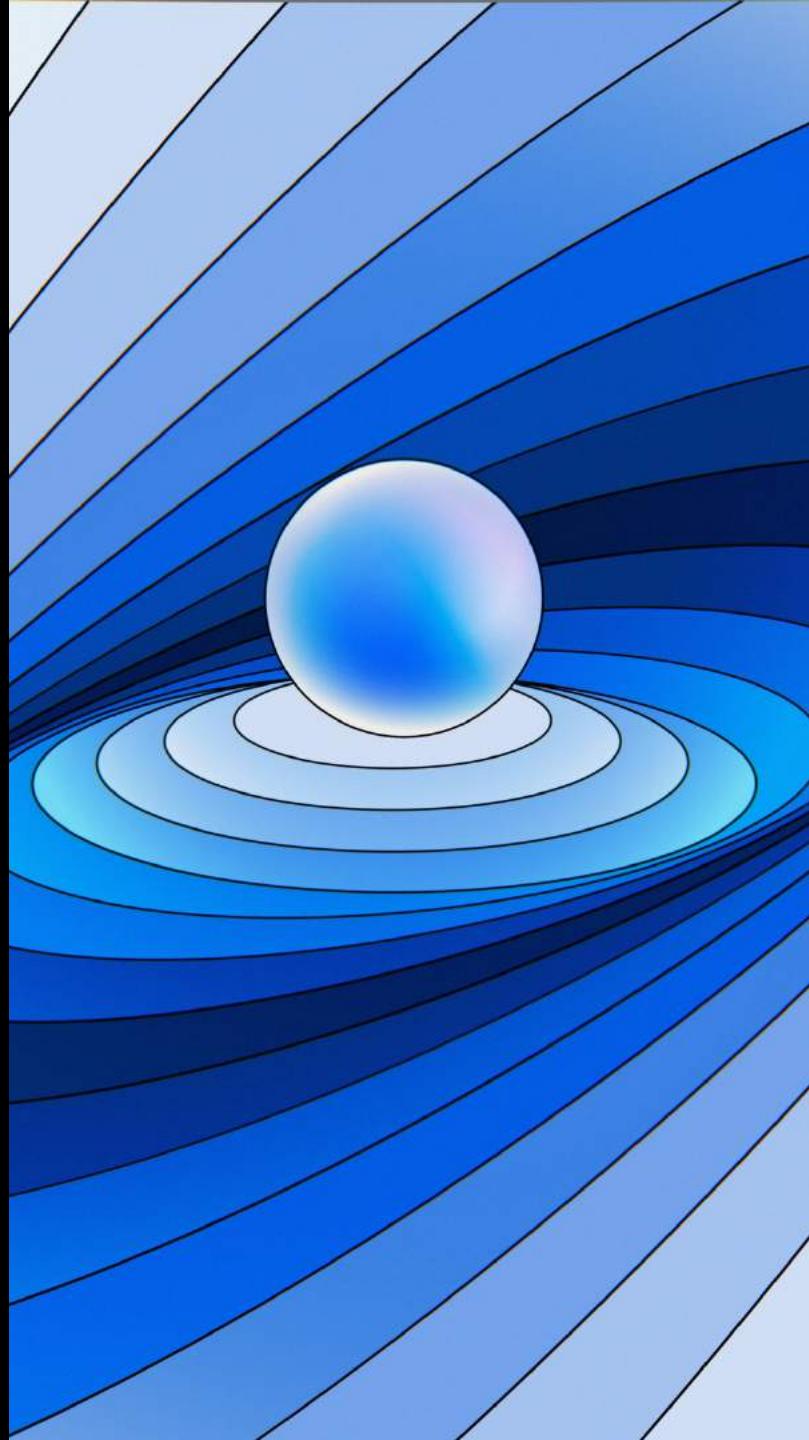


AI ART - LESSON 3 - MAR 29, 2023

TOOLS & WORKFLOWS FOR AI ART (PART 1)

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WHY AM I HERE?

- PROMPT ENGINEERING
- IMAGE PROMPTING
- INPAINTING
- OUTPAINTING
- UPSCALING
- VERSIONS & CUSTOM MODELS

WHAT'S NEXT?

- ~~LESSON 1 - INTRODUCTION TO AI ART~~
- ~~LESSON 2 - BASIC TOOLS FOR CREATING AI ART~~
- **LESSON 3 - TOOLS & WORKFLOWS FOR AI ART (PART 1)**
- LESSON 4 - TOOLS & WORKFLOWS FOR AI ART (PART 2)
- LESSON 5 - GETTING FAMILIAR WITH GAN

PROMPT ENGINEERING

- **GOOGLE BARD'S DEFINITION:** "PROMPT ENGINEERING IS THE ART OF CRAFTING PROMPTS THAT WILL PRODUCE THE BEST POSSIBLE RESULTS FROM A TEXT-TO-IMAGE GENERATOR."
- **BASIC TIPS**
 - Be specific: instead of "a city," say "a large, industrial city in the style of Monet"
 - Use keywords to indicate style, mood, or subject matter.
 - Don't be afraid to experiment.
 - Be patient and persistent.



PROMPT ENGINEERING

- **START BY ASKING A LIST OF QUESTIONS:**
- 1. DO YOU WANT A PHOTO OR A PAINTING?
- 2. WHAT'S THE SUBJECT OF THE PHOTO? *PERSON? AN ANIMAL OR PERHAPS A LANDSCAPE?*
- 3. WHAT DETAILS DO YOU WANT TO ADD?
 - **Special Lighting.** *Soft, ambient, ring light, neon*
 - **Environment.** *Indoor, outdoor, underwater, in space*
 - **Color Scheme.** *Vibrant, dark, pastel*
 - **Point of view.** *Front, Overhead, Side*
 - **Background.** *Solid color, nebula, forest*
- 4. IN A SPECIFIC ART STYLE? *3D RENDER, STUDIO GHIBLI, MOVIE POSTER*
- 5. A SPECIFIC PHOTO TYPE? *MACRO, TELEPHOTO*

Example

Answer the following questions

1. Do you want a photo or a painting? => **painting**
2. What's the subject of the photo? Person, animal, landscape.
=> **a goldendoodle**
3. What details do you want to be added? => **wearing a suit**
 - a. Special Lighting. Soft, ambient, ring light, neon =>
natural light
 - b. Environment. Indoor, outdoor, underwater, in space
=> **in the sky**
 - c. Color Scheme. Vibrant, dark, pastel
=> **with bright colors**
4. In specific art style? 3D render, studio ghibli, movie poster
=> **by Studio Ghibli**

Use the answers to create a complete sentence

A painting of a cute goldendoodle wearing a suit, natural light, in the sky, with bright colors, by Studio Ghibli

See the next page for the generated image.



A painting of a cute goldendoodle wearing a suit, natural light, in the sky, with bright colors, by Studio Ghibli

!

However, there is a problem. The goldendoodle is NOT in the sky... The AI didn't take in "in the sky" properly.

Worry not! You can change the order of the words a little bit if one part is important. The earlier a word is in the sentence, the more importance it will be given.



A painting of a cute goldendoodle in the sky, wearing a suit, natural light, with bright colors, by Studio Ghibli

We moved “in the sky” earlier in the prompt. As you can see, the dog is now “in the sky”.

