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THE
PROMPTBOOK

Using AI to generate perfect images

USING CHATGPT AS A VIRTUAL COLLABOLATOR

ÜNİVERSİTESİ
ÖĞRENMEYE SINIRSIZ ÖZGÜRLÜK

1. INTRODUCTION

1.1.Authors

Welcome to the fascinating world of image generation by artificial intelligence! We would like to invite you on a journey through the extraordinary possibilities offered by this innovative field of art. Our book, entitled **"The Promptbook"** is the result of the collaboration of three talented students from three different countries.

Diana Turčeková
Slovakia

Lukáš Pelant,
Czech Republic

Kacper Borysewicz,
Poland

Together, as a team of authors, we want to present readers with practical aspects of image generation using artificial intelligence. Enjoy a wonderful journey through the fascinating world of image generation by artificial intelligence!

Diana, Lukáš and Kacper

1.2. Available tools

There already exists a vast amount of different AI tools for generating images. We tested the most popular ones to figure out which one is the best for different purposes.

When we began collecting data for this book during February 2023, we found out that it is better to use different tools for different tasks. For example DALLE-E excelled at paintings and animal illustrations, Midjourney at photorealistic rendering, Nightcafé was the best for artistic stylization and Jasper art for using different medium styles.

But very quickly Midjourney started to dominate the market and with its frequent actualizations and connection to Discord, it became massively superior. We, all authors, agree that its elaborate command system and the ability to understand what you want from it is unmatched.

For this reason, we briefly present to you some of the AIs we tried, but most of the book is based on experiments with Midjourney, as after you understand the prompting fundamentals, whatever you want to do - commercial images, illustrations, logos, photo editing or designing your game - Midjourney is most likely going to be your choice number one.

What can you try?

Midjourney is the way to go. Up to this day, it is clearly the most powerful and precise image generator. It is accessible via Discord application and although it is subscription based, it is very affordable.

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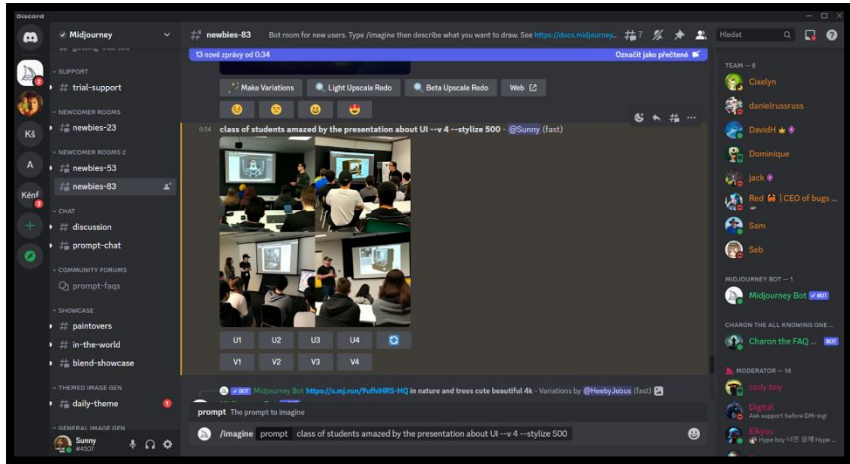
DALL-E 2 is from our perspective right behind Midjourney and you can create a lot of realistic pictures or well stylized illustrations and paintings. If you use, now very popular, Bing AI, it has its own image generator, but it actually runs on DALL-E as well. It is important to mention that it comes directly from OpenAI, so it is very easy to connect it with ChatGPT.

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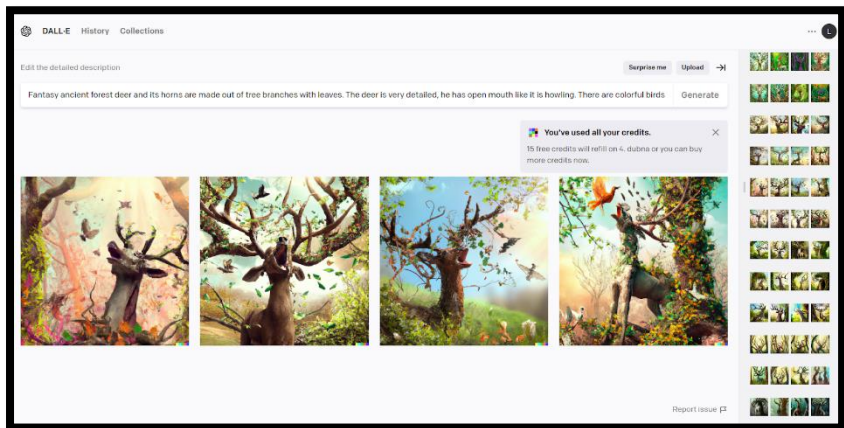
Dream by Wombo is probably the best image generator that you can easily use with your phone, but it still likes to add more limbs now and then.
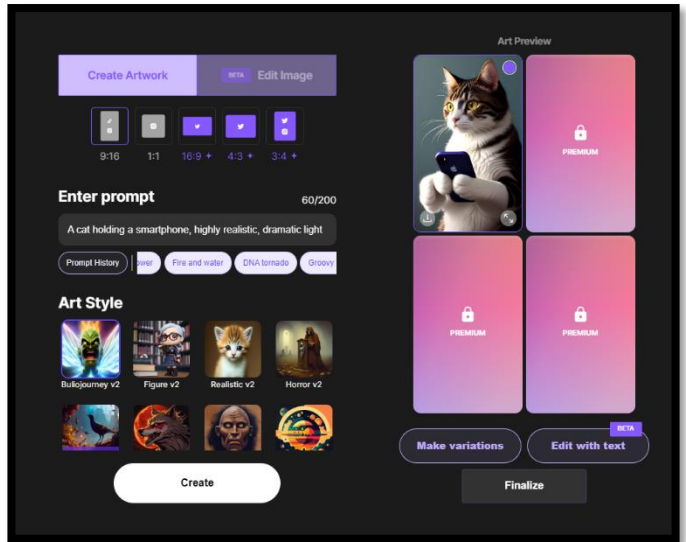

CrAIyon is a good experimenting alternative. It is not as precise as the other ones and it takes longer time periods to generate images, but for now, it is completely free.

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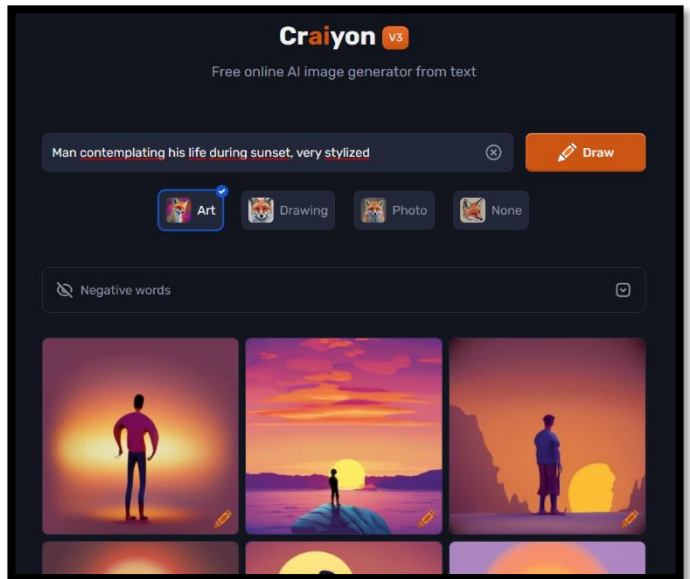
Stable Diffusion is almost comparable to Midjourney and it is used by many different providers. It was developed by Stability.AI and it is widely used. Later, we are going to teach you how to get unlimited access to this one, so you can practice your prompting. Different providers use different settings, so the results are still going to differ. You can try **Dream Studio**, which is the official web provided by Stability.AI. You can try different versions of Stable Diffusion here.

