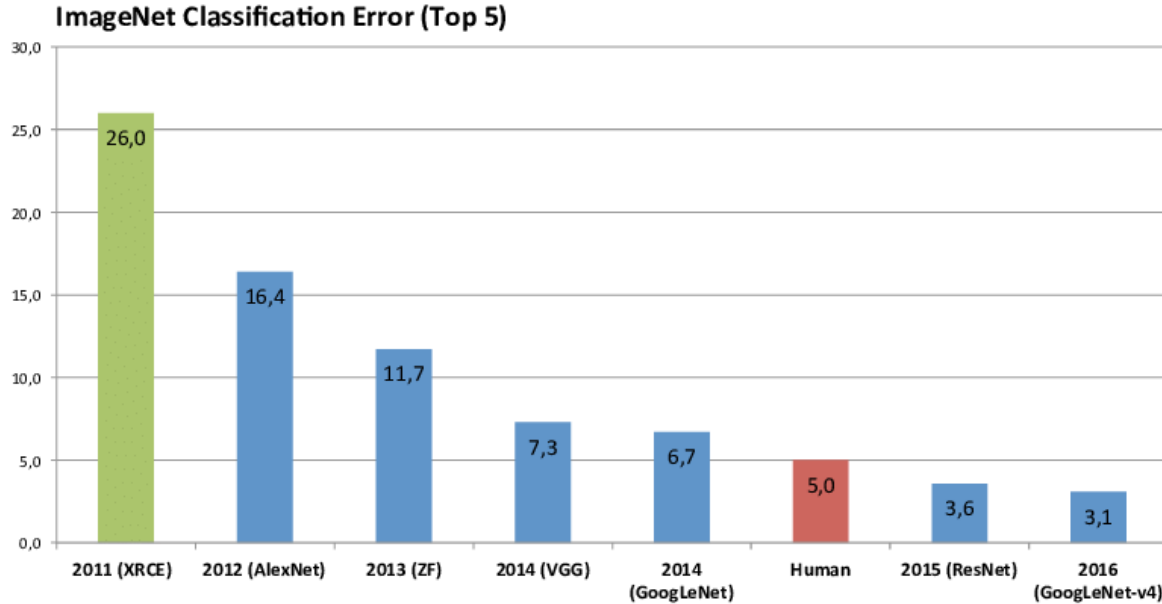


# AI 실전 7주차

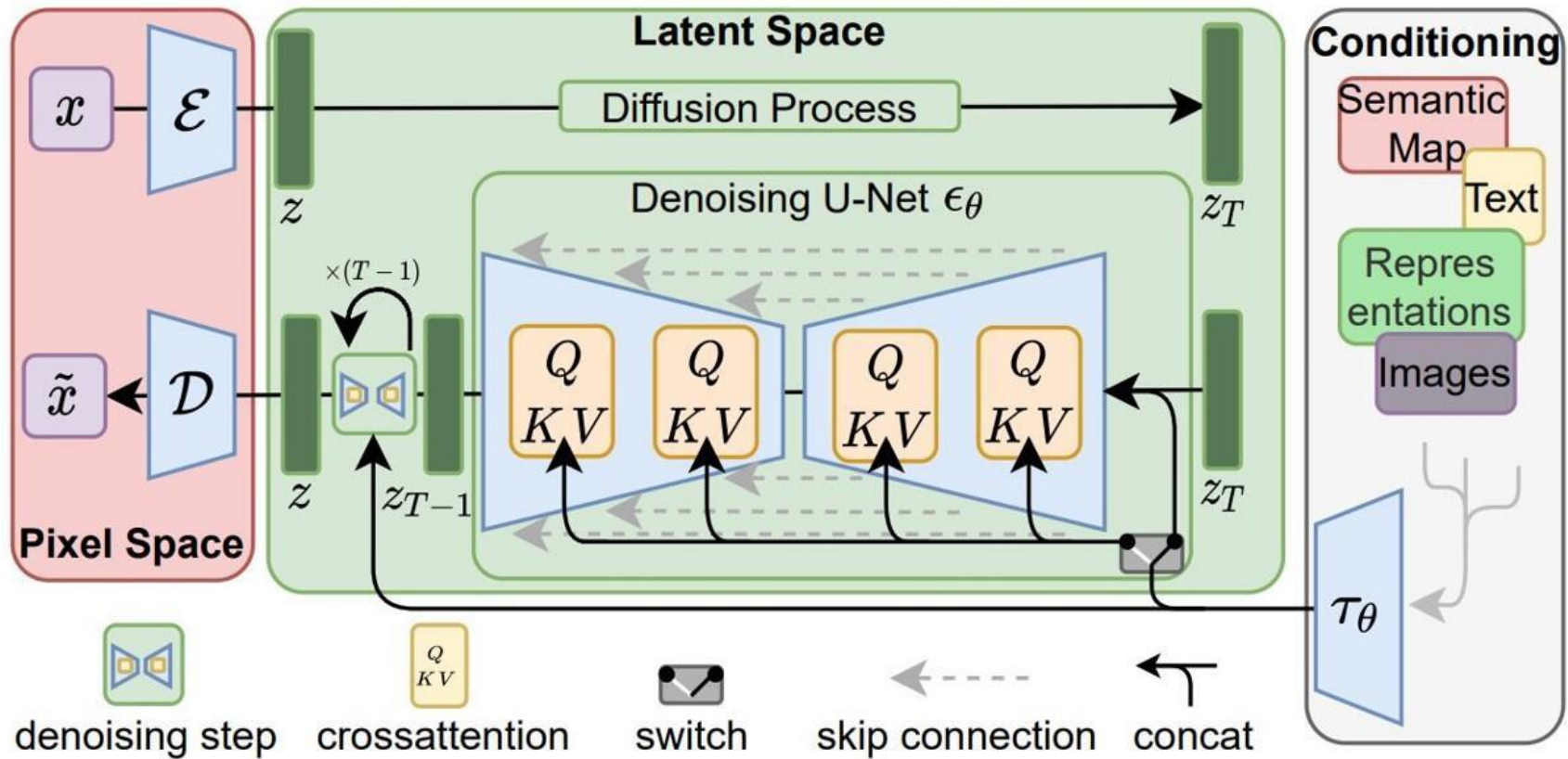
특정 물체의  
이미지 생성 모델 파인튜닝

# 이미지 생성에 가장 큰 핵심



- 이미지 분류를 통해서 사람보다 분류 잘하는 인공지능 2015년 이후...
- CNN 레이어를 이용하여 이미지 특성 추출과 분류를 잘함.

