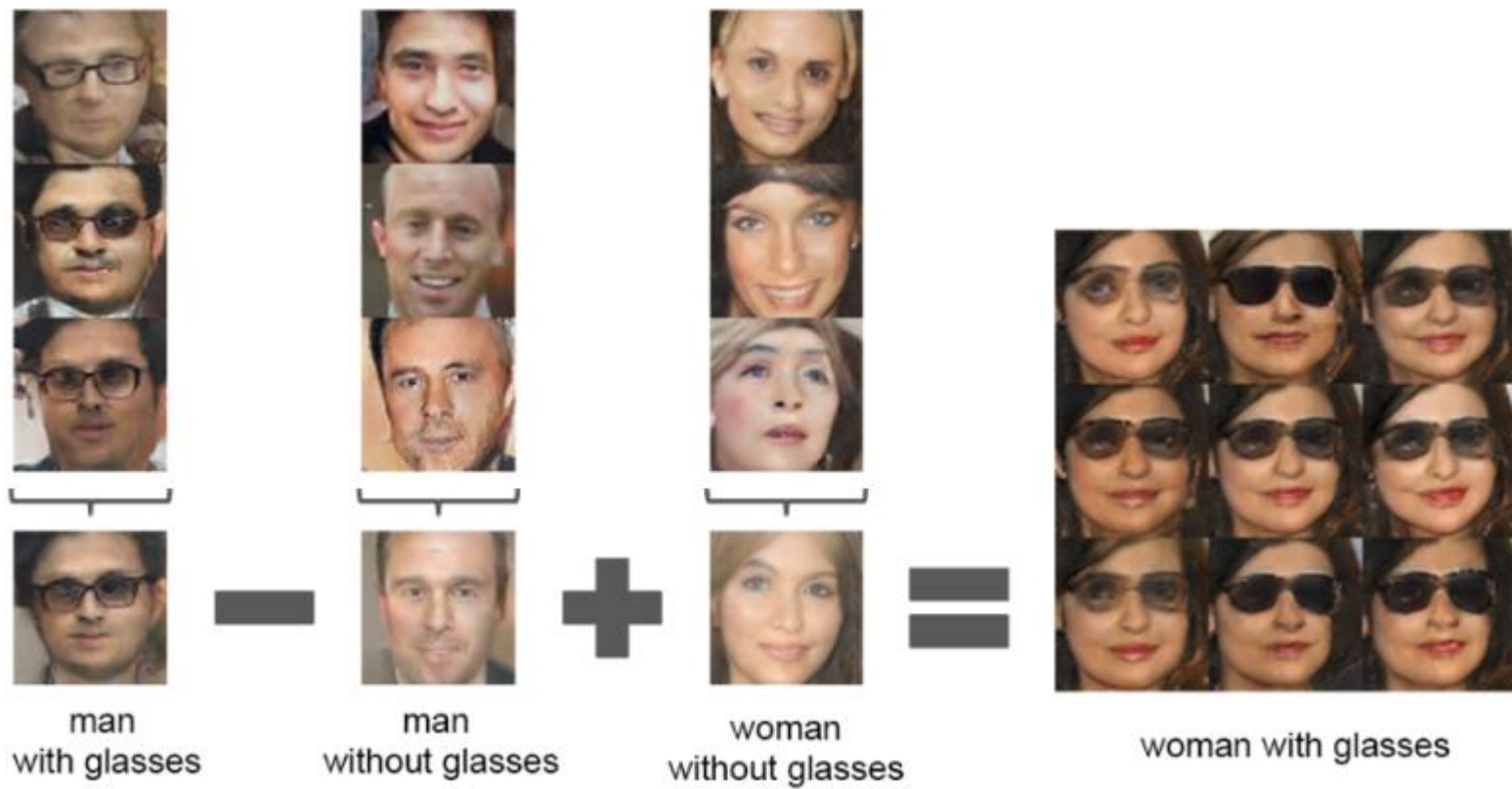
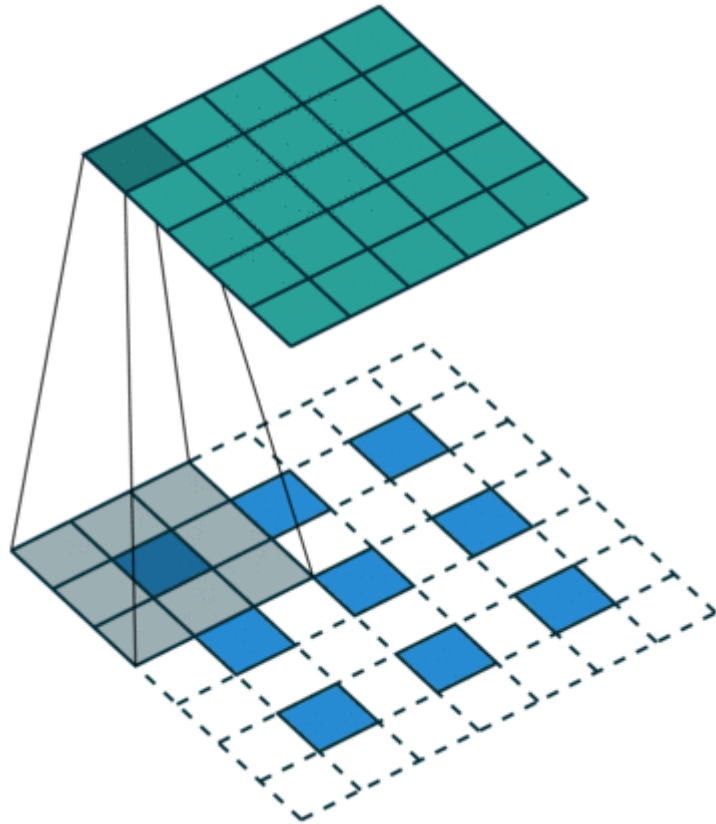