The order of words is important

The order and presentation of our desired output is almost as an important aspect as the vocabulary itself. It is recommended to list your concepts explicitly and separately than trying to cramp it into one simple sentence.

A cat sitting on a martian table.



A cat that is sitting on a table
on mars.



A cat that is sitting on a table.
The table is on mars.



The order of words can be as important as the words themselves

This trick is especially useful when trying to make unusual creations.

Pink ice cream truck with machine gun mounted on it, technical



Machine gun mounted on top of a pink ice cream truck, technical



“Using the same seed and sampler”

In the above example, the machine gun doesn't appear unless you put it in the start of the prompt!

PROMPT ENGINEERING

- **STYLE MODIFIERS** - DESCRIPTORS WHICH CONSISTENTLY PRODUCE CERTAIN STYLES
 - "photorealistic, by norman rockwell, painting, digital painting, concept art, wide lens, 3D render, cinematic lighting, photo, natural light, film grain"
- **QUALITY BOOSTERS** - TERMS ADDED TO A PROMPT TO IMPROVE CERTAIN NON-STYLE-SPECIFIC QUALITIES
 - "high resolution, 2K, 4K, 8K, clear, good lighting, detailed, extremely detailed, sharp focus, intricate, beautiful, realistic, complementary colors, high quality, hyper detailed, masterpiece, best quality, stunning"

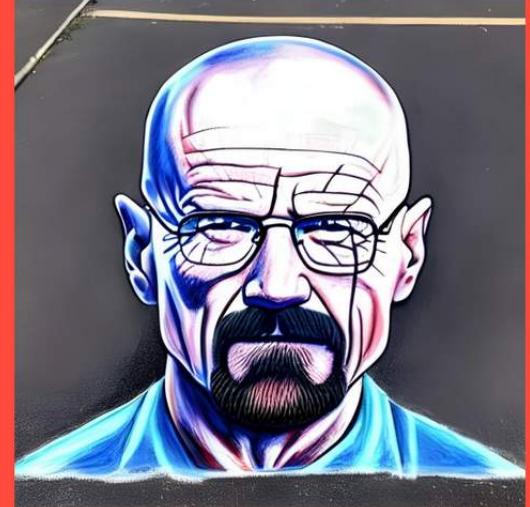
Photography Modifiers

Shot type	Style	Subject	Lighting	Context	Lens	Device
Close-up	polaroid	Woman	Soft	Indoor	Wide-angle	iPhone X
Extreme Close-up	Monochrome	Old man	Ambient	Outdoor	Telephoto	CCTV
POV	Long exposure	Grey cat	Ring	At night	24mm	Nikon Z FX
Medium shot	Color splash	Bunny	Sun	In the park	EF 70mm	Canon
Long shot	Tilt-shift	Ferrari	Cinematic	Studio	Bokeh	Gopro



**Close-up polaroid
photo, of a husky,
soft lighting,
outdoors, 24mm
Nikon Z FX**

Art Mediums



Chalk

A sidewalk **chalk painting** of walter white



Graffiti

wall **graffiti** art of astronaut holding a super soaker



Water Colors

water color painting of sunset behind mountains, detailed, vaporwave aesthetic



Oil Painting

Oil painting of human Rick Sanchez, contest winner

3D illustrations



Isometric assets

Tiny cute **isometric** kitchen in a cutaway box, soft smooth lighting, soft colors, 100mm lens, 3d blender render



Low Poly

kawaii **low poly** squirrel character, 3d isometric render, white background, ambient occlusion, unity engine



Pixar Renders

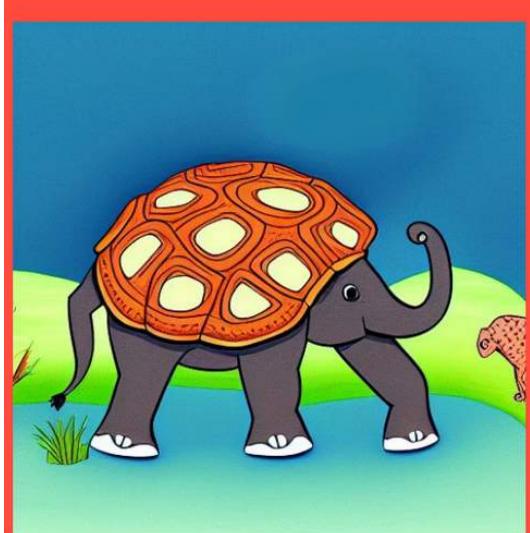
3d fluffy Lion, closeup cute and adorable, cute big circular reflective eyes, long fuzzy fur, **Pixar render**, unreal engine cinematic smooth, intricate detail, cinematic



3D Item Render

Tiny isometric Alarm Clock, soft smooth lighting, soft colors, **3d blender render**, trending on polycount, modular constructivism, physically based rendering

More illustrations



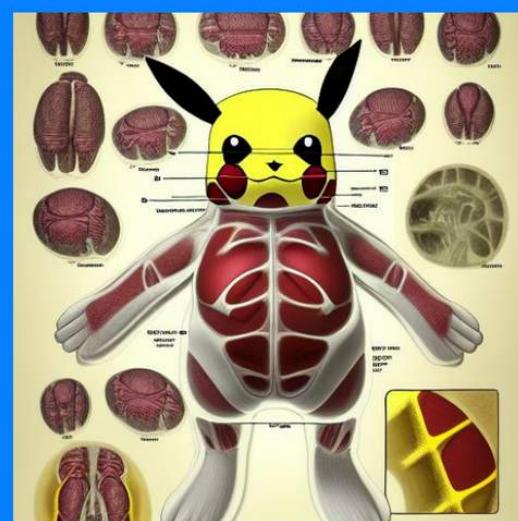
Children's book

Elephant-turtle hybrid,
in **Children's book**
illustration style



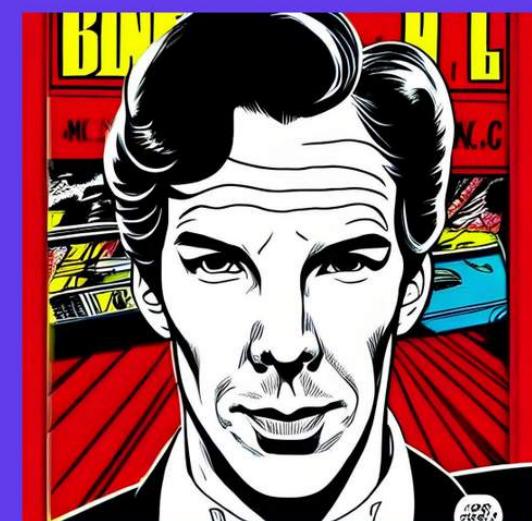
Vector

Vector illustration of
Living Room in Flat
Style, pastel color palette



Scientific Illustration

Anatomy of Pikachu,
dissection **Scientific
illustration** from a
biology book



Comic

Retro **comic style**
artwork, highly detailed
benedit cumberbatch,
comic book cover,
symmetrical, vibrant

Positive emotions



Cosy

Cosy vintage bedroom, octane render by weta digital, exotic colorful pastel, ray traced lighting and reflections