https://beta.dreamstudio.ai/generate
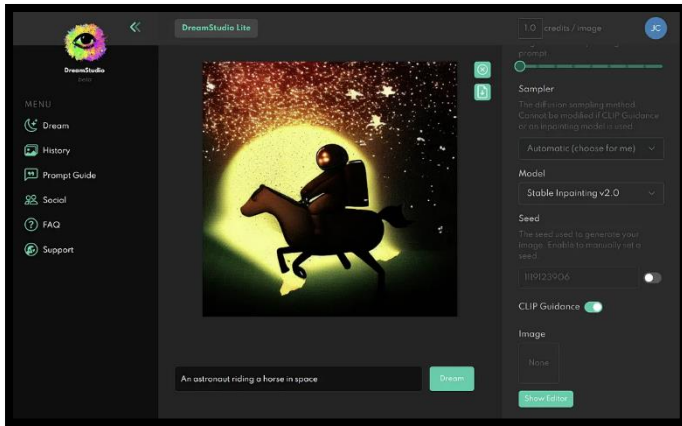
Replicate is used for sharing and prompts and generated images by Stable Diffusion V.2.

https://replicate.com/about

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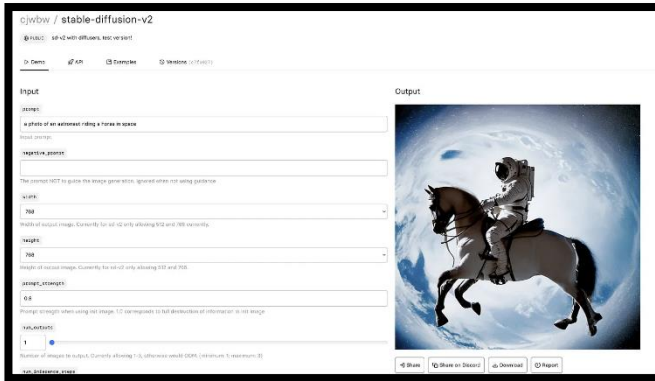
PlaygroundAI has a lot of tools to adjust the generation process.

https://playgroundai.com
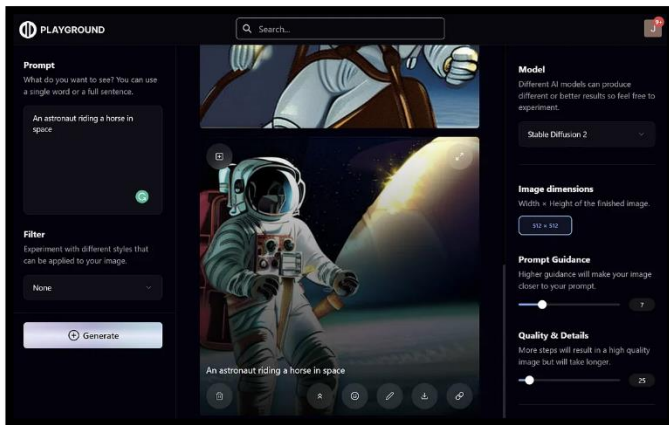
As Stable Diffusion is open-source, you can now access it via **Google Colab** thanks to some very enthusiastic users.

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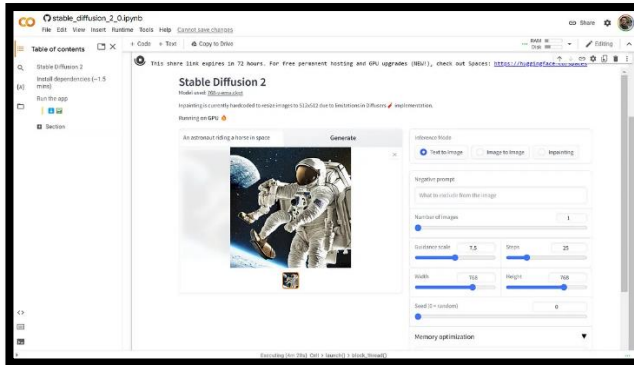
https://colab.research.google.com/github/qunash/stable-diffusion-2-gui/blob/main/stable_diffusion_2_0.ipynb

BaseTen is a platform for startups and they recently released API support for Stable Diffusion. There are no settings, but it free for now.
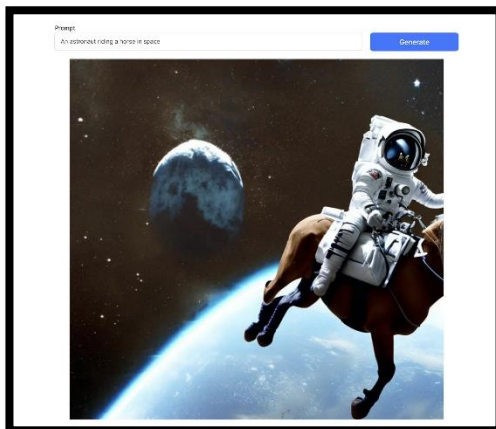
https://app.baseten.co/apps/VBlnMVP/operator_views/nBrd8zP

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And to still look at something other than Stable Diffusion, **Creative Fabrica** uses a well done engine for imitation of different art styles. It is free to use for small resolutions, but there is a small amount of prompts it can understand at the same time.

https://www.creativefabrica.com/spark/
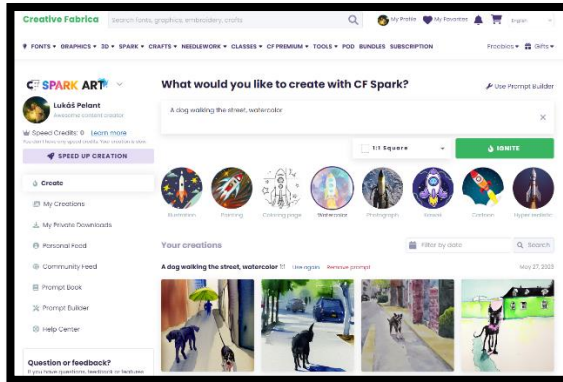
Fusion brain is another interesting free project. It uses a very small amount of seeds, but the results are still beautiful. Only the variety is limited and it seems like it is trained on smaller amounts of data. It is awesome for logos.

https://fusionbrain.ai/diffusion

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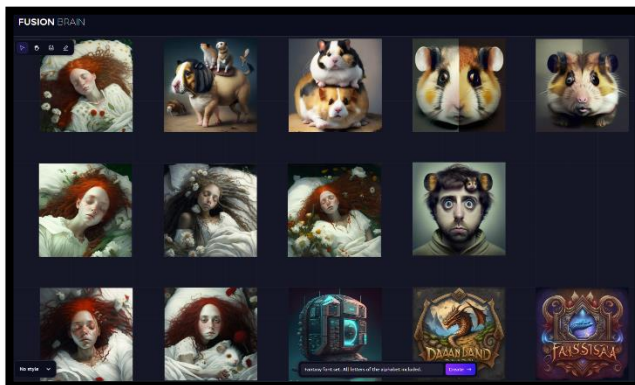
1.3. Introduction to prompting

To begin with, let's see an example of **the evolution of a prompt from basic to very elaborate** and how important it is to word prompts correctly. Let's try to make some pictures for a Nike online shop using Dream studio & Stable Diffusion

„A nike shoe"

"A nike shoe, dramatic light"

"A nike shoe, studio light"

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"One shoe of Jordan 1 nike in Yayoi Kusama style, side view in the center, highly detailed"

„Nike pace shoes made of rubber and composite fibres, black Nike logo in the shoe, photography by Steven Meisel, beautiful lighting, unreal engine, octane render, hd, iq 180 --ar 2:3 --style 4a"

"Nike Air Flight Huarache Shoe pride month, bright, colorful, glossy, 3D, Arnold render, Vray render, artstation, 4k, very detailed, post processing"

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„Well lit Nike pace shoes made of rubber and composite fibres, black Nike logo in the shoe, photography by Steven Meisel, beautiful lighting, indirect ighting, unreal engine, octane render, hd, iq 180 --ar 2:3 --q 2"

„A stunning interpretation of nike shoe sneaker made of petals, advertsiement, solarpunk, highly detailed and intricate, golden ratio, very colorful, hypermaximalist, ornate, luxury, elite, good vibes, oil painting, cinematic, cgsociety, James jean, Brian froud, ross tran --ar 9:21 –uplight"

"Nike shoes made out of branches, leaves, flowers, moss, daisies, roses, wood, in a forest, cinematic, photo realistic, volumetric light. --ar 9:16"

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1.4. Fantasy Illustrations

Now, let's get crazy. Let's create a few attempts for a trading card fantasy game illustrations using DALLE - 2

"Fantasy ancient forest creature, digital art."

