



WGAN实战

主讲：龙良曲

Outline

- Anime Dataset
 - GAN
 - WGAN-GP
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Anime



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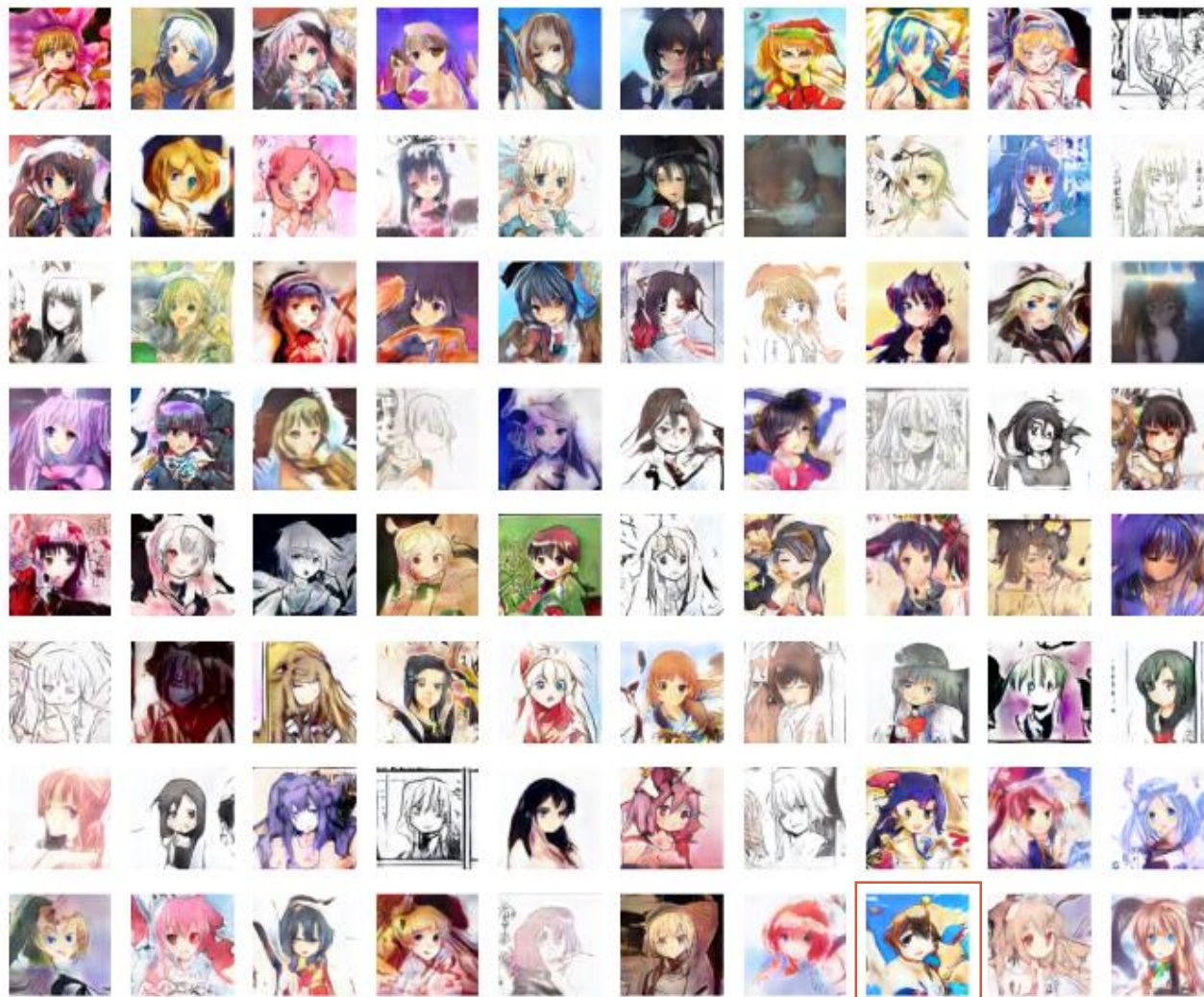
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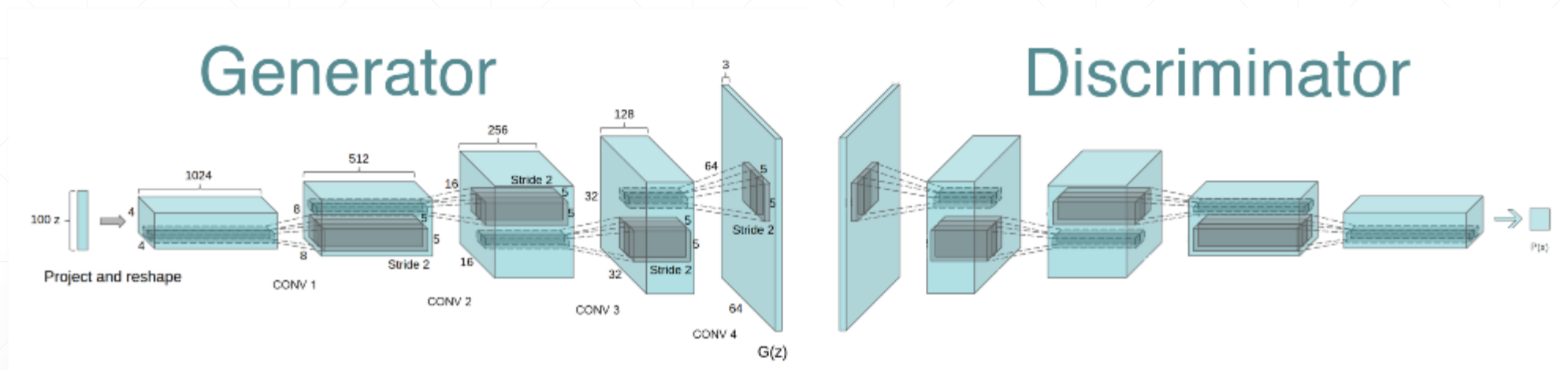
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Download