DCGAN



<input average>

fractionally-strided convolution



3x3 input을 upsampling 한후 convolution
-> 5x5 output

=Full convolution = upconvolution

슬라이드 동영상

Architecture guidelines for stable Deep Convolutional GANs

- Replace any pooling layers with strided convolutions (discriminator) and fractional-strided convolutions (generator).
- Use batchnorm in both the generator and the discriminator.
- Remove fully connected hidden layers for deeper architectures.
- Use ReLU activation in generator for all layers except for the output, which uses Tanh.
- Use LeakyReLU activation in the discriminator for all layers.

1. Max-Pooling layer를 없애고, strided convolution이나 fractional-strided convolution 을 사용하여 feature map 조절.

2. Batch normalization 적용

3. Fully connected hidden layer 제거

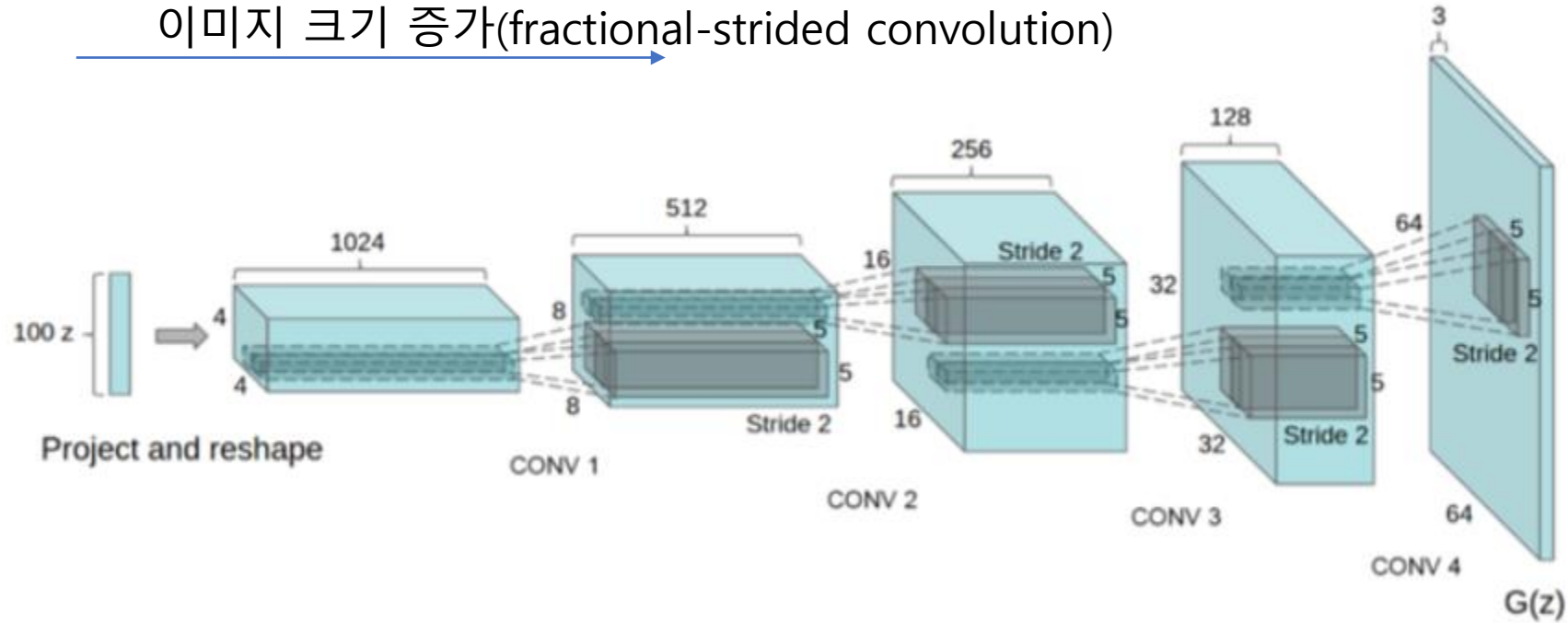
4. Generator의 출력단의 활성화함수로 Tanh를 사용, 나머지 layer는 ReLU사용

