SMARCLE 2021 winter study : Chapter 19

19장 GAN, 오토인코더

: 세상에 없던 이미지

17 구범준, 17 김건우, 17 최태규, 18 권수지

Contents

SMARCLE

01

GAN 이론

Generative Adversarial Networks

Generator

VS

Discriminator

SMARCLE

D

진짜 or 가짜

Discriminator

조건

G

Generator

SMARCLE

D

Discriminator

진짜 or 가짜

input :

고차원벡터

28 x 28

output :

1차원벡터

진짜 or 가짜
1 or 0

tanh

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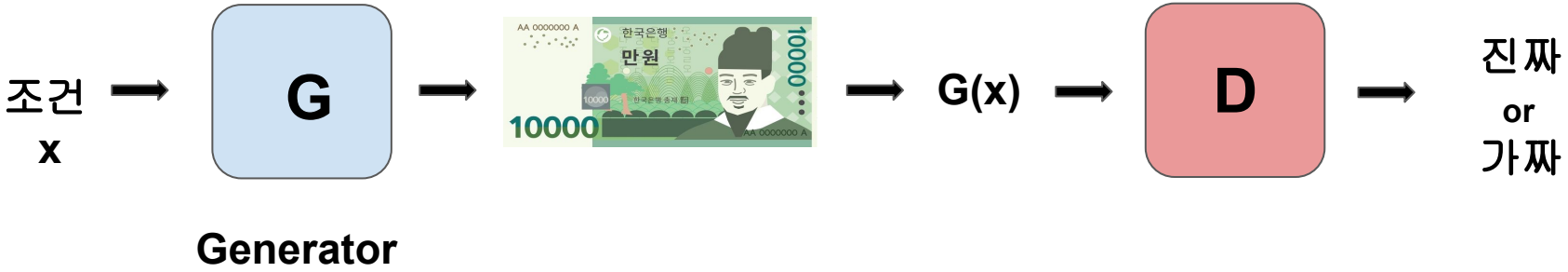
조건
x



Generator

input :

어떠한 조건 x

output :