Romantic

Photo of a couple shopping, **romantic** lighting



Joyful

Joyful photo of a husky puppy splashing water at the beach, canon eos r3



Energetic

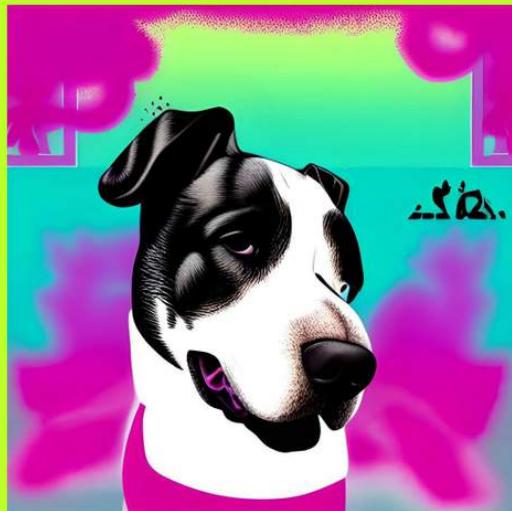
Energetic painting of a pool with flamingos

Vibrant



Weirdcore

Weirdcore image of a
zoo



Acidwave

Dog in the park,
Acidwave aesthetic



Dreamcore

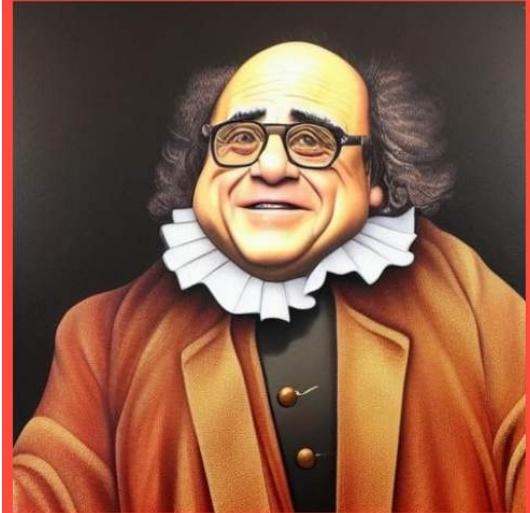
Photo of neighborhood,
Dreamcore style



Vaporwave

Vaporwave pool

Historic



Baroque

Painting of Danny DeVito, in **Baroque** cloth and style



Sovietwave

People walking in the street, **Sovietwave**



Wild West

Photo of a car driving in a town, **Wild West**



Film Noir

Chandler and monica, detailed faces, **Film Noir** style

HDR, UHD, 64K

Quality words like HDR, UHD, 4K, 8k, and 64K can make a dramatic difference.

Seed: 1000

A Landscape



A landscape, HDR, UHD,
64K



Highly detailed

Quality words like highly detailed can make a dramatic difference.

Seed: 2437020575

Joann of Arc portrayed
by Jennifer Lawrence,
concept



Joann of Arc portrayed
by Jennifer Lawrence,
highly detailed, concept



MIDJOURNEY

prompt The prompt to imagine



/imagine [prompt] [image URLs] [text prompt] [parameters]

Image Prompts

Text Prompt

Parameters

Basic Usage

The basic prompt anatomy with Midjourney is `/imagine prompt: [IMAGE PROMPT] [--OPTIONAL PARAMETERS]`.

For example: `/imagine prompt: astronaut on a horse`



Example with parameters: `/imagine prompt: astronaut on a horse --ar 3:2 --c 70 --q 2 --seed 1000`



Max Aspect Ratios

Different Midjourney Version Models have different maximum aspect ratios.

	Version 5	Version 4c (default)	Version 4a or 4b	Version 3	Test / Testp	niji
Ratios	any*	1:2 to 2:1	Only: 1:1, 2:3 or 3:2	5:2 to 2:5	3:2 to 2:3	1:2 to 2:1

The `--ar` parameter will accept any aspect ratio from 1:1 (square) up to the maximum aspect ratio for each model.

However, final outputs may be slightly modified during image generation or upscaling. Example: prompts using `--ar 16:9` (1.78) create images with a `7:4` (1.75) aspect ratio.

* Aspect ratios greater than 2:1 are experimental and may produce unpredictable results.



prompt example: `imagine/ prompt vibrant california poppies --ar 5:4`

Chaos

The `--chaos` or `--c` parameter influences how varied the initial image grids are. High `--chaos` values will produce more unusual and unexpected results and compositions. Lower `--chaos` values have more reliable, repeatable results.

`--chaos` accepts values 0–100.

The default `--chaos` value is 0.

The Influence of Chaos on Jobs

Low `--chaos` values

Using a low `--chaos` value, or not specifying a value, will produce initial image grids that are slightly varied each time a Job is run.

prompt example: `imagine/ prompt watermelon owl hybrid`



High `--chaos` Values

Using a higher `--chaos` value will produce initial image grids that are more varied and unexpected each time a Job is run.

prompt example: `imagine/ prompt watermelon owl hybrid --c 50`



Very High `--chaos` Values

Using extremely high `--chaos` values will produce initial image grids that are varied and have unexpected compositions or artistic mediums each time a Job is run.

prompt example: `imagine/ prompt watermelon owl hybrid --c 100`

Quality Settings

Higher `--quality` settings aren't always better. Sometimes a lower `--quality` settings can produce better results—depending on the image you're trying to create. Lower `--quality` settings might be best for a gestural abstract look. Higher `--quality` values may improve the look of architectural images that benefit from many details. Choose the setting that best matches the kind of image you're hoping to create.

Prompt example: `/imagine prompt woodcut birch forest --q .25`

Version 4

`--quality .25`



`--quality .5`



`--quality 1`



Half Quality

quickest results, least detailed results
4x faster and ¼ the GPU minutes.

Less detailed results
2x faster and ½ the GPU minutes.

Base Quality

The default setting
Well balanced between detail and speed

Seeds

The Midjourney bot uses a seed number to create a field of visual noise, like television static, as a starting point to generate the initial image grids. Seed numbers are generated randomly for each image but can be specified with the **--seed** or **--sameseed** parameter. Using the same seed number and prompt will produce similar ending images.

--seed accepts whole numbers 0–4294967295.

--seed values only influence the initial image grid.

--seed values [Model Versions 1, 2, 3, test](#), and [testp](#) are non-deterministic and will produce similar, not identical, images.

Using the same prompt+seed+parameters in [Model Versions 4, 5](#) and [niji](#) will produce identical images.

Seed Parameter

If no Seed is specified, Midjourney will use a randomly generated seed number, producing a wide variety of options each time a prompt is used.

Jobs run three times with random seeds:

prompt example: /imagine prompt celadon owl pitcher



Jobs run two times with --seed 123:

prompt example: /imagine prompt celadon owl pitcher --seed 123



Stylize

This Midjourney Bot has been trained to produce images that favor artistic color, composition, and forms. The `--stylize` or `--s` parameter influences how strongly this training is applied. Low stylization values produce images that closely match the prompt but are less artistic. High stylization values create images that are very artistic but less connected to the prompt.

`--stylize`'s default value is 100 and accepts integer values 0–1000 when using the default [V4 model].

Different Midjourney Version Models have different stylize ranges.

	Version 5	Version 4	Version 3	Test / Testp	niji
Stylize default	100	100	2500	2500	NA
Stylize Range	0–1000	0–1000	625–60000	1250–5000	NA

Common Stylize Settings

Midjourney Model V4

prompt example: `/imagine prompt illustrated figs --s 100`



✓ Style Low

✓ Style Med

✓ Style High

✓ Style Very High

Midjourney Model V5

prompt example: `/imagine prompt colorful risograph of a fig --s 100`

`--stylize 0`



`--stylize 50`



`--stylize 100` (default)



`--stylize 250`



`--stylize 750`



`--stylize 1000`



Tile

The `--tile` parameter generates images that can be used as repeating tiles to create seamless patterns for fabrics, wallpapers and textures.