"Fantasy ancient forest creature. It is misty weather and the creature reminds deer, but its horns are made out of tree branches, digital art."

"Fantasy ancient forest deer and its horns are made out of tree branches with leaves. The deer is very detailed, he has open mouth like it is howling. There are colorful birds flying around him. It is beautiful sunny weather, digital art."

"Fantasy ancient forest deer and its horns are made out of tree branches with leaves. The deer is very detailed, he has open mouth like it is howling. There are colorful birds flying around him. It is beautiful sunny weather, digital art."

"Illustration of green dragon made out of flora. The dragon is in the jungle and it is sunny weather. Little rabits are on the ground a birds are flying around. It is a design for trading card game."

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"Realistic fantasy illustration in the style of "Magic the gathering" of green dragon made out of trees, plants and flowers. The dragon is in the jungle and it is sunny weather. Little rabits are on the ground a birds are flying around. It is a design for trading card game."

"Fantasy dragon made out of leaves, plants. flowers and trees. Playing card illustration style."

"Phoenix in the night sky flying through the mountains, fire is spreading out of him, fantasy digital art. The phoenix is very realistic and detailed."

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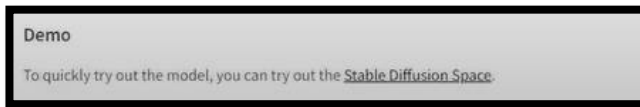
2. RUN YOUR OWN AI

2.1. What is it about?

Now, when you have seen a few examples, it is time for you to give it a try. In this chapter, we show you a simple way to run your own AI software on your computer. All good AI tools offer you a short trial, but sooner or later you will have to pay. From our experience, those trials are really not enough to understand the way prompting works, so it comes in handy to have one for free. We will focus on a program called Stable Diffusion, which is an advanced tool for generating images based on textual descriptions by using your own graphical card (best suitable for NVidia cards) There are, of course, many other AI- based image generators, such as the earlier-mentioned DALL-E 2 and Midjourney, but Stable Diffusion is the only free solution we know about that does not impose any functional limitations. Thanks to it, even if you are a person completely unfamiliar with programming or artificial intelligence, you will be able to create surprisingly realistic images, all you need is a simple text description.

STABLE DIFFUSION

OPEN SOURCE IMAGE GENERATOR

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2.2. Demo

An interactive demo is available on the official website of Stable Diffusion, which allows you to try out the features of the program without having to install it on your own computer. The demo is a great way to familiarize yourself with the possibilities of the program and see how generating images based on text descriptions works in practice.

To use the demo, simply visit the Stable Diffusion website and find the "Demo" section. At the moment it is located between the Model Access and License sections.

After clicking on the appropriate option, you will be redirected to the page with the demo interface.

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Enter a description in the appropriate text field and click the "Generate image" button. The program will process the text and generate the corresponding image. You can experiment with different descriptions and watch as the program translates the text into visual representations. On this page you have some limitations as to what you can do. There are some advanced options, but you can only generate small images.

2.3. Download and installation

If you liked the demo version and want to get the most out of it, it's time to download and install Stable Diffusion on your computer. The program is compatible with Windows (10 and up), Linux, and within a few months with MacOS. You will be able to use the full power of the program if you have an Nvidia graphics card with at least 6 gigabytes of VRAM. However, if your graphics card does not meet these requirements, the program will automatically switch to CPU mode, although this may slow down the image generation

Download the stable version of Stable Diffusion from the official website. After downloading, unzip the file and move the folder to the C drive of your computer. Note that this process may take some time as the program folder weighs approximately 18 gigabytes.

Installation

1. **Download** for Windows or for Linux.

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After all is complete, open the Stable Diffusion program folder on the C drive and find the file named "Stable Diffusion UI". Double-click this file to run it. If you get a security prompt, feel free to click "Run anyway" because Stable Diffusion is safe and trustworthy. Don't be scared, a black window with white lettering, called CMD, is a sign that everything is going according to plan. If something interrupts the installation of the program at this point, please repeat the double-click action on the file in the folder. The installation should then continue from the stop point.
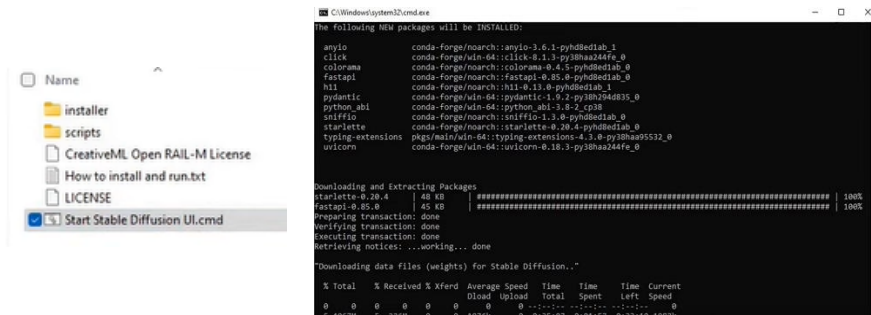
After launching the program, your web browser will automatically open to the local Stable Diffusion server page, available at *"localhost:9000"*. On this page you will be able to use the functions of the program to generate images based on text descriptions.
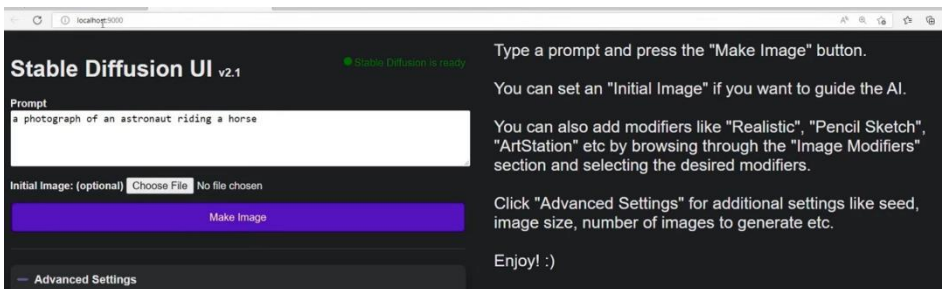
**<u>Remember, do not close the CMD window
while using the program!</u>**

2.4. Image generation

On the Stable Diffusion page, you'll find a text box where you can enter image descriptions. Enter your description, for example "*cat drinking a beer in a bar*". Then below, you can adjust additional settings such as graphic style or image size. After entering a description and adjusting the settings, click the "Generate Image" button. The program will start the image generation process based on your description. You can watch the generation progress on the program page.

Depending on the complexity of the image and the power of your computer, the generation time may vary. After the generation is complete, you will see the generated image on the screen. You can save it on your computer and admire the result of your creativity. In our case, we got such a result. Doesn't it look wonderful?

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3. ANATOMY OF A GOOD PROMPT

You've already discovered the power of AI image generation, and you probably already have one on your own device! So now is the time to learn the anatomy of a good prompt in detail. In this chapter you will learn what ingredients it has, and in the next chapters you will find out why each of them is so important. After all of that, you are going to become a prompt master!