고차원벡터

28 x 28

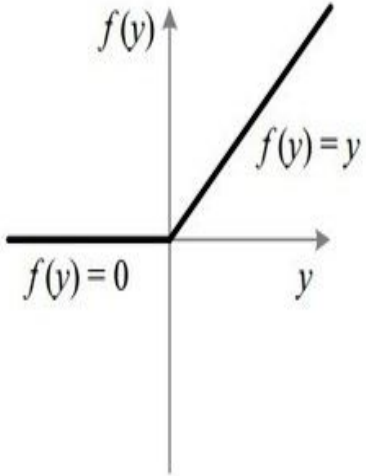
padding

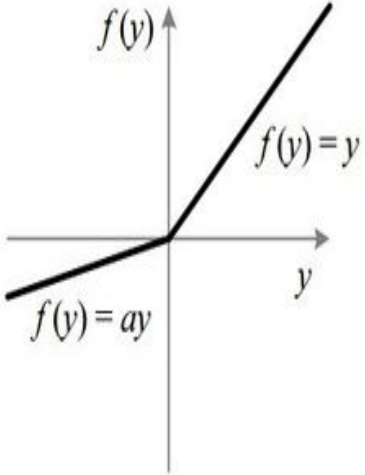
02

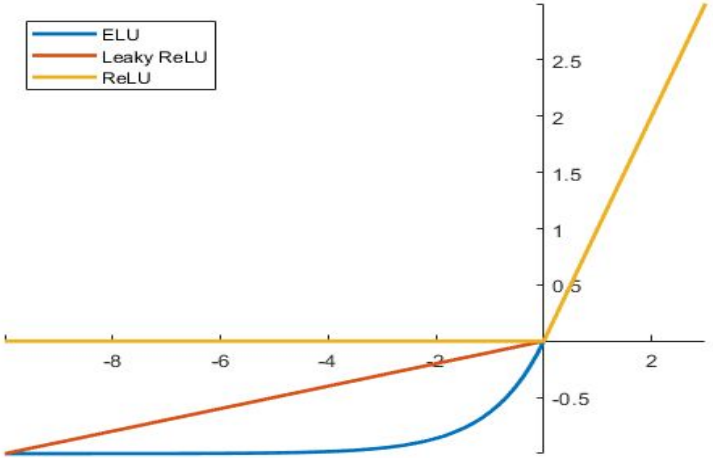
Gan 실습

2.1 GAN 코랩 실습

2.2 LeakyReLu 함수



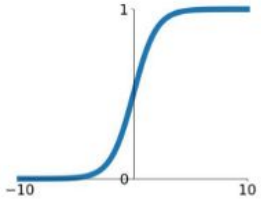




2.2 LeakyReLu 함수

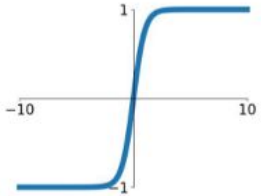
Sigmoid

$$\sigma(x) = \frac{1}{1+e^{-x}}$$



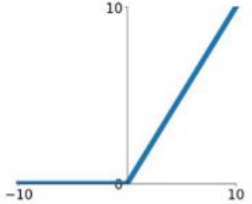
tanh

$$\tanh(x)$$



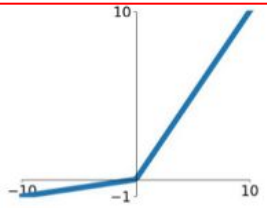
ReLU

$$\max(0, x)$$



Leaky ReLU

$$\max(0.1x, x)$$

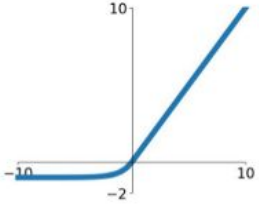


Maxout

$$\max(w_1^T x + b_1, w_2^T x + b_2)$$

ELU

$$\begin{cases} x & x \geq 0 \\ \alpha(e^x - 1) & x < 0 \end{cases}$$



출처 : 모두의 딥러닝 개정 2판

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2.3 DeepFake 실습영상

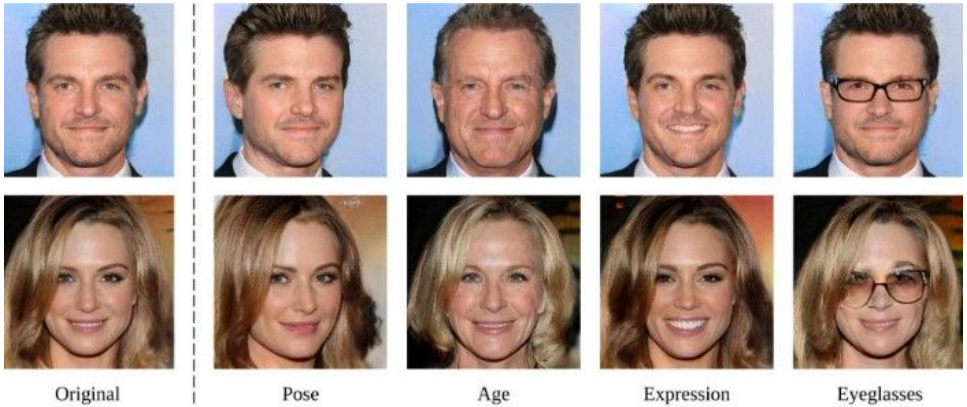
https://www.youtube.com/watch?v=sKDPunhmzkk

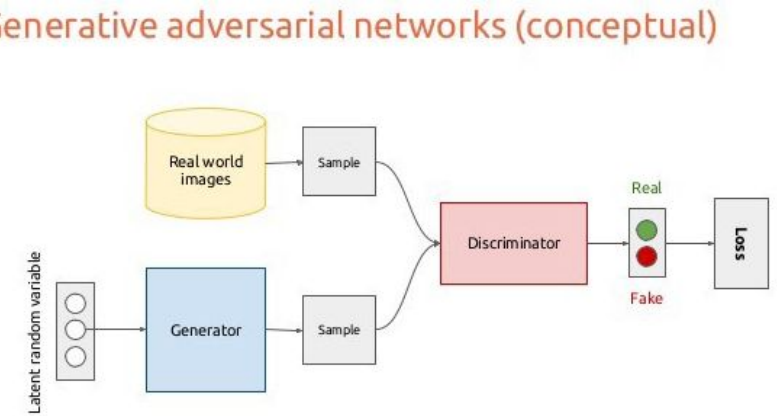
03

오토인코더

Auto-Encoder, AE

3.1 오토인코더(Auto-Encoder)와 GAN





GAN!