`--tile` works with [Model Versions 1, 2, 3 and 5](#).

`--tile` only generates a single tile. Use a pattern making tool like this [Seamless Pattern Checker](#) to see the tile repeat.

Tile Examples

Using Midjourney Model Test/Testp

`prompt colorful tiger stripes --test --tile`



`prompt torn cardboard roses --testp --tile`



Version

Midjourney routinely releases new model versions to improve efficiency, coherency, and quality. The latest model is the default, but other models can be used using the `--version` or `--v` parameter or by using the `/settings` command and selecting a model version. Different models excel at different types of images.

`--version` accepts the values 1, 2, 3, 4, and 5.

`--version` can be abbreviated `--v`.

Newest Model

The Midjourney V5 model is the newest and most advanced model, released on March 15th, 2023. To use this model, add the `--v 5` parameter to the end of a prompt, or use the `/settings` command and select  MJ Version 5

This model has very high Coherency, excels at interpreting natural language prompts, is higher resolution, and supports advanced features like repeating patterns with `--tile`



Version 4 Styles 4a, 4b, and 4c

Midjourney Model Version 4 has three slightly different "flavors" with slight tweaks to the stylistic tuning of the model. Experiment with these versions by adding `--style 4a`, `--style 4b`, or `--style 4c` to the end of a V4 prompt.

`--v 4 --style 4c` is the current default and does not need to be added to the end of a prompt.

Note on Style 4a and 4b

`--style 4a` and `--style 4b` only support 1:1, 2:3, and 3:2 aspect ratios.

`--style 4c` support aspect ratios up to 1:2 or 2:1.

`--style 4a`



vibrant California poppies --style 4a

`--style 4b`



vibrant California poppies --style 4b

`--style 4c`



vibrant California poppies --style 4c

`--style 4a`



school of fish --style 4a

`--style 4b`



school of fish --style 4b

`--style 4c`



school of fish --style 4c

Niji Model

The `niji` model is a collaboration between Midjourney and [Spellbrush](#) tuned to produce anime and illustrative styles. The `--niji` model has vastly more knowledge of anime, anime styles, and anime aesthetics. It's excellent at dynamic and action shots and character-focused compositions in general.

prompt example: `/imagine prompt vibrant California poppies --niji`

`--v 4`



vibrant California poppies

`--niji`



vibrant California poppies --
`niji`

`--v 4`



fancy peacock

`--niji`



fancy peacock --
`niji`

Notes on the `--niji` model

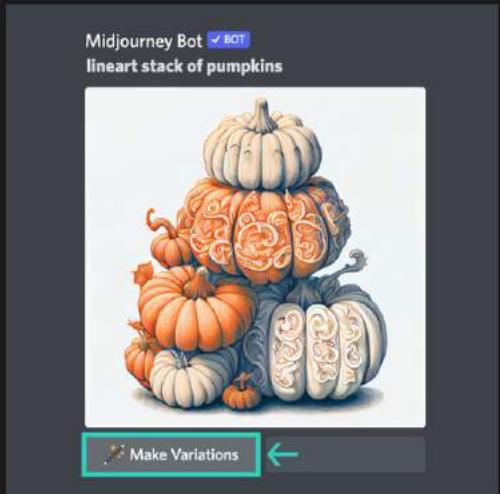
Niji does not support the `--stylize` parameter. Use the [/settings command](#) and select `Style Med` to reset to the default style setting for all `--niji` prompts.

Niji supports multi-prompts or image-prompts.

REMIX MODE

Step 1

line-art stack of pumpkins



Turn on Remix mode.

Select an image grid or upscaled image to Remix.

Step 2

Remix

Midjourney Bot ✅ BOT vibrant lineart stack of pumpkins

Remix Prompt

This form will be submitted to Midjourney Bot.
Do not share passwords.

NEW PROMPT FOR IMAGE #4

pile of cartoon owls

Cancel

Submit

Results

pile of cartoon owls



The Midjourney Bot generates an image using the new prompt with influence from the original image.

Starting Image



line-art stack of pumpkins

Model Change



line-art stack of pumpkins -
-test

Subject Change



balloon-animal shaped
stack of pumpkins"

Medium Change



vibrant illustrated stack of
fruit

cup cake illustration



cup:: cake illustration



cup:: cake:: illustration



Cup cake illustration is considered together producing illustrated images of cup cakes.

Cup is considered separately from *cake illustration* producing images of cakes in cups.

Cup, cake, and illustration are considered separately, producing a cake in a cup with common illustration elements like flowers and butterflies.

Multi Prompts

Prompt Weights

When a double colon `::` is used to separate a prompt into different parts, you can add a number immediately after the double colon to assign the relative importance to that part of the prompt.

In the example below, the prompt `hot:: dog` produced a dog that is hot. Changing the prompt to `hot::2 dog` makes the word `hot` twice as important as the word `dog`, producing an image of a dog that is *very hot!*

[Model Versions] 1, 2, 3 only accept whole numbers as weights

[Model Versions] 4 can accept decimal places for weights

Non-specified weights default to 1.

`hot:: dog`



`hot::2 dog`



Hot and dog are considered as separate thoughts

Hot is twice as important as Dog

Weights are normalized:

`hot:: dog` is the same as `hot::1 dog`, `hot:: dog::1`, `hot::2 dog::2`, `hot::100 dog::100`, etc.

`cup::2 cake` is the same as `cup::4 cake::2`, `cup::100 cake::50` etc.

`cup:: cake:: illustration` is the same as `cup::1 cake::1 illustration::1`, `cup::1 cake:: illustration::2`, `cup::2 cake::2 illustration::2` etc.

Negative Prompt Weights

Negative weights can be added to prompts to remove unwanted elements.

The sum of all weights must be a positive number.

`vibrant tulip fields`



A range of colored tulips are produced.

`vibrant tulip fields:: red::-5`



Tulip fields are less likely to contain the color red.

Weights are normalized so:

`tulips:: red::-5` is the same as `tulips::2 red::-1`, `tulips::200 red::-100`, etc.

The `--no` Parameter

The `--no` parameter is the same as weighing part of a multi prompt to `-5` `vibrant tulip fields:: red::-5` is the same as `vibrant tulip fields --no red`.

Upscalers

Midjourney starts by generating a grid of low-resolution image options for each Job. You can use a Midjourney upscaler on any grid image to increase the size and add additional details. There are multiple upscale models available for upscaling an image.

The **U1** **U2** **U3** **U4** buttons under each image grid are used to upscale the selected image.

Midjourney Dimensions and Sizes

All sizes are for square 1:1 aspect ratios.