5. Discriminator의 활성화함수로 LeakyReLU를 사용.

참고. 일반적인 strided convolution에서 stride값을 1 이상으로 하면 이미지 크기를 줄이지만 , 1이하의 분수로 하면 (fractional-strided convolution) 이미지 크기 증가.

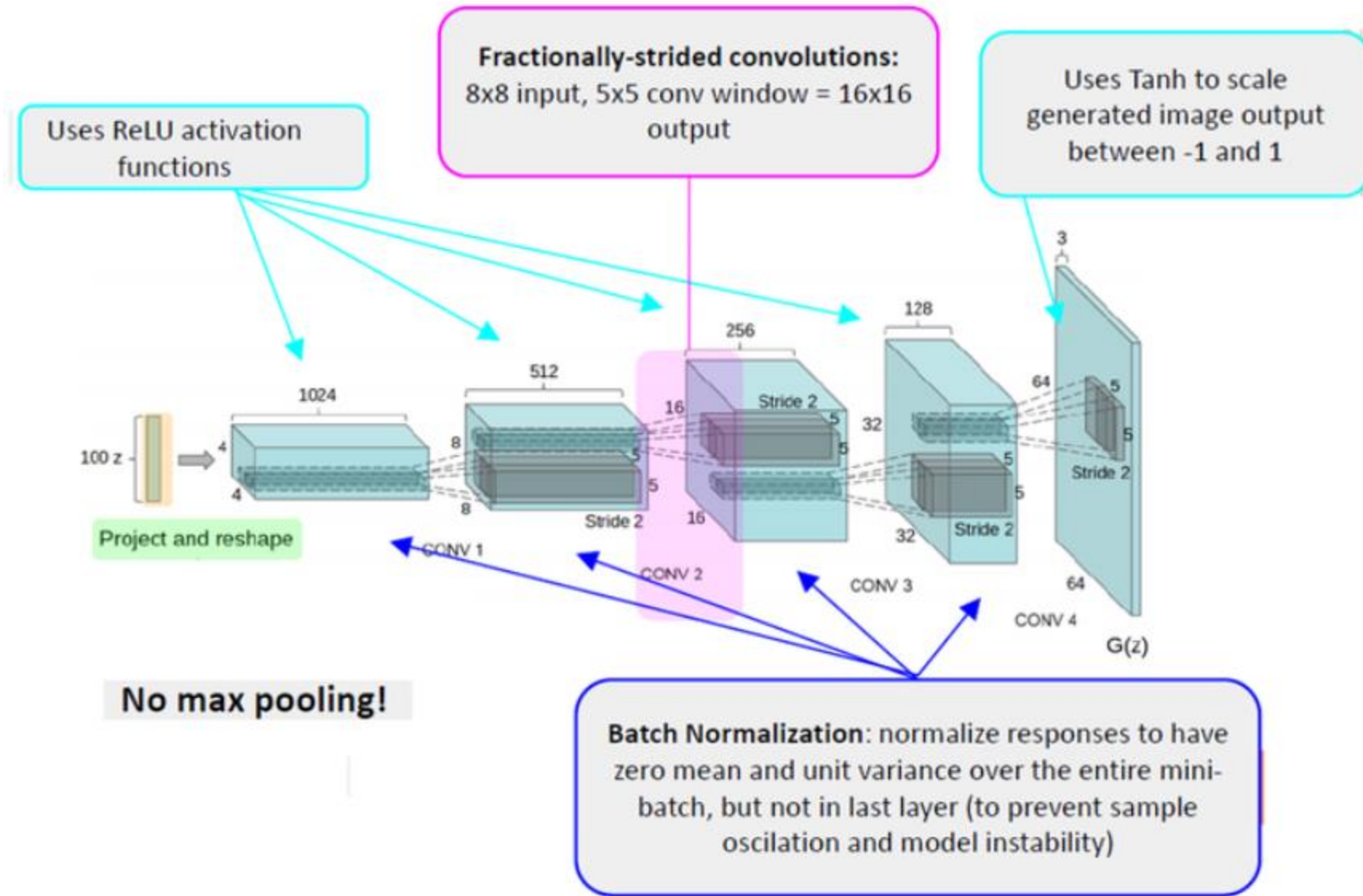
Generator

이미지 크기 증가(fractional-strided convolution)