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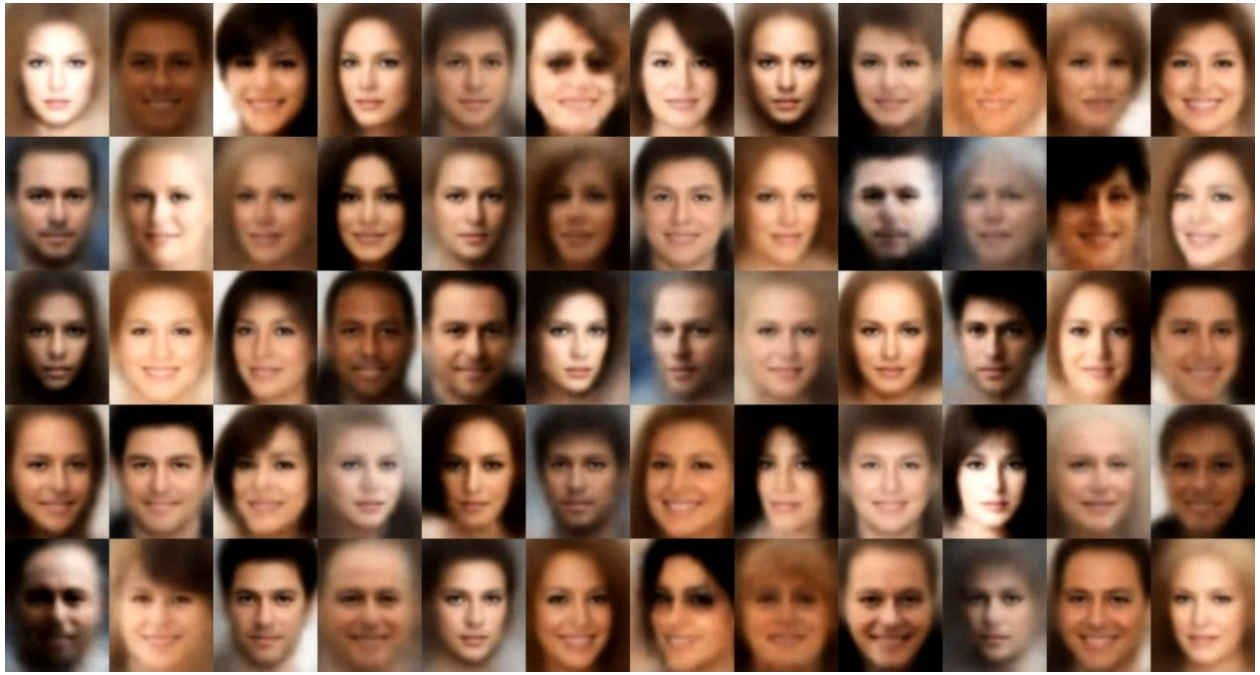
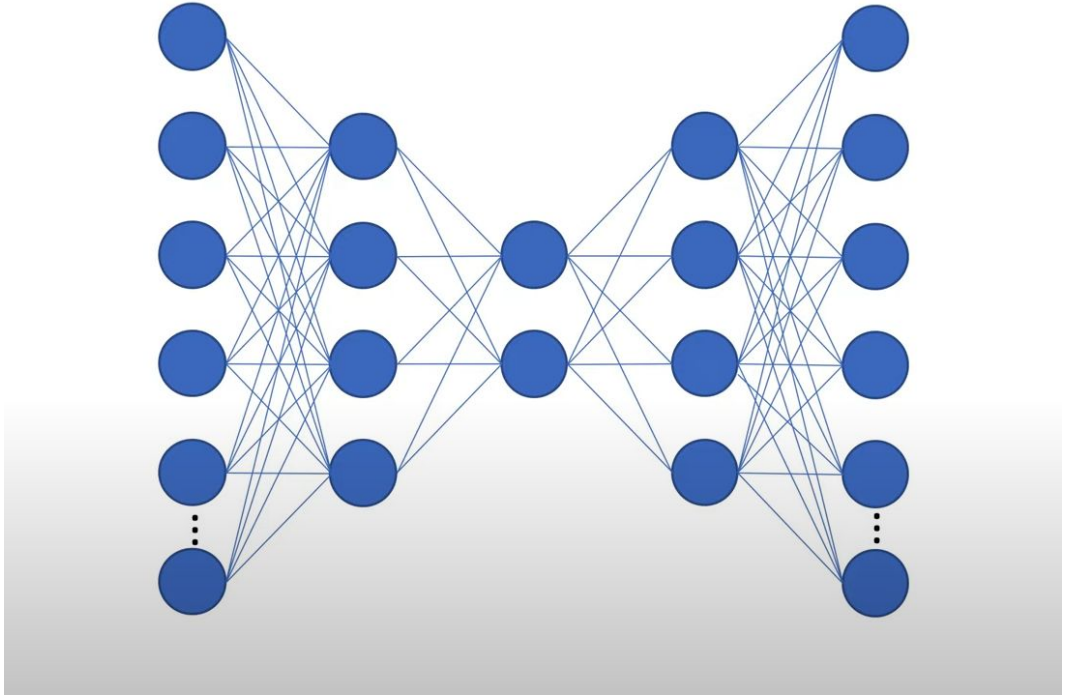
3.1 오토인코더(Auto-Encoder)와 GAN