Model Version	Starting Grid Size	V4 Default Upscaler	Detail Upscale	Light Upscale	Beta Upscale	Anime Upscale	Max Upscale**
Default Model Version 4	512 x 512	1024 x 1024 *	1024 x 1024	1024 x 1024	2048 x 2048	1024 x 1024	-
Version 5	1024 x 1024	-	-	-	-	-	-
v1-v3	256 x 256	-	1024 x 1024*	1024 x 1024	1024 x 1024	1024 x 1024	1664 x 1664
niji	512 x 512	1024 x 1024	1024 x 1024	1024 x 1024	2048 x 2048	1024 x 1024	-
test / testp	512 x 512	-	-	-	2048 x 2048	1024 x 1024*	-
hd	512 x 512	-	1536 x 1536*	1536 x 1536	2048 x 2048	-	1024 x 1024

Regular (Default) Upscaler

The latest default upscaler increases image size while smoothing or refining details. Some small elements may change between the initial grid image and the finished upscale.

prompt: adorable rubber duck medieval knight



prompt: sand cathedral



Light Upscaler

The Light Upscaler creates a 1024px x 1024px image and adds a moderate amount of details and textures. The Light Upscaler is useful for faces and smooth surfaces when using older [Midjourney Model Versions](#).

Use the `--uplight` parameter to change the behavior of the **U1** **U2** **U3** **U4** upscale buttons to use the Light Upscaler.

prompt: adorable rubber duck medieval knight



prompt: sand cathedral



Detailed Upscaler

The Detail Upscaler, creates a 1024px x 1024px image and adds many additional fine details to the image.

Images that have been upscaled with the detailed upscaler can be upscaled again using the **Upscale to Max** button for a final resolution of 1664px x 1664px. **Upscale to Max** is only available when in **Fast** mode.

The Detailed upscaler is the default for Midjourney Model Versions [V1](#), [V2](#), [V3](#), and [hd](#)

prompt: **adorable rubber duck medieval knight**

prompt: **sand cathedral**



Beta Upscaler

The Beta Upscaler creates a 2048px x 2048px image without adding many additional details. The Beta Upscaler is useful for faces and smooth surfaces.

Use the **--upbeta** parameter to change the behavior of the **U1** **U2** **U3** **U4** upscale buttons to use the Beta Upscaler.

prompt: **adorable rubber duck medieval knight**

prompt: **sand cathedral**



Blend

The `/blend` command allows you to upload 2–5 images quickly and then looks at the concepts and aesthetics of each image and merges them into a novel new image.

`/blend` is the same as using multiple `image prompts` with `/imagine`, but the interface is optimized for easy use on mobile devices.

`/blend` works with up to 5 images. To use more than 5 images in a prompt use `image prompts` with `/imagine`.

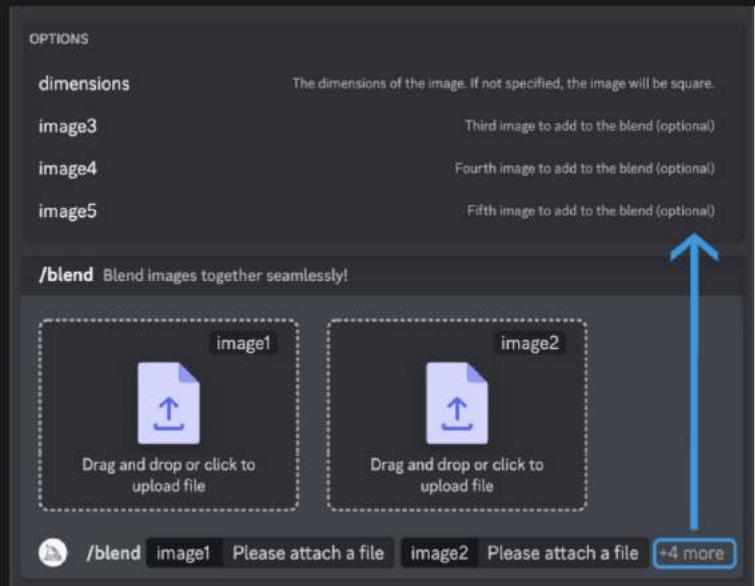
`/blend` does not work with text prompts. To use text and image prompts together, use `image prompts` and text with `/imagine`.

`/blend` Options

After typing the `/blend` command, you will be prompted to upload two photos. Drag and drop images from your hard drive or add images from your photo library when using a mobile device. To add more images, select the `optional/options` field and select `image3`, `image4`, or `image5`. The `/blend` command may take longer to start than other commands because your images must be uploaded before the MidJourney Bot can process your request.

Blended images have a default 1:1 aspect ratio, but you can use the optional `dimensions` field to select between a square aspect ratio (1:1), portrait aspect ratio (2:3), or landscape aspect ratio (3:2).

Custom suffixes are added to the end of `/blend` prompts, like any other `/imagine` prompt. Aspect ratios specified as part of the `/blend` command override aspect ratios within a custom suffix.



Midjourney Model Version 5

Statue + Flowers



Statue + Jellyfish



Statue + Lichen



Statue + Wave



Statue + Lichen + Flowers



Image Prompts

You can use images as part of a prompt to influence a Job's composition, style, and colors. Images prompts can be used alone or with text prompts—experiment with combining images with different styles for the most exciting results.

To add images to a prompt, type or paste the web address where the image is stored online. The address must end in an extension like .png, .gif, or .jpg. After adding image addresses, add any additional text and parameters to complete the prompt.

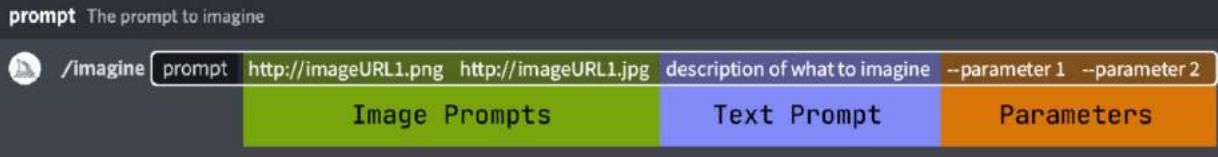


Image prompts go at the front of a prompt.

Prompts must have two images or one image and additional text to work.

An image URL must be a direct link to an online image.

In most browsers, right-click or long-press an image and select Copy Image Address to get the URL.

The [/blend command](#) is a simplified image prompting process optimized for mobile users.

Upload an image to Discord

To use a personal image as part of a prompt, upload it to Discord. To upload an image, click the **Plus** sign next to where messages are typed. Select **Upload a File**, select an image, and send the message. To add this image to a prompt, begin typing `/imagine` as usual. After the prompt box appears, drag the image file into the prompt box to add the image's URL.

Alternatively, right-click the image, select **Copy Link**, and then paste the link within the prompt box.



INCLUDE IN IMAGE

Editorial style side-view medium-full photo shot on Fujifilm Pro 400H of a 40-year-old greek man with short gray hair & full beard pondering a masterpiece in a Musée d'Orsay Gallery. He's wearing a blue jacquard blazer by Ferragamo with a white button-up. The soft gallery lighting and careful composition evoke a sense of

Description is too long

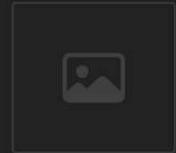
108 / 75

EXCLUDE FROM IMAGE

HD

Generate

STARTING IMAGE



STRENGTH



(i)

NUMBER OF IMAGES

1

STEPS

40

GUIDANCE SCALE

8.0

SEED

random



MODEL

evoartMj4dreammix_v1_ema_vae-split_e...