# Denoise 및 이미지 생성 프롬프트



# 모델 파라미터(학습데이터)에 따른 모델



Realistic Vision



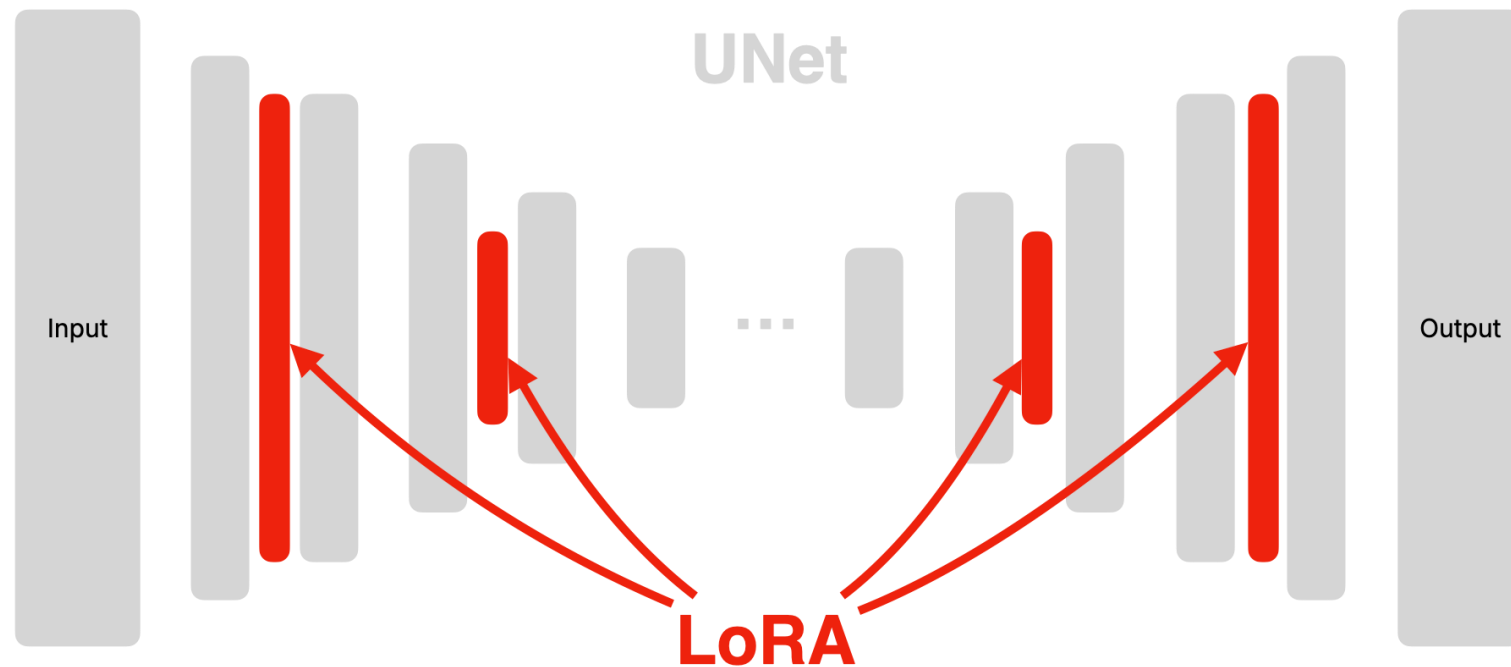
Anything v3



DreamShaper

특정 캐릭터 외형 맞추어  
만들어보다면?