Prompt anatomy ingredients with some instances:

1. **Subject**
2. **Resolution** – unreal engine, sharp focus, 8k, Vray
3. **Lighting** – studio light, dramatic light, open space, spotlight
4. **Style** – hyperrealistic, pop-art, modernist, art nouveau
5. **Medium** – digital art, acryl, drawing, photo, portrait
6. **Artist** – Alphonse Mucha, Frida Kahlo, John Collier
7. **Website** – pixiv (anime), pixabay (commercial stock)
8. **Color** – silver, vintage, pastel, color-splatter
9. **Additional details** – dramatic, low angle shot, godrays

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4. SUBJECT

4.1. Subject definition

Now it's time to delve into the individual components of a good prompt. The first thing we prompt is the subject itself. The most important thing is balancing the amount of information we give to the AI generator, as being too vague gives us too random results, but being too specific results into incomprehensible hodgepodge, as the AI does not know which keywords are the important ones.

The correct amount of keywords and the optimal length of sentences when providing a prompt for an image-generating AI can vary depending on the specific AI model and its capabilities. However, we can say that a good prompt should contain enough information to convey the desired image but not be overly complicated or confusing. Longer sentences can provide more detail, but they can also be more complex and harder for the AI to understand. In contrast, shorter sentences are often easier to understand, but they may not provide enough detail for the AI to generate an accurate image. Here are some examples of bad and good prompts for generating an image of a warrior:

Bad Prompt: *"Warrior, fight, weapon, enemy, castle, victory."*

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This prompt is too vague and does not provide enough specific information for the AI to generate a meaningful image.

Better Prompt*: "Generate an image of a female warrior holding a sword and shield, standing in front of a medieval castle with a big dragon in the background."*

This prompt provides more specific information, including the gender of the warrior and her gear. The AI also knows what should be in the background. However, you can see that the generator has no information about how should be anything positioned.

Good Prompt: *"Create an image of a samurai warrior in traditional armor holding a katana sword, with cherry blossom trees in the background and a setting sun."*


This prompt is concise and provides specific details about the warrior's appearance, weapon, and surroundings. The inclusion of the cherry blossom trees and setting sun uses the association effect which will be discussed later.

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Bad prompt: "*Create an image of a samurai warrior in traditional armor holding a katana sword, who is looking prepared for a fight. The katana sword is long and the warrior is swinging it. He looks dangerous. There are cherry blossom trees in the background and a setting sun. Birds are flying around the warrior.*"

This prompt is overly complicated and the AI does not know what to prioritize. We ask for a samurai who is looking like he is prepared for a fight, but we also want him to be swinging his katana. Those are 2 instructions about the change of posture and they may contradict each other. The order of words is important and „Birds are flying around the warrior." had been mentioned after the instructions about the background and the generator did not know where to put them, so the request was denied.

Better prompt: "*Create an image of a samurai warrior in traditional armor holding a long katana sword, who is prepared for a fight. There are 4 small birds flying around the warrior. There are cherry blossom trees in the background and a setting sun.*"

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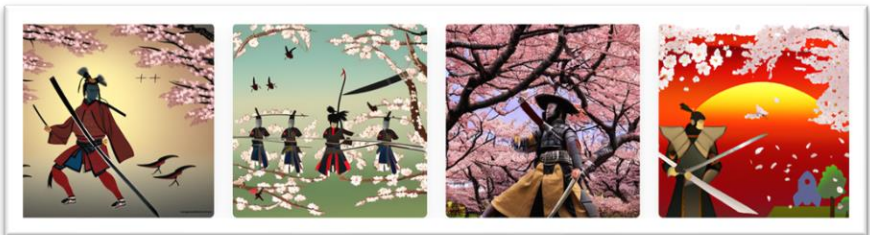
For comparison, first series of images was generated by creative fabrica, second with DALL-E. You can see that shortening the prompt and positioning the request for birds close to the request of samurai made them appear. You can also see that the interpretation of the prompt is sometimes more random. That is caused by the „randomness" parameter of settings. Some of the engines (like creative fabrica) do not let you change this, other ones (like midjourney or stable diffusion) will offer you multiple settings (stylize; chaos; seed; randomness; …). The randomness for the second image generate by creative fabrica was high, so the engine decided to also 4 samurai, not just 4 birds.

You can see that the generator decided to use a lot of style known as ukiyo-e. That is due to the association effect. Most of „samurai paintings" that were in the dataset used to train this AI probably were in this style, so it naturally becomes AI's first choice. For this reason, it is necessary to add styles and mediums to your prompt and you are going to read about all of that in next chapters.

Simpler and free programs tend to generate output based on the first keyword. Better ones usually give similar values to all of the keywords and try to anticipate what would you find more important. You can adjust the importance by commands. That is called text weight or key strength. For explanation of text weight, we are going to use Midjourney. Midjourney uses a lot of stylization automatically, so even very simple prompts can give us amazing results.
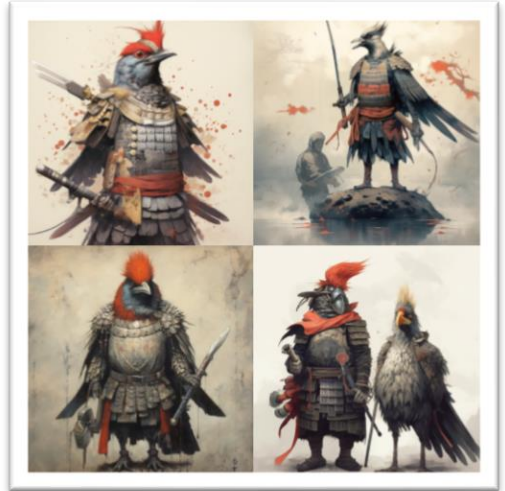
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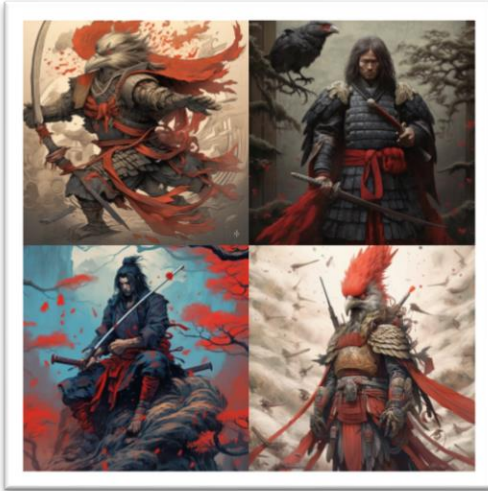The following image was generated only with:

"/imagine samurai and bird"

Now we can adjust the command so both keywords, samurai and bird have exactly the same value. In Midjourney, we write:

*"/imagine samurai::1
and bird::1"*

You can see that as both keywords have the same value, AI is going to mesh these concepts together.

Now we emphasize that we want a samurai and the bird is secondary, so we double the text weight of keyword samurai:
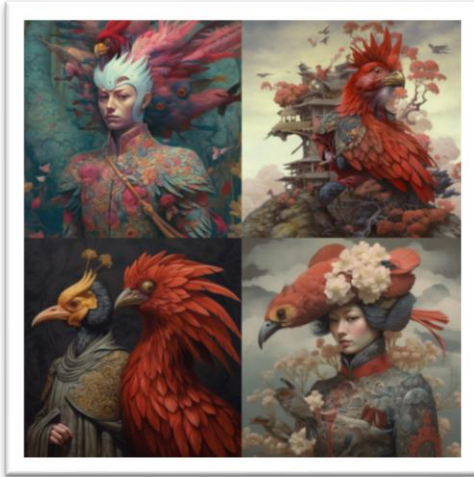*"/imagine samurai::2 and bird::1"*

It makes sense that Midjourney is not sure about if we mean a picture with a samurai somewhere and a bird somewhere else or a picture where is a someone who is a samurai and a bird at the same time as we did not give it enough information.

If we now emphasize the samurai even more, the keyword bird becomes almost ignored:
"/imagine samurai::3 and bird::1"

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We can easily reverse the process and give more strength to the keyword „bird"

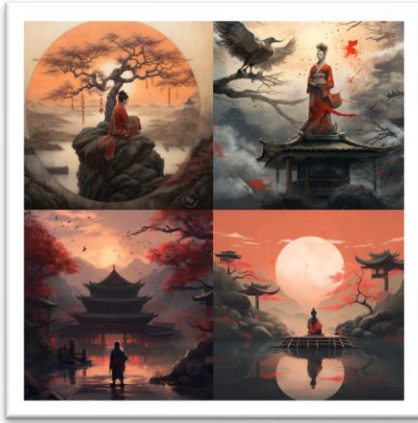*"/imagine samurai::1 and bird::2"*

You can clearly see how much more important it became.