Mochi Diffusion
No images



Search

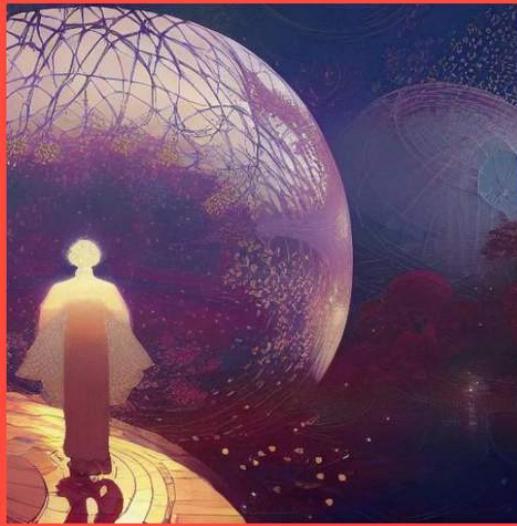
Stable Diffusion

No Info

Resolution – default is 512x512

This parameter is straight forward. You choose the Width and Height of the generated images. But it's important to know that the model was trained on 512x512 images, and in general these dimensions provide the best quality and composition, so it is recommended you stick to them as a beginner.

512x512



576x448



Even with all parameters fixed, changing the resolution will completely change the generated image. Although it may have similar colors and composition

This parameter increases the required VRAM, and the time needed to generate

Text-to-Image

Diffusers

stable-diffusion

arxiv:2112.10752

arxiv:2202.00512

arxiv:1

Model card

Files and versions

Community 12

Stable Diffusion x4 upscaler model card

This model card focuses on the model associated with the Stable Diffusion Upscaler, available [here](#). This model is trained for 1.25M steps on a 10M subset of LAION containing images >2048x2048. The model was trained on crops of size 512x512 and is a text-guided [latent upscaling diffusion model](#). In



Seed – default is “random”

Seed is a number that controls the **initial noise**. The seed is the reason that you get a different image each time you generate when all the parameters are fixed. By default, on most implementations of Stable Diffusion, the seed automatically changes every time you generate an image. You can get the same result back if you keep the prompt, the seed and all other parameters the same.

Prompt: photo of a rabbit driving a bicycle, in Tokyo at night



Seed: 0



Seed: 8



Seed: 18

The power of seeds

Some seed are just better for a prompt, so try to save a good seed and slightly tweak the prompt to get what you're looking for while keeping the same composition. This can also be used to test the effect of different modifiers.



Photo of a cute dog holding an umbrella



Photo of a cute cat holding an umbrella



Painting of a cute cat holding an umbrella

Photo of a cute cat holding an umbrella, at night

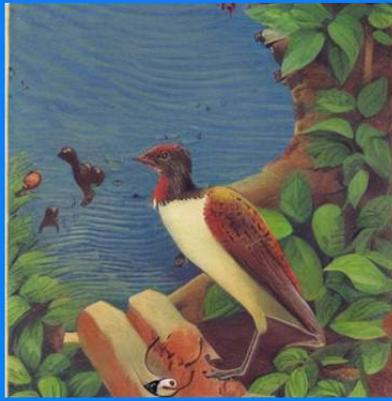
Classifier Free Guidance (CFG) – default is 7

You can see this parameter as a “Creativity vs. Prompt” scale. Lower numbers give the AI more freedom to be creative, while higher numbers force it to stick to the prompt.

Prompt: a red bird drinking water from a lake, children's book painting



CFG: 0 Completely ignores the prompt



CFG: 4 Missing the red color



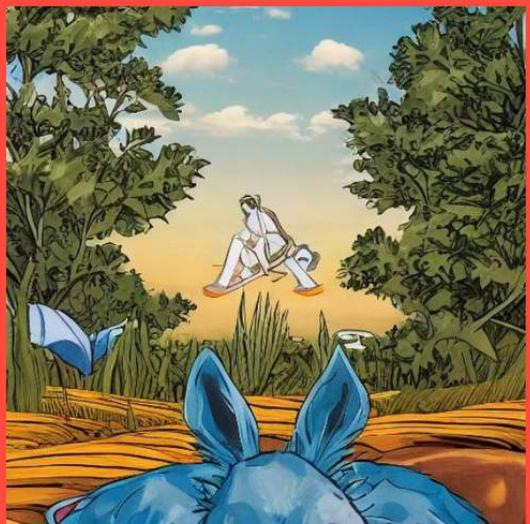
CFG: 7 Good balance



CFG: 15 Too high Starts creating artifacts

This parameter does not affect the VRAM needed, or the generation time.

When to use different CFG values? - Examples



CFG: 2

Complete mess



CFG: 7

We have a rabbit now



CFG: 12

We got all 3 subjects!



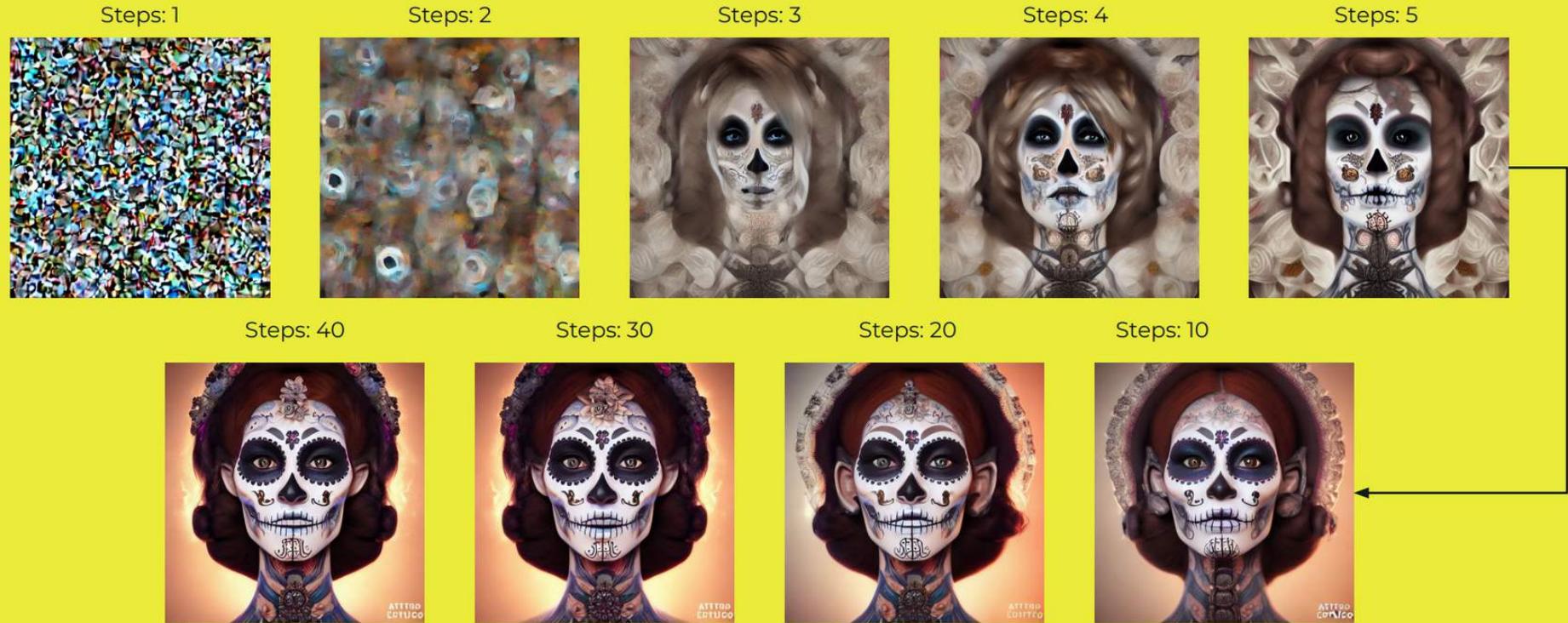
CFG: 19

Composition seems forced

anime illustration of a **blue rabbit**, riding a **scooter** near a **lake**, with the sun in the sky

Step count – default is 50

Stable Diffusion creates an image by starting with a canvas full of noise and denoise it gradually to reach the final output, this parameter controls the number of these denoising steps. Usually, higher is better but to a certain degree, for beginners it's recommended to stick with the default.