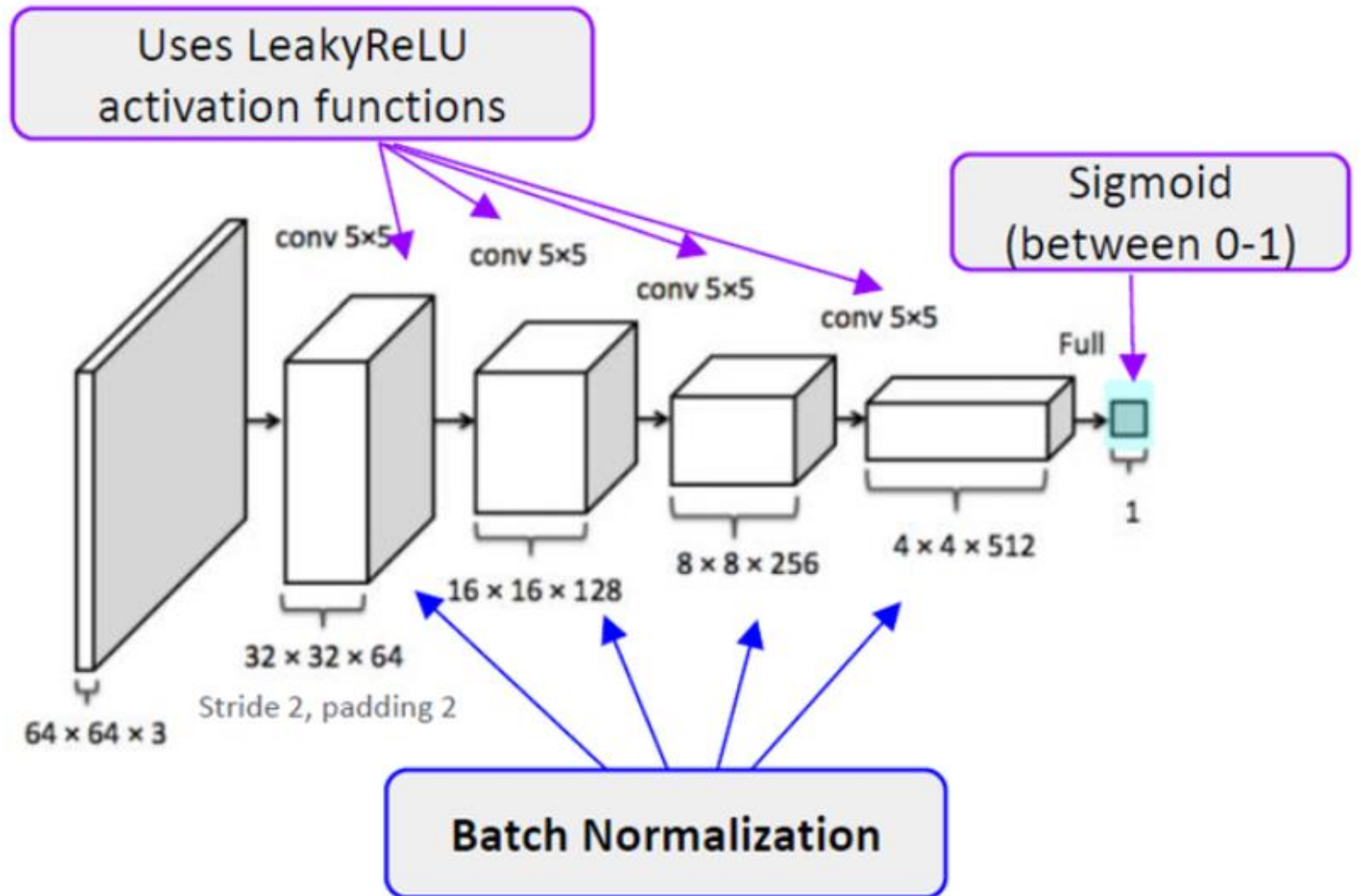


노이즈 -> Discriminator에서 사용할 컬러 이미지

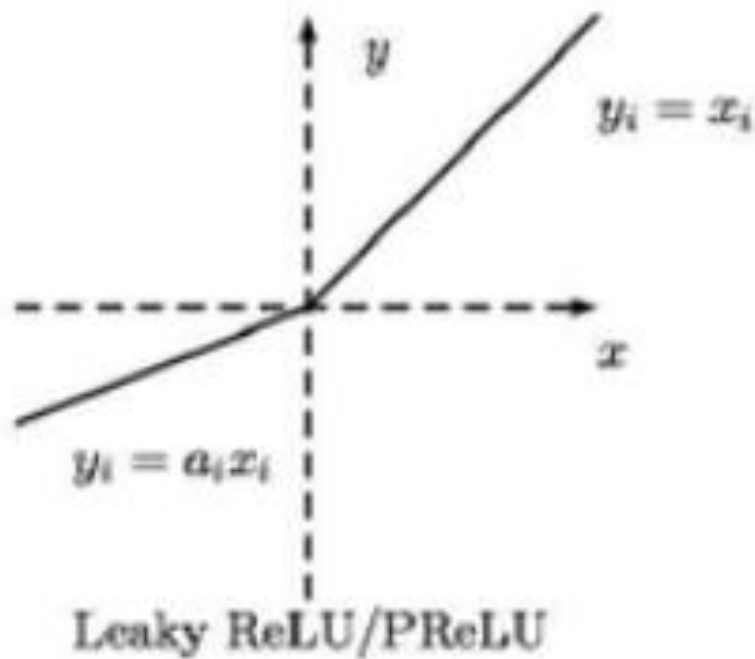