Again, if we make keyword *„bird"* even stronger, the keyword *„samurai"* is going to be ignored.

"/imagine samurai::1 and bird::3"

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We can change the value of any number of keywords in our prompt:

"*/imagine Samurai::3 sitting on a rock, bird::2 flying over his head. Cherry blossom trees::2 in the background and a setting sun::3. Japanese wooden structures::1 are in the distance*".

Any change of these values seems quite impactful:

"/imagine Samurai::2 sitting on a rock, bird::3 flying over his head. Cherry blossom trees::3 in the background and a setting sun::1. Japanese wooden structures::2 are in the distance".
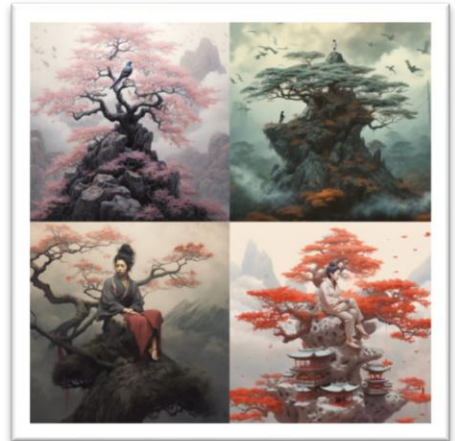
Useful tools:
- Futurepedia
- Promptmania.com

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4.2. Negative prompts

Negative prompts serve as a powerful tool in the Stable Diffusion model, enabling users to specify undesired elements within generated images without the need for additional input. By utilizing negative prompts, users can guide the generation process and exert greater control over the output image's content. Negative prompts function as high-dimensional anchors within the generation process, guiding it away from specific undesired features. By introducing negative prompts, users can fine-tune the output image with enhanced precision and detail. This approach allows for the creation of unique images tailored to the user's preferences.

To illustrate the application of negative prompts in Stable Diffusion, consider the scenario where a user generates a portrait but encounters duplicate images, despite specifying parameters such as "Don't add duplicates." This occurrence arises from the model's ability to comprehend negative prompts more effectively than human language. Rather than repeatedly regenerating the same prompt, users can introduce a negative prompt such as "duplicate." By doing so, they effectively instruct the Stable Diffusion model to exclude duplicate elements from the generated image. This approach enables users to refine the output and obtain more desirable results.

To further comprehend the utilization of negative prompts in Stable Diffusion, let us explore a range of examples. These prompts can be employed to remove specific objects or enhance the overall quality of generated images. When incorporating negative prompts,

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it is crucial to utilize words such as "exclude" or "there is no" to indicate the undesired features clearly. Here are some examples:

- Exclude **duplicates**
- There is no **overexposure**
- Exclude **bad art**
- Without **distorted face**
- Exclude **drafts**

By incorporating these negative prompts into the Stable Diffusion process, users can effectively manipulate the generation process, resulting in images that align more closely with their preferences.

Here we have given above example. On the left, we have an image generated from the *"portrait of a woman with brown hair"* prompt. And the second time the image was made with the negative prompt *"There is no duplicates".* You can see the result for yourself.

4.3. Keyword strength

Keywords play a pivotal role in picture generation techniques, offering a powerful means to adjust the strength and bias of specific elements within the generated images. This section explores how keywords can be easily manipulated using parentheses () and brackets [] to control their impact. By understanding the concept of keyword strength and employing blending techniques, users can create unique and visually appealing images.

Parentheses (): Increases keyword strength by a factor of **1.1**.
Brackets []: Decreases keyword strength by a factor of **0.9**.

The weight assigned to a keyword determines its influence on the generated image. The more weight applied, the greater the bias towards that keyword. It is important to note that the effect of multiple parentheses or brackets is multiplicative, with each additional symbol indicating a 1.1 or 0.9 times increase or decrease, respectively. For example:

(*keyword*): 1.1   [*keyword*]: 0.9

((*keyword*)): 1.21   [[*keyword*]]: 0.81

(((*keyword*))): 1.33   [[[*keyword*]]]: 0.73

"Photo of eggs with bacon, on a frying pan"

(((bacon)))   **((bacon))**   **(bacon)**

Blending keywords is a valuable technique
for creating new and distinct looks within generated images.

This method is particularly useful when combining two recognizable faces, as using the names of actors and actresses can easily generate visually appealing results. However, one drawback of this approach is that the resulting faces may be too recognizable, lacking novelty.

To overcome this limitation, keyword swapping enables the blending of two readily recognizable faces to form a new composite face. The syntax for blending faces at different degrees is as follows:

[keyword1 : keyword2: amount]

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By specifying the names of the two individuals and adjusting the "amount" parameter, users can blend the features of the two faces to varying degrees. This technique allows for the creation of novel and unique faces while retaining some familiarity.


[joe biden: donald trump :0.1]   [joe biden: donald trump :0.5]   [joe biden: donald trump :0.75]

The use of double colon „::" is not only to add keyword strength, but it allows you to separate different thoughts.

You will find out that language plays tricks on us and you will sometimes need to explain your idea precisely to the AI.

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Here is an example:

"/imagine fire fighter"
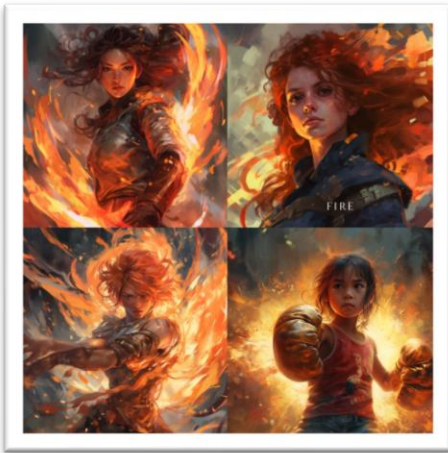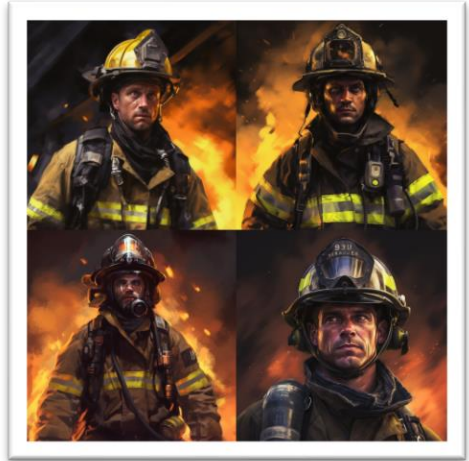
"/imagine fire:: fighter::"

Now go on, try asking it for *„hot dog".*

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5. RESOLUTION

When you just experiment, you might want lower resolution as the render time is shorter and it costs you less credits. But if you already found your perfect prompt, you need to think about the exact resolution you want. Is the picture going on a website? Is it going to be printed, imported to another app, or adjusted in photoshop? Based on that, you might want to try different resolution settings.

From now on we use just Midjourney as our superior.

Here is the basic prompt we are going to work with:

"/imagine An owl sitting on a branch"

Now, Midjourney version 5 is out and all the images are stunning, but it also takes a bit more of the processing power and if you are experimenting, you might to want use older versions to save yourself some credits. Let's see what kind of results would we get from other Midjourney versions. You can change the version by

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adding command **--v** (and the number or name of version). Currently available are all versions from 5 to 1 and also 2 experimental versions **- a** general purpose artistic mode you can use by typing --test and photo-realism mode you can use by typing **–testp**. There is also a *„niji mode"* which is a collaboration between Midjourney and Spell brush, it was trained on anime and manga and is specifically designed to create this kind of Japanese art style.

An example of the same prompt, but generated in **version 4**.