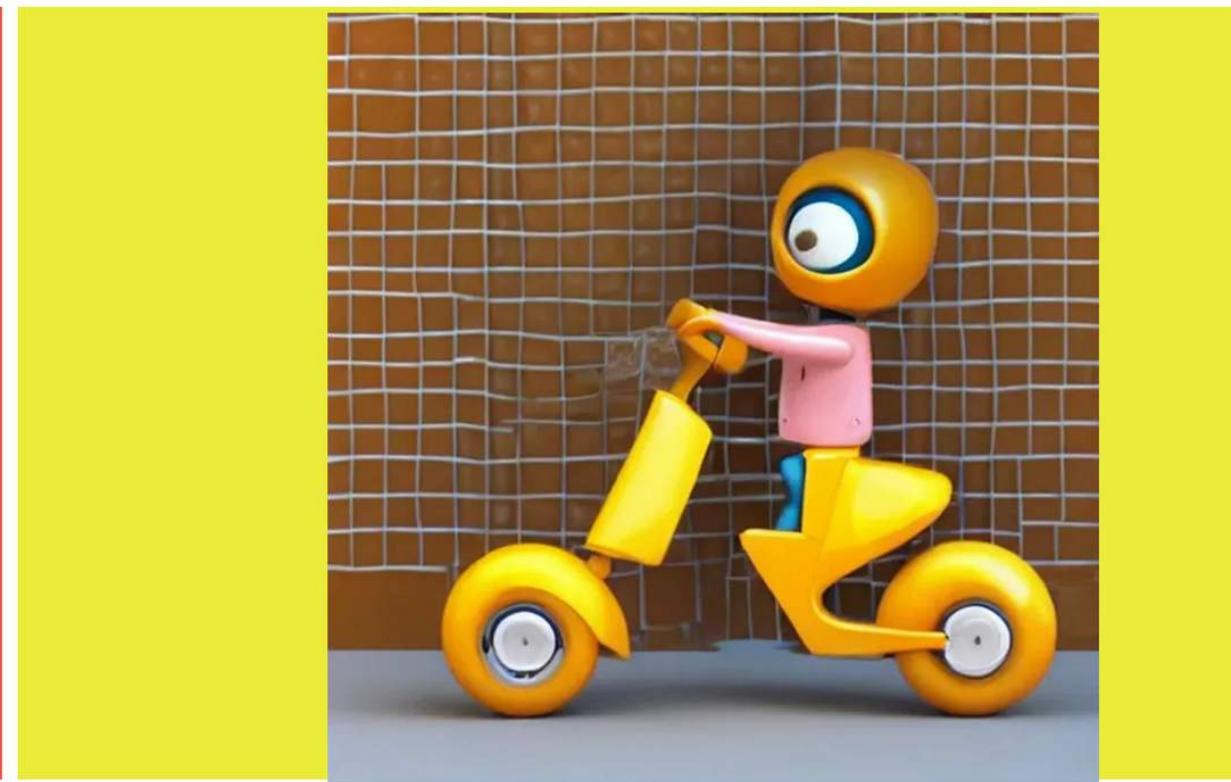


This parameter does not affect the VRAM needed, but increasing it is directly proportional to the time it takes to generate an image

Token efficiency

Your prompt is limited effectively to 75 tokens. If you are working with a long prompt try to be efficient with words that do not significantly add to your meaning. A typical example is when using an artist as a modifier to get a particular style. Here are a few prompts and their token counts. They all will produce a piece that looks like it was created by Vincent Van Gogh with their associated token counts,

- A horse in the style of Vincent Van Gogh (11)
- A horse in the style of Van Gogh (10)
- A horse by Vincent Van Gogh (7)
- A horse by Van Gogh (6)
- Horse by Van Gogh (6)
- Horse Van Gogh (5)



All will accomplish the result but are not exactly the same.

Negative prompt

You can use the negative prompt to tell Stable Diffusion what not to include in the image. This is especially useful when paired with using the same seed for the new generation!



First image

portrait photo of genghis khan

Negative Prompt

You can add a negative prompt when you don't want to see something in your image.

black and white, monochrome

Seed (Enabled)

The seed used to generate your image. Enable to manually set a seed.



Seed

7



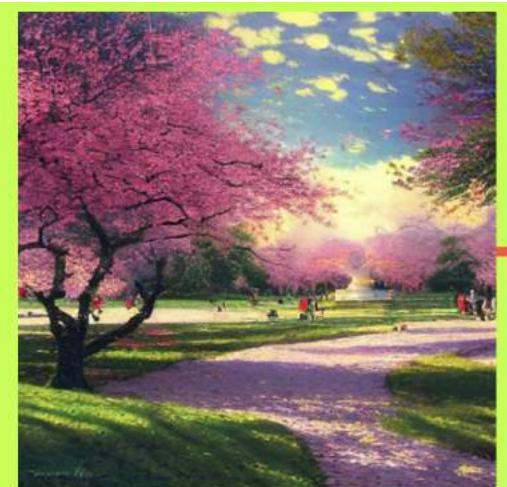
Second image

portrait photo of genghis khan

With img2img you can easily turn any simple sketch to beautiful art using a text description



Digital painting of a magical pirates ship floating on a purple mist cloud, over a desert, vibrant colors, 3D pixar render, delicate details, strong sun rays

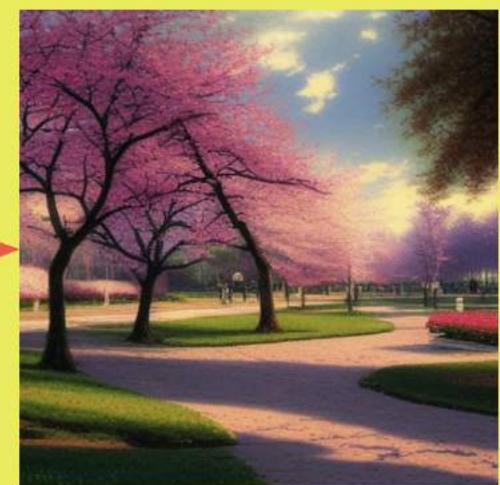


First image

cherry blossom In a empty park, by Thomas Kinkade

If you wish to create a image but something isn't quite right you can use Img2Img to remake the image

With This you can see that it changed the layout and the time of day but kept the idea of the original image



Second image

cherry blossom In a empty park, by Thomas Kinkade



Steps: 30

Starting on 30-40 will keep the main things mostly but edit the details

Original



Prompt

Color pencil drawing of a baby duck



Steps: 72

Starting on 70-90 will keep pretty much everything so use this if you want a small change