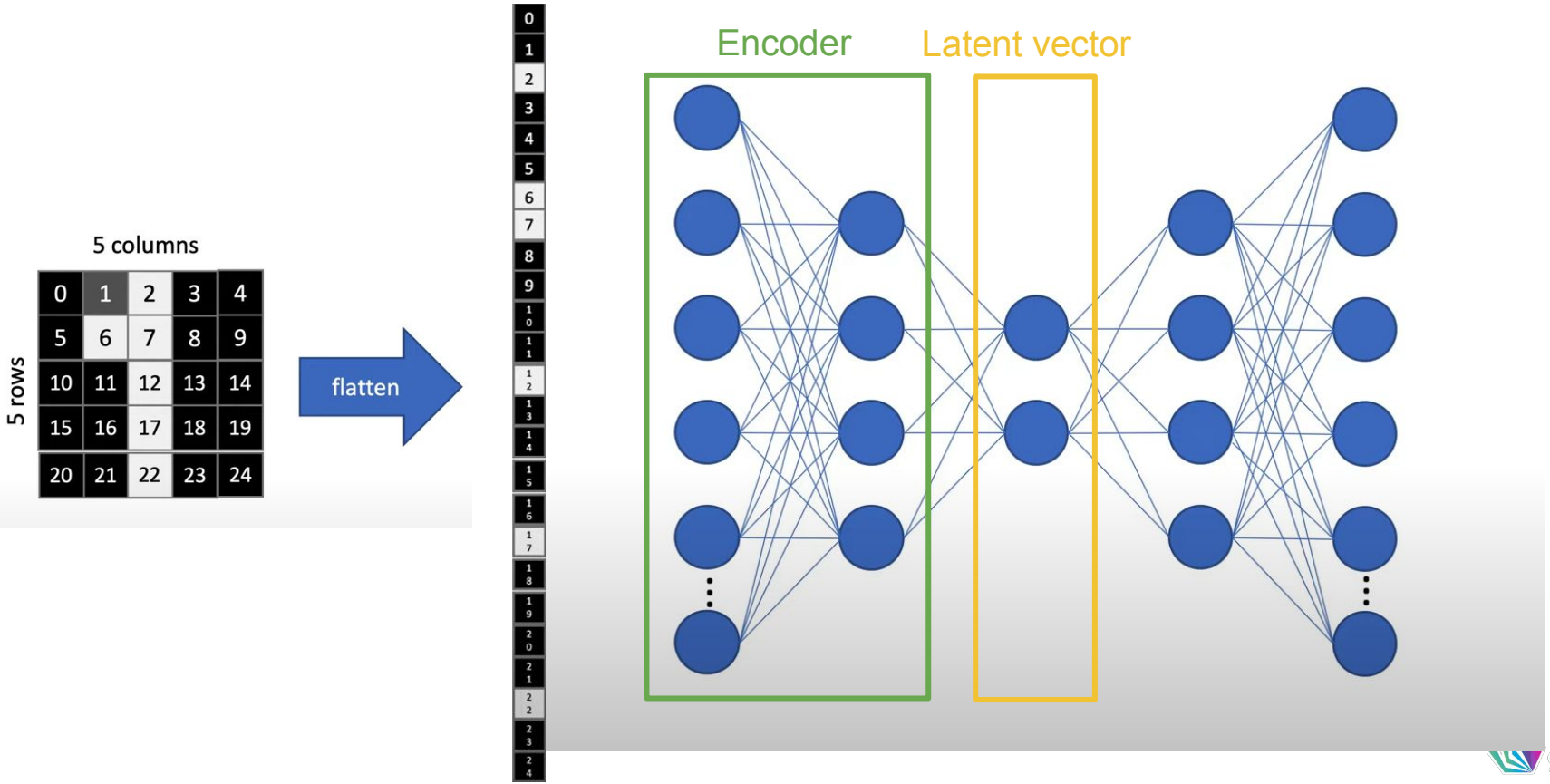


AE!

3.2 오토인코더(Auto-encoder)의 원리

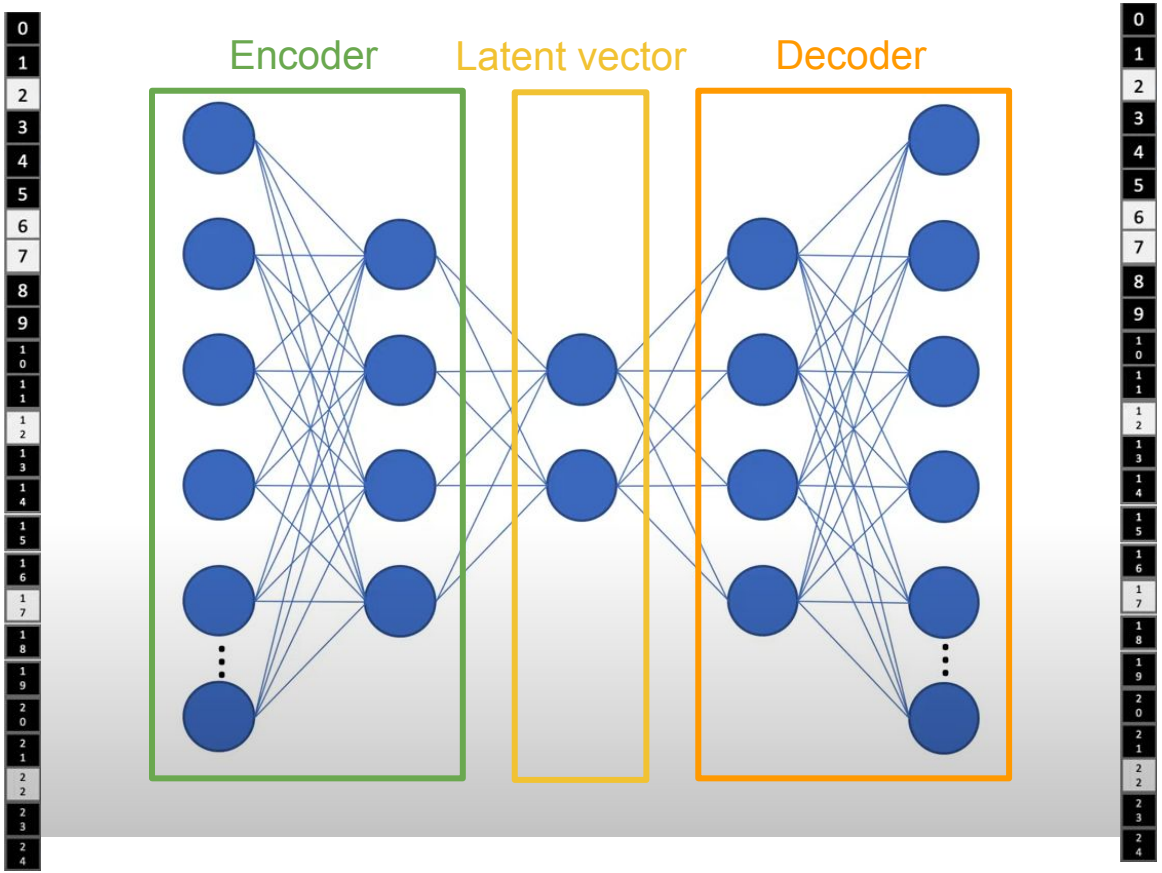


3.2 오토인코더(Auto-encoder)의 원리



3.2 오토인코더(Auto-encoder)의 원리

Optimize (minimize loss)



0

4

오토인코더 실습