"/imagine An owl sitting on a branch, --v 4"
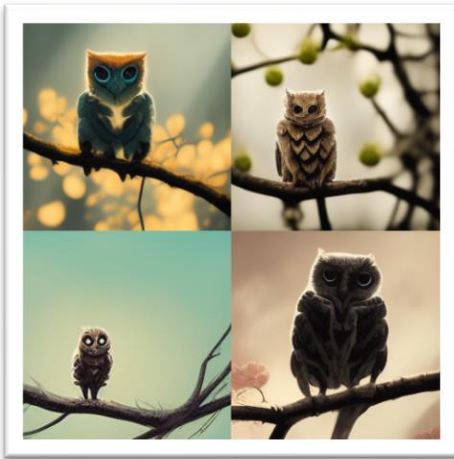
And **version 3**.
"/imagine An owl sitting on a branch, --v 3"

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Version 2
"/imagine An owl sitting on a branch, --v 2"

And finally, **version 1**
"/imagine An owl sitting on a branch, --v 2"

You can clearly see why versions 1 and 2 are not really used anymore.

An **artistic** version.

"/imagine An owl sitting on a branch, --test"

A **photorealistic** version.

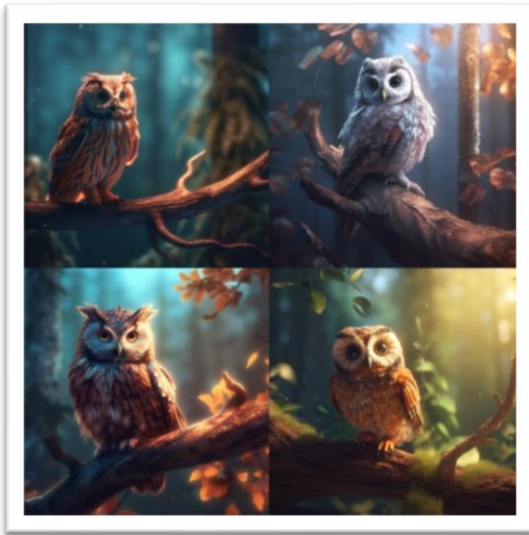*"/imagine An owl sitting on a branch, --testp "*

And an **anime/japanese art** version

"/imagine An owl sitting on a branch, --niji"

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People often try to use prompts as 4K or even 8K to achieve extremely high resolution. Even when we write 4K, Midjourney is not allowed to generate such a resolution, as it would take too much processing power. Midjourney is currently able to generate images up to 2048×2048 (square) and 2720×1530 (widescreen) using the beta upscale redo feature. The latest version of Midjourney (V5) produces 1024×1024 resolution images by default.

"/imagine An owl sitting on a branch, 4K."

Midjourney is not able to use 4K resolution,
it understands command 4K as „highly detailed".

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This is the upscaled version of variant 3 from the previous generation.

An owl sitting on a branch, --ar 4:3.
In Midjourney **version 5**, aspect ratio settings completely replaced **–w** (width) and **–h** (height) settings that are not possible to be used anymore.

Here is an example of some of the resolutions you might want to try. Now, when version 5 is out, you can experiment with any resolution you want, but beware the fact that any aspect ratios greater then 2:1 are experimental and may produce unpredictable results. You can also see the available AR for different Midjourney versions.

x	Version 5 (default)	Version 4c	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

Regarding the technical quality of an image, we might look at it from 2 different perspectives: the resolution and the overall amount of details. Some of the prompts you can use for higher amount of details are „photorealistic", „ultra photoreal", „ultra detailed", „intricate details", 4K/8K etc..

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"/imagine An owl sitting on a branch, intricate details"

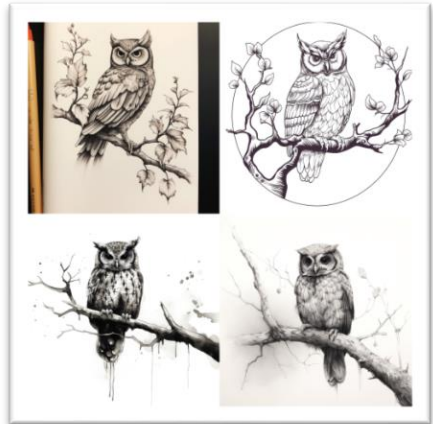*"/imagine An owl sitting on a branch, photorealistic"*

For lower details, you might have expected the opposite, as „low detail", „minimalistic", „ultra minimalistic", „one line" and so on, but as you can see, Midjourney is not really build for not being detailed. But, there is another way.

"/imagine An owl sitting on a branch, low detail"

"/imagine An owl sitting on a branch, minimalistic"

"/imagine An owl sitting on a branch, one line"

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If you want to play with the quality, you can work with the command **„--q" or „--quality"**. This command should affect the overall quality of an image. The range is from 0,25 to 2, where 1 is the standard quality. Lower quality images are faster done and cost less tokens/GPU minutes.

Model Version	Quality .25	Quality .5	Quality 1	Quality 2
Version 5	✓	✓	✓	-
Version 4	✓	✓	✓	-
Version 3	✓	✓	✓	✓
Version 2	✓	✓	✓	✓
Version 1	✓	✓	✓	✓
niji	✓	✓	✓	-

"/imagine An owl sitting on a branch --q .25"

"/imagine An owl sitting on a branch --q 2"

Good comparison can be seen on following pictures generated through **version 4:**

"/imagine woodcut birch forest --q _ --v 4"

--quality .25

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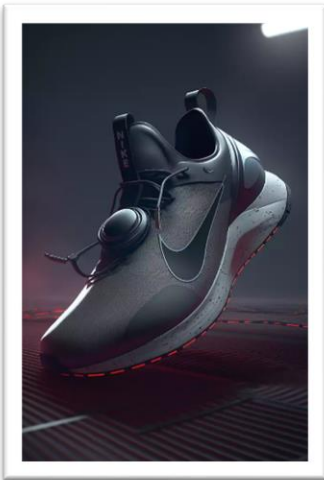*--quality .5*   *--quality 1*

6. LIGHTING & RENDERING

Quite a big change can be achieved by adjusting rendering or lighting.

Different kinds of rendering are easily observed on closer objects:

*"Nike Air Flight Huarache Shoe pride month, bright, colorful, glossy, 3D, **Arnold render**, **Vray render**, artstation, 4k, very detailed, post processing"*

*"Nike pace shoes made of rubber and composite fibers, black Nike logo in the shoe, photography by Steven Meisel, beautiful lighting, **unreal engine, octane render,** hd, iq 180 --ar 2:3 --style 4a"*

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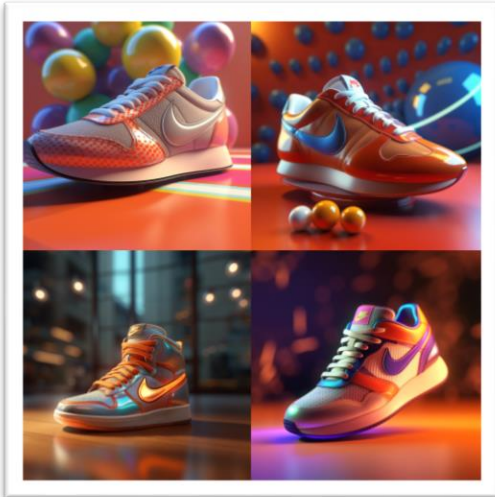
"Realistic nike shoe,
cinema 4D,
ray tracing"

Arnold render is an advanced ray tracing renderer used for VFX animation.

Vray/V-Ray is also a real time ray tracing system, but mostly used for architecture or advertising.