Steps: 16

Starting on 10-20 will remake the image but keep the color and shape so use this if you just like the idea of the image

The creation of a new image can sometimes be almost perfect so using img2img can recreate the original image and make it exactly what you want

Inpainting

This technique can be used to fix a part of an image, by completely removing or changing the subject in an image, or just fixing a small detail

Remove



Mask + Prompt: orange couch in living room, cartoon show

Change



Mask + Prompt: cartoon boy eating pizza on a couch

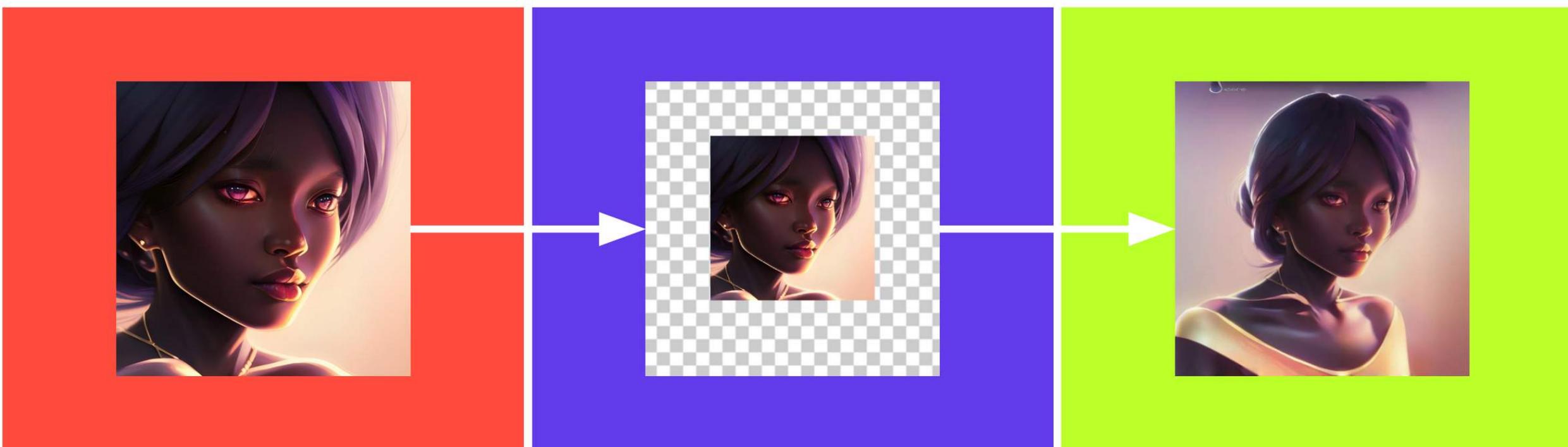
Fix



Mask + Prompt: Photo of sunset

Outpainting/uncropping

You can use this technique to expand real/generated images, can be very useful since Stable Diffusion likes to create a lot of cropped images



CUSTOM MODELS

- CUSTOM STABLE DIFFUSION MODELS ARE FINE-TUNED ON DIFFERENT DATASETS TO ACHIEVE CERTAIN STYLES EASIER AND REPRODUCE THEM BETTER.
- AVAILABLE ON SEVERAL DIFFERENT WEBSITES. REQUIRE MANUAL INSTALLATION AND SELECTION.
- MUST MAKE SURE THE MODEL IS COMPATIBLE WITH SPECIFIC BUILD OF STABLE DIFFUSION AND PROCESSOR TYPE.

Model : Default ▾

Styl

Default

ComplexLA Style

Mdjrny-pprct_step_7000

mdjrny-v4

synthwave_v1

Vectorartz

analog-diffusion-1

dreamlikeDiffusion10_10

Add New Model

Openjourney

Openjourney is a fine-tuned Stable Diffusion model that tries to mimic the style of Midjourney. It is created by [Prompthero](#) and available on Hugging Face for everyone to download and use for free. Openjourney is one of the most popular fine-tuned Stable Diffusion models on Hugging Face with 56K+ downloads last month at the time of writing.



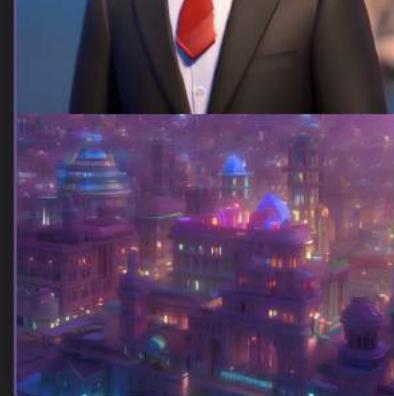
Ghibli Diffusion

Ghibli Diffusion tries to mimic the style of Studio Ghibli. It is created by [@nitrosocke](#) and available on Hugging Face for everyone to download and use for free. Ghibli Diffusion is less popular compared to others in this list with 2.8K+ downloads last month on Hugging Face at the time of writing.



Mo-Di Diffusion

Mo-Di Diffusion tries to mimic the style of Disney's modern animated films. It is created by [@nitrosocke](#) and available on Hugging Face for everyone to download and use for free. Mo-Di Diffusion is another very popular fine-tuned Stable Diffusion model with 26K+ downloads last month on Hugging Face at the time of writing.



QUESTIONS?

- "IF THE HIGHEST AIM OF A CAPTAIN WERE TO PRESERVE HIS SHIP, HE WOULD KEEP IT IN THE PORT FOREVER." - THOMAS AQUINAS



NEXT LESSON

- AI ART - LESSON 4 - APRIL 13, 2023

TOOLS & WORKFLOWS FOR AI ART (PART 2)

- REFERENCES: [BMEADOWS.XYZ/INPEAK](https://bmeadows.xyz/inpeak)

Lesson 1 - An Introduction to AI Art

Summary - In this lesson, we will look at the history of AI art from the 1950s to present. We will discuss different genres and types of AI art. We will touch on famous art and artists, as well as discuss some of the controversies surrounding AI art today.

References

- History of AI Art
 - [Timeline of AI Art | AIArtists.org](#)
 - [How Did A.I. Art Evolve? | Artnet](#)
 - [The Past, Present, and Future of AI Art | The Gradient](#)
 - [Where the AI Art Boom Came From | Wired](#)
- Twitter Posts
 - [Creation Process | @TheBenMeadows](#)
 - [AI Art Tutorials | @ClaireSilver12](#)
 - [Historic AI Art | @ClownVamp](#)
 - [Second Wave AI Art | @ClownVamp](#)
 - [The AI Artists List | @tender_art](#)
 - [Notable AI Artists | @0xWatkins](#)
 - [AI Behind The Scenes | @ClownVamp](#)
- Controversy
 - [AI Art Panic | Opinionated Guides](#)
 - [The AI Art At Christie's Is Not What You Think | Artnome](#)
 - [AI Is Blurring the Definition of Artist | American Scientist](#)
 - [AI won't make artists redundant – thanks to information theory](#)
 - [Is A.I. Art Stealing from Artists? | The New Yorker](#)
 - [AI or No, It's Always Too Soon to Sound the Death Knell of Art | Wired](#)
 - [AI-art isn't art | The Intrinsic Perspective](#)
 - [Have AI image generators assimilated your art? | Ars Technica](#)
 - [The scary truth about AI copyright is nobody knows what will happen next | The Verge](#)