Supplementary Material: DigGAN: Discriminator gradIent Gap Regularization for GAN Training with Limited Data

In this supplementary material we provide additional qualitative results (see Sec. A) and details regarding the datasets (see Sec. B).

A   Additional Qualitative Results

We provide more qualitative results of BigGAN on Tiny-ImageNet and CUB-200 to demonstrate the effectiveness of the proposed DigGAN approach.

We show additional qualitative results to compare BigGAN [5], R_{LC} [51] and the proposed DigGAN. In Fig. 10 and Fig. 11 we provide results to compare 100% and 50% CUB-200 data using an image size of 128×128. In Fig. 12 and Fig. 13 we present a comparison for 100% and 50% Tiny-ImageNet data using an image size of 64×64. When also considering the FID scores shown in Tab. 3 in the paper, we find the proposed DigGAN to improve results both qualitatively and quantitatively.

B   Datasets

We use four datasets in our paper. We provide details and license for each below.

CIFAR-10 and CIFAR-100: CIFAR-10 and CIFAR-100 both consists of 50,000 training images, grouped into 10 and 100 classes respectively. The image size is 32×32. Both datasets use the MIT license.

CUB-200: Caltech-UCSD Birds-200-2011 is a challenging dataset of 200 bird species. It contains 5,994 training images and 5,794 testing images. The image size is 128×128. We are not able to find the license information. The authors mention that the use of the dataset is restricted to non-commercial research and for educational purposes.

Tiny-ImageNet: Tiny-ImageNet is a subset of the ImageNet dataset. It contains 100,000 images grouped into 200 classes (500 for each class) downsized to 64×64 sized color images. Each class has 500 training images. The dataset uses the MIT license.

(a) BigGAN [5]

(b) +R_{LC} [51]

(c) +DigGAN (Ours)

Figure 10: Comparison of BigGAN, R_{LC} and DigGAN with 100% CUB-200 data (5,994 images). No truncation trick and data augmentation is used.

(a) BigGAN [5]

(b) +R_{LC} [51]

(c) +DigGAN (Ours)

Figure 11: Comparison of BigGAN, R_{LC} and DigGAN with 50% CUB-200 data (2,997 images). No truncation trick and data augmentation is used.

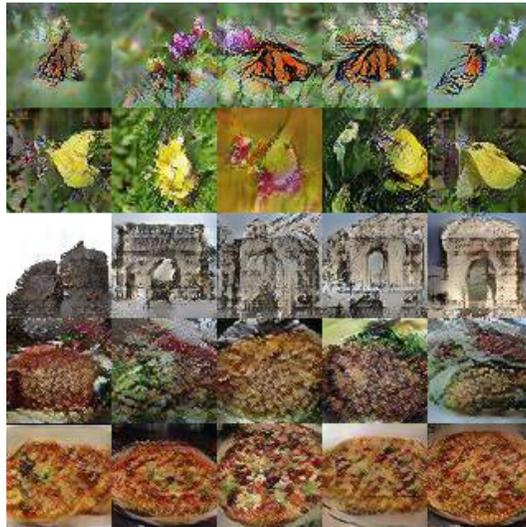(a) BigGAN [5]

(b) +R_{LC} [51]

(c) +DigGAN (Ours)

Figure 12: Comparison of BigGAN, R_{LC} and DigGAN with 100% Tiny-ImageNet data (100,000 images). No truncation trick and data augmentation is used.

(a) BigGAN [5]

(b) +R_{LC} [51]

(c) +DigGAN (Ours)

Figure 13: Comparison of BigGAN, R_{LC} and DigGAN with 50% Tiny-ImageNet data (50,000 images). No truncation trick and data augmentation is used.