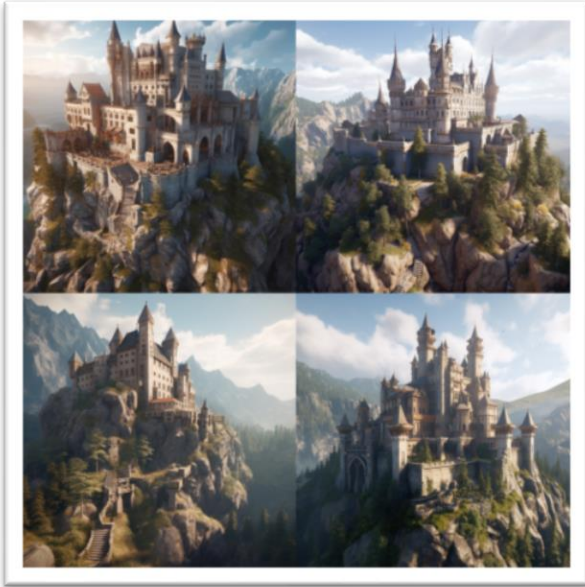**Unreal engine** is a videogame development tool, that has very specific „almost realistic" style.

Octane render is a GPU render engine that uses a way of calculating final rendered images that aims to be photo-realistic.

Cinema 4D is a professional 3D modeling, animation, simulation and rendering software. It is very popular for making elaborate 3D models.
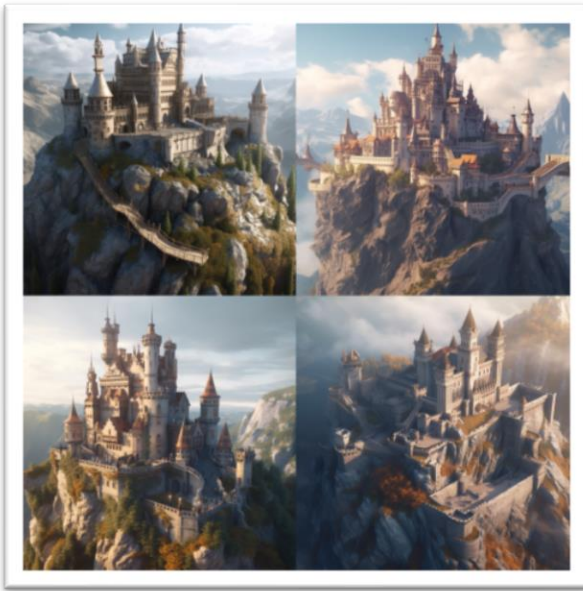
Ray tracing is a rendering technique that can realistically simulate the lighting of a scene and its objects by rendering physically accurate reflections, refractions, shadows, and indirect lighting.
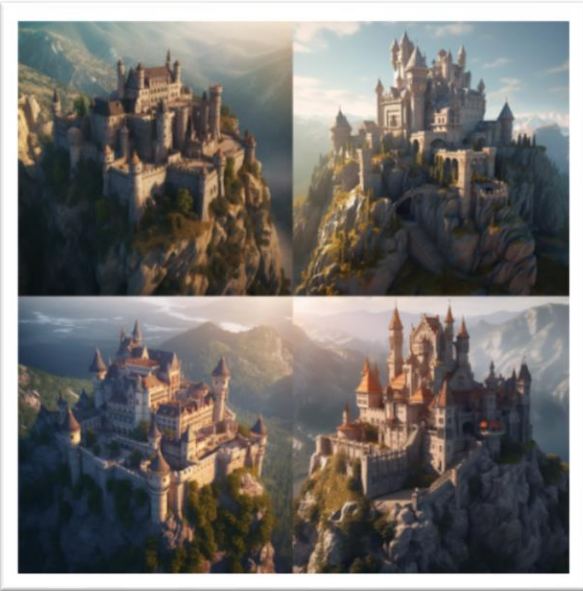
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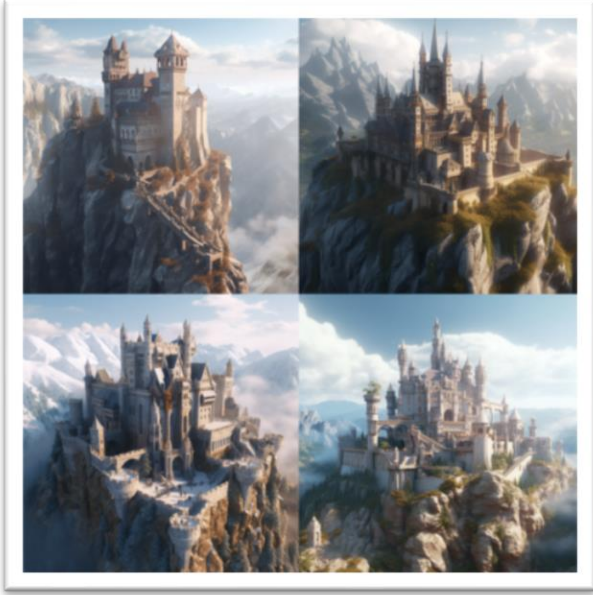
"/imagine Fantasy medieval castle on the mountain, octane render"

"/imagine Fantasy medieval castle on the mountain, unreal engine"

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"/imagine Fantasy medieval castle on the mountain, cinema 4D"

"/imagine Fantasy medieval castle on the mountain, ray tracing"

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"/imagine fantasy castle" - with different settings

Here you can easily observe all the differences.

| volumetric lighting | cinematic lighting | octane render | softbox lighting |
| glowing lights | blue lighting | long exposure | fairy lights |

If you want your picture for commercial purposes, try to play with „studio light" prompt:
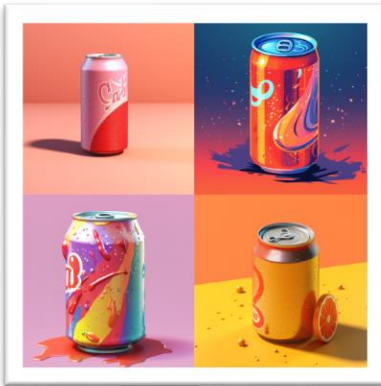
"/imagine a can of soda"
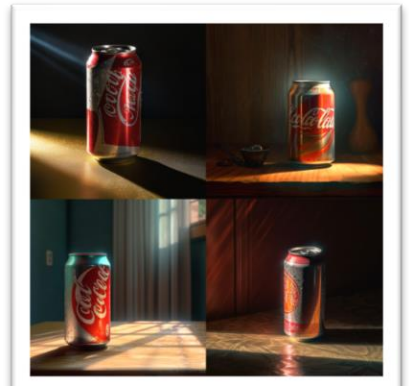
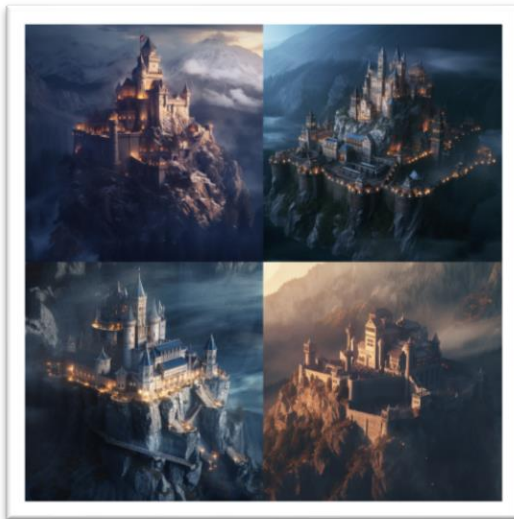*"/imagine a can of soda, studio light"*