# LoRA<sub>(Low-Rank Adaptation)</sub> 적용한 모델 구조(이미지)



Lora 필요성

# 특정 그림체 스타일 적용

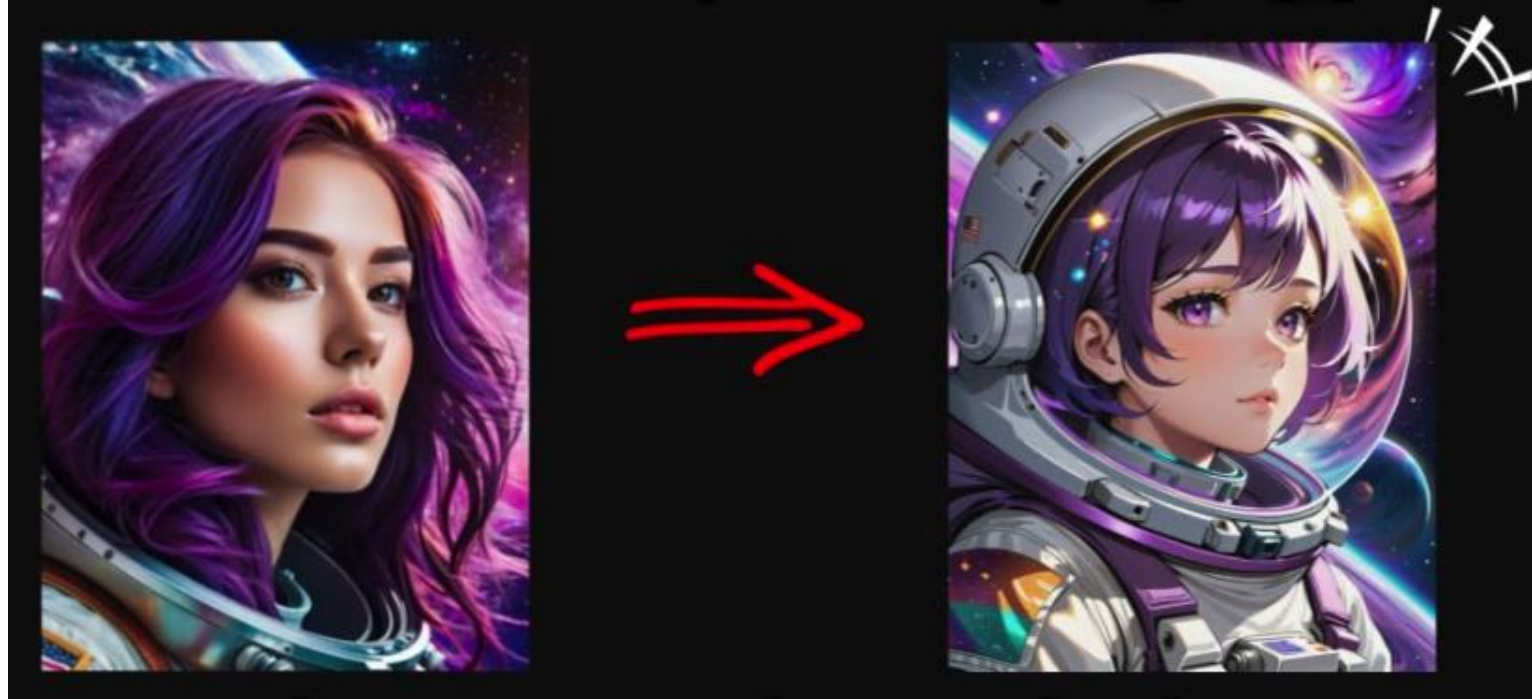
## 실험 결과

베이스 모델과 LoRA fine-tuning 모델의 비교 결과입니다.





# 특정 캐릭터 안성맞춤 출력



보란색 머리 가진 여성이  
우주복 입은 초상화

오버워치 "주노" 캐릭터

# 아이오닉 6 LoRA 만들기

학습대상 데이터 [링크](#)

# LoRA 만들기 필요한 것












- 만들고자하는 대상 객체만 있는 이미지 확보가 되어 있어야함.
- 그 대상이 구체적으로 어떠한 Prompt 있다면 더 좋음!





# LoRA 데이터 셋 만들기

LoRA Dataset Maker colab [링크](#)

# LoRA 데이터 프로젝트 생성



>  Start Here

 **1 Setup**

This cell will load some requirements and create the necessary folders in your Google Drive.

Your project name can't contain spaces but it can contain a single / to make a subfolder in your dataset.

**project\_name:**

The folder structure doesn't matter and is purely for comfort. Make sure to always pick the same one. I like organizing by project.

**folder\_structure:**

[코드 표시](#)

# 프로젝트 생성 후 드라이브 데이터 넣기

... > ionic6 > dataset ▾



사진 및 이미지 ▾



사람 ▾

수정 날짜 ▾

출처 ▾

필터 지우기

이름



 2.jpg



 3.jpg



 4.jpg



# (학습할 데이터 없으면 해야하는 옵션)



## 2 Scrape images from Gelbooru

We will grab images from the popular anime gallery [Gelbooru](#). Images are sorted by tags, including poses, scenes, character traits, character names, artists, etc.

- If you instead want to use your own images, upload them to your Google Drive's `Loras/project_name/dataset` folder.
- If you instead want to download screencaps of anime episodes, try [this other colab by another person](#). It's more complicated though.