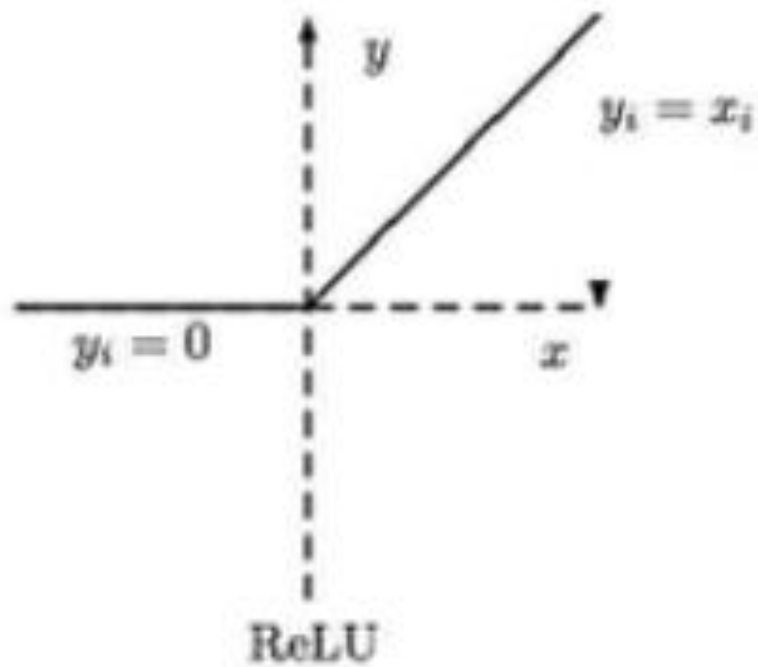
Generator



Discriminator



Leaky ReLU



값이 음수가 나오면 0 이되어 더 이상 학습 되지 않는 문제를 해결