- dataset link: <https://pan.baidu.com/s/1eSifHcA>,
 - 提取码: g5qa
 - ~280MB
-

GAN



WGAN-GP

$$L = \underbrace{\mathbb{E}_{\tilde{\mathbf{x}} \sim \mathbb{P}_g} [D(\tilde{\mathbf{x}})] - \mathbb{E}_{\mathbf{x} \sim \mathbb{P}_r} [D(\mathbf{x})]}_{\text{Original critic loss}} + \lambda \underbrace{\mathbb{E}_{\hat{\mathbf{x}} \sim \mathbb{P}_{\hat{\mathbf{x}}}} [(\|\nabla_{\hat{\mathbf{x}}} D(\hat{\mathbf{x}})\|_2 - 1)^2]}_{\text{Our gradient penalty}} .$$

where $\hat{\mathbf{x}}$ sampled from $\tilde{\mathbf{x}}$ and \mathbf{x} with t uniformly sampled between 0 and 1

$$\hat{\mathbf{x}} = t\tilde{\mathbf{x}} + (1 - t)\mathbf{x} \text{ with } 0 \leq t \leq 1$$



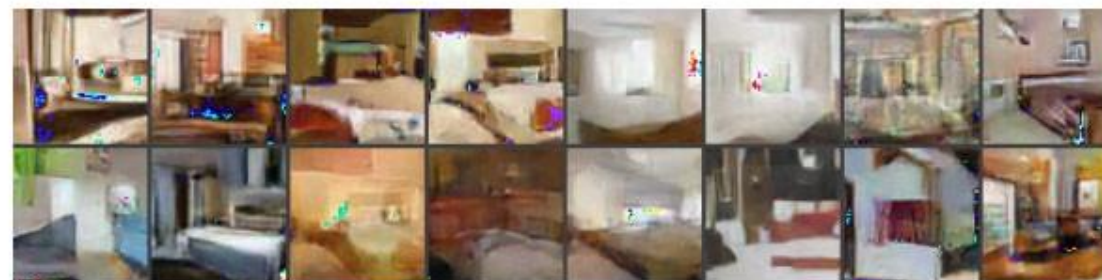
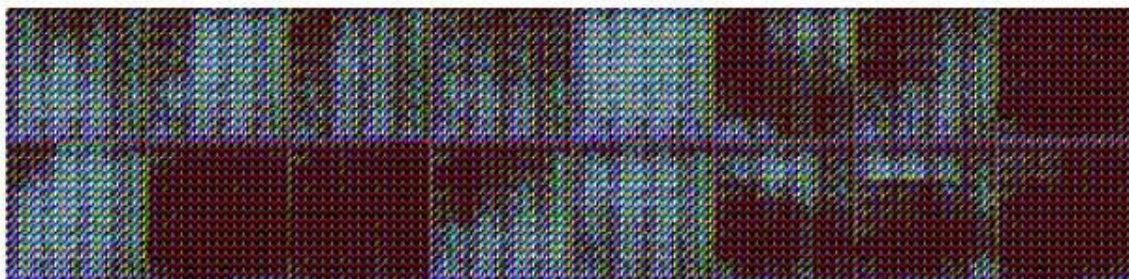
WGAN with DCGAN generator



GAN with DCGAN generator



**Without batch normalization &
constant number of filters at each layer**



Using a MLP as the generator



All critics and discriminators follow the same discriminator design in DCGAN



恭 喜

基础部分完结，
后续保持更新。

Thank You.