Up to 1000 images may be downloaded by this step in just one minute. Don't abuse it.

Your target tags should include the relevant tags for your character/concept/artstyle, and exclude undesired tags (for example, explicit images may affect learning). Separate words with underscores, separate tags with spaces, and use - to exclude a tag. You can also include a minimum score: `score:>10`

**tags:** " 여기에 text 입력 "

[코드 표시](#)

# 중복이미지 제거(데이터 전처리)

## 3 Curate your images

We will find duplicate images with the FiftyOne AI and delete them.

This is how similar 2 images must be to be marked for deletion. I recommend 0.97 to 0.99:

**similarity\_threshold:** 0.985

You can choose between only deleting the duplicates, or additionally opening an interactive area below this cell that lets you visualize all your images and manually mark with `delete` to the ones you don't like.

If the interactive area appears blank for over a minute, try enabling cookies and removing tracking protection for the Google Colab website, as they may break it. Regardless, you can save your changes by sending Enter in the input box above the interactive area.

**action:** Delete duplicates ▼

To open the interactive area in a new tab INSTEAD of below, you need an ngrok account.

**open\_in\_new\_tab:** ☐

**ngrok\_token:** "여기에 text 입력"

[코드 표시](#)



# 학습할 이미지 유형 지정



## 4 Tag your images

We will be using AI to automatically tag your images, specifically [Waifu Diffusion](#) in the case of anime and [BLIP](#) in the case of photos.

