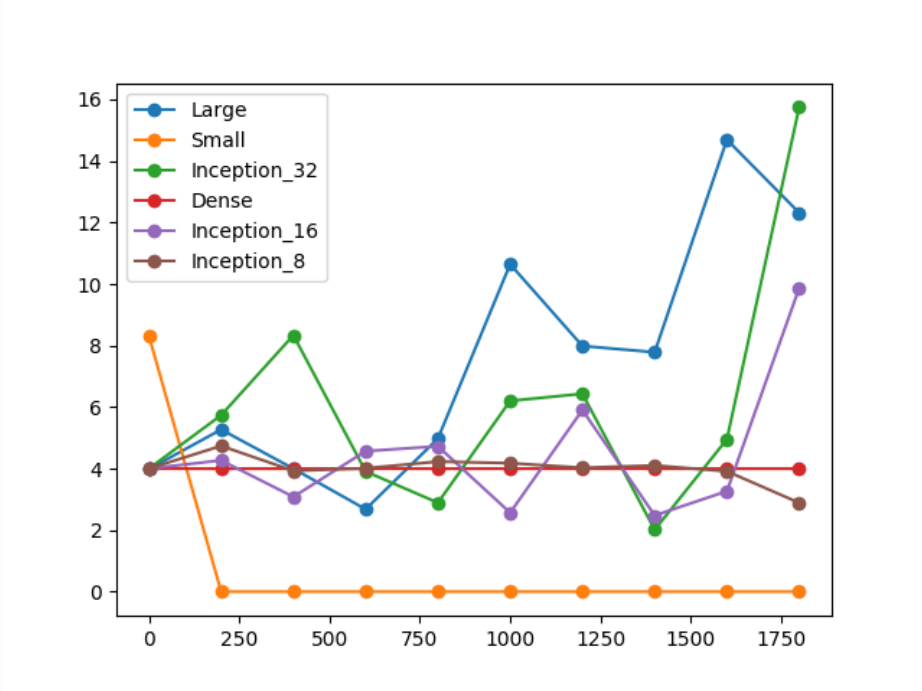




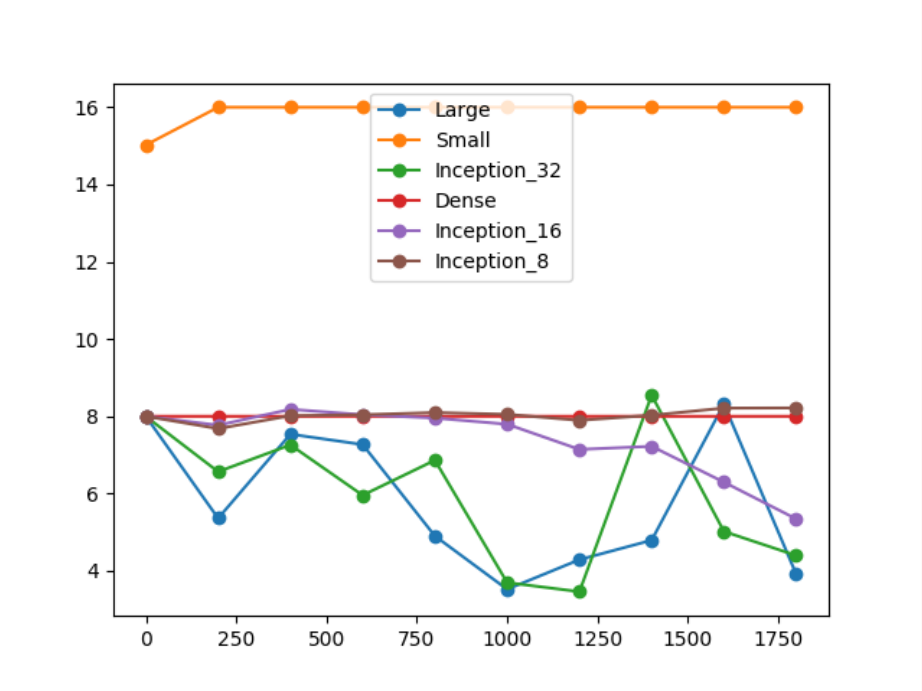
Experiments

index	model description	size (MB)
1	Original LSGAN discriminator	777
2	fuse the idea of depthwise separable convolutions and inception	199
3	Only adopt inception idea with the number of base filter is 32	**489**
4	fuse the idea of depthwise separable convolutions, inception and 4 dense block	393
4	depthwise conv + inception + dense	393
5	Only adopt inception idea with the number of base filter is 16	361
6	Only adopt inception idea with the number of base filter is 8	297

Experiments



Generator loss



Discriminator loss

Reference

[1] Xudong Mao, Qing Li, Haoran Xie, Raymond Y.K. Lau, Zhen Wang, and Stephen Paul Smolley, “Least Squares Generative Adversarial Networks,” arXiv: 1611.04076 [cs.CV], November 2016.

[2] François Chollet, “Xception: Deep Learning with Depthwise Separable Convolutions,” arXiv: 1610.02357 [cs.CV], October 2016.

[3] Christian Szegedy, Wei Liu, Yangqing Jia, Pierre Sermanet, Scott Reed, Dragomir Anguelov, Dumitru Erhan, Vincent Vanhoucke, and Andrew Rabinovich, “Going Deeper with Convolutions,” In IEEE Conference on Computer Vision and Pattern Recognition (CVPR), Boston, USA, 8-10, June, 2015, pp. 1-9.

[4] Gao Huang, Zhuang Liu, Kilian Q. Weinberger, and Laurens van der Maaten, “Densely Connected Convolutional Networks,” arXiv: 1608.06993 [cs.CV], Augest 2016.