Giving tags/captions to your images allows for much better training. This process takes 5 minutes to install and 5 more minutes to tag a thousand images. It goes through all subfolders if you have any.

method: Photo captions

Anime: Using

names if you

Anime tags

Photo captions

tagger: Both

tag\_threshold:  0.25

blacklist\_tags: "virtual youtuber, parody, style parody, official alternate costume, official alternate hairstyle, official alternate hair length, alternate costume, alternate hairstyle"

include\_character\_names: ☐

Photos: The minimum and maximum length of tokens/words in each caption.

caption\_min: 10

caption\_max: 75

# LoRA 데이터 세팅 시작



6

Ready

You should be ready to [train your Lora!](#)

[코드 표시](#)

# LoRA (SDXL기반) 모델 만들기

LoRA Trainer Colab [링크](#)

# 학습할 프로젝트 넣기

↑ ↓ ⬥ 🔗 🗨 ⚙ 📄 🗑 ⋮

> ▶ Start Here

▶ ▶ Setup

Your project name will be the same as the folder containing your images. Spaces aren't allowed.

project\_name: " ionic6 "

The folder structure doesn't matter and is purely for comfort. Make sure to always pick the same one. I like organizing by project.

folder\_structure: Organize by project (MyDrive/Loras/project\_name/dataset) ▼

# LoRA 학습할 대상의 모델 선택

training\_model

Stable Diffusion XL 1.0 base

optional\_custom\_training\_model:

여기에 text 입력

custom\_model\_is\_diffusers: ☐

custom\_model\_is\_vpred: ☐

Stable Diffusion XL 1.0 base

Pony Diffusion V6 XL

Illustrious XL 0.1

NoobAI V-Pred 1.0

NoobAI Eps 1.1

Animate XL V3

Stable Diffusion XL 1.0 base

Animation 생성 모델

실사 생성 모델

# 학습 횟수 지정

## Steps

Your images will repeat this number of times during training. I recommend that your images multiplied by their repeats is around 100, or 1 repeat with more than 100 images.

num\_repeats:

10

장당 학습 횟수

Choose how long you want to train for. A good starting point is around 10 epochs or around 2000 steps.

One epoch is a number of steps equal to: your number of images multiplied by their repeats, divided by batch size.

preferred unit:

Epochs

how\_many:

10

얼마만큼 학습 반복할 것인지

# Finetuning 대상에 따른 차원 지정

## Structure

LoRA is the classic type and good for a variety of purposes. LoCon is good with artstyles as it has more layers to learn more aspects of the dataset.

lora\_type: LoRA

Below are some recommended XL values for the following settings:

type	network_dim	network_alpha	conv_dim	conv_alpha
Regular LoRA	8	4		
Style LoCon	16	8	16	8

More dim means larger Lora, it can hold more information but more isn't always better.

network\_dim:  8

network\_alpha:  4

The following two values only apply to the additional layers of LoCon.

conv\_dim:  16

conv\_alpha:  8

# 자동차 프롬프트

- **Prompt** : car, 4k, modelshoot style, (extremely detailed CG unity 8k wallpaper), unreal engine, 75mm lens, High Detail, Sharp focus, dramatic, cinematic lighting
- **Negative Prompt**: (bad composition), (out of frame), off center, drawing, anime, art, cartoon, painting, drawing, anime, art, cartoon, painting, drawing, anime, art, cartoon, painting, Low quality, worst quality, bad anatomy, bad gun anatomy, 144p, blurry, censored, artifacts, jpeg artifact, oversaturation, watermark





# 아이오닉 6 자동차 프롬프트

- **Prompt** : <아이오닉 태그>, ionic6-car, 4k, modelshoot style, (extremely detailed CG unity 8k wallpaper), unreal engine, 75mm lens, High Detail, Sharp focus, dramatic, cinematic lighting
- **Negative Prompt**: (bad composition), (out of frame), off center, drawing, anime, art, cartoon, painting, drawing, anime, art, cartoon, painting, drawing, anime, art, cartoon, painting, Low quality, worst quality, bad anatomy, bad gun anatomy, 144p, blurry, censored, artifacts, jpeg artifact, oversaturation, watermark



# Stable Diffusion WebUI Forge on Colab

Colab [링크](#)