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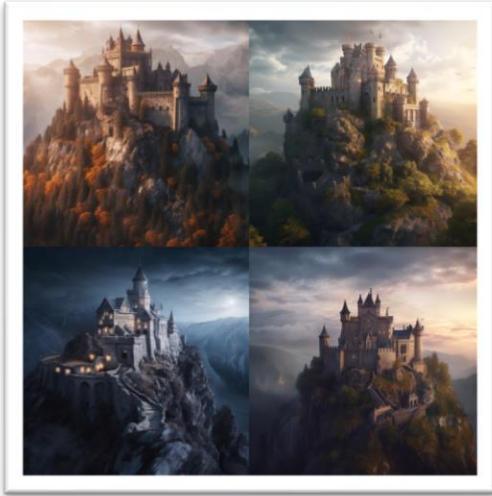ÜNİVERSİTESİ
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Different „light" prompts change the overall atmosphere of the image in a deliquiate manner:
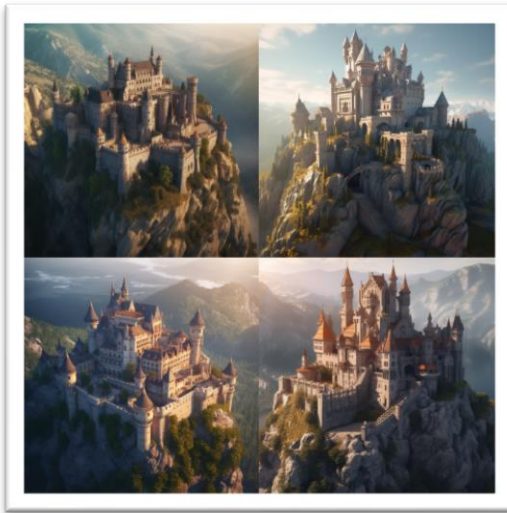
"/imagine Fantasy medieval castle on the mountain, volumetric lighting"

"/imagine Fantasy medieval castle on the mountain, cinematic lighting"
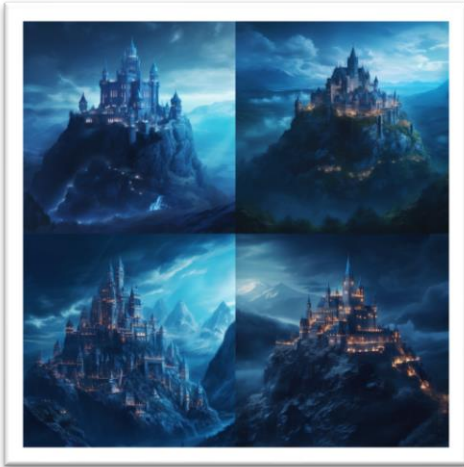
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"/imagine Fantasy medieval castle on the mountain, softbot lighting"

"/imagine Fantasy medieval castle on the mountain,

glowing lights"

"/imagine Fantasy medieval castle on the mountain, blue lighting"

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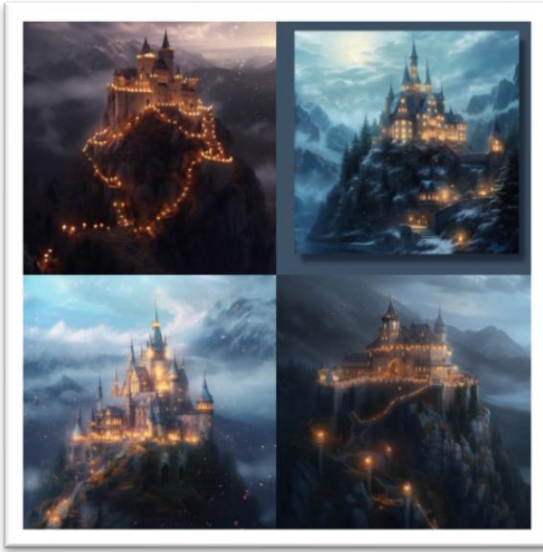
"/imagine Fantasy medieval castle on the mountain, fairy lights"

"/imagine Fantasy medieval castle on the mountain, long exposure"

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7. STYLE

There are several commands you can use that will noticeably change the stylization of the image. You might want to use them if you are looking for inspiration or are not sure about the exact form of output you want. The commands you want to play with are: „chaos", „seeds" and „stylize".

7.1. Chaos

The parameter **"--chaos"** or **"--c"** determines the level of diversity in the initial image grids. When set to a high value, it generates unique and surprising outcomes with unconventional compositions. On the other hand, lower values of *"--chaos"* yield more consistent and replicable results.

"/imagine An octopus wearing a hat"

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"/imagine An octopus wearing a hat, --c 25"

"/imagine An octopus wearing a hat, --c 50"

"/imagine An octopus wearing a hat, --c 100"

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7.2. Seeds

The Midjourney bot employs a seed number to generate a field of visual noise resembling television static. This noise serves as the initial foundation for generating image grids. Each image is assigned a random seed number, but you can also specify a particular seed using the **"--seed"** parameter. By utilizing the same seed number and prompt, you can expect similar final images to be produced. That comes in handy when you find the style you like and just want little adjustments.

If you want to see the seed of your picture, just right click it and add an „envelope" reaction. The seed and „job name" (unique code for each image generated) will be shown in your chat. The seed command accepts only while numbers in range 0-4294967295. Yes, it is weird. The seed value only influences the image grid (the blurry initial image you see during the generation). Without using a seed, every generation has random one and the results will differ:

"/imagine An astronaut holding a banana"

Generation 1   **Generation 2** (same prompt)

"/imagine An astronaut holding a banana, seed 726",   And again

7.3. 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.

Different Midjourney versions 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

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"/imagine A dancer in rain"

"/imagine A dancer in rain --s 300"

"/imagine A dancer in rain --s 600"

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"/imagine A dancer in rain --s 1000"

"/imagine An apple --s 8"

"/imagine An apple --s 800"

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"/imagine colorful risograph of a fig --s X"

"--s 0"   *"--s 50"*

"--s 100" (default)   *"--s 250"*

"--s 750   "   "--s 1000"

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8. MEDIUM

8.1. Specify the medium

The need for specificity doesn't end when you fully and precisely describe the subject of your desired image. You should also specify its medium.

Medium is the material used to make artwork. Some examples include illustration, oil painting, 3D rendering or photography. In this chapter, we will explore many more options including the visual examples. You will understand how strong the effect of medium is, since a single simple keyword alone can dramatically change the visual.

Let's start with a few examples of art mediums with an elegant maine coot cat.

„/imagine a Maine Coon Cat sitting on a wooden table"

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Midjourney aims to provide the smoothest user experience-therefore without specifying the medium, it uses **realistic photography as a default medium** in most of the cases. We can adjust a few qualities: the color palette, lightning and resolution.

*„/imagine a Maine Coon Cat sitting on a wooden table, **soil colors, studio lighting, high detail"***

It's time to include our preferred art medium:

*„/imagine **an oil painting** of a Maine Coon Cat sitting on a wooden table, soil colors, studio lighting, high detail"*

*„/imagine **a lithography** of a Maine Coon Cat sitting on a wooden table, earthy soil colors, studio lighting, high detail"*

*„/imagine **a watercolor painting** of a Maine Coon Cat sitting on a wooden table, earthy soil colors, studio lighting, high detail"*

If you have enough earthy soil shades, let's **add some color** and life!

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*„/imagine a **crayon illustration** of a Maine Coon Cat sitting on a wooden table, **vivid color palette, studio lighting**, high detail"*

8.2. Sketch

As we already pointed out in the Subject chapter, the **word choice matters.** For instance a word "*sketch*" can have multiple meanings depending on the context.

A **sketch** can refer to a rough or unfinished **drawing** that captures the basic outlines or features of a subject. Sketch can also denote a **brief or basic outline or plan,** typically used as a starting point for a project or design. For example, an **architect** might create **a sketch of a building** to illustrate the general layout before proceeding with detailed blueprints. However, as we can see in the following examples, Midjourney will most likely associate the word "sketch" with the first connotation- a simple drawing.

"/imagine a sketch of a tomato"

As you can spot, Midjourney offers you 4 more or less various pencil sketches…

"/imagine black and white sketch of tomato"

Bear in mind that the importance (weight) you give to each of the words also matters:

"/imagine tomato::1 sketch::"

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Unless you specify it, for instance with more details, like a

- **Painting**: Techniques for creating depth, texture, and color harmony.

- **Sculpture**: Methods for working with various materials and shaping three-dimensional forms.

- **Printmaking**: Introduction to techniques such as etching, lithography, and screen-printing.

Watercolor sketch

"a boy and a girl, Dream journey, dream world, enter a fantasy world, colorful nature, world of wonders, no letters, watercolor sketch, v 5.1 --s 250 –"

Sketch

"/imagine black and white sketch of food"

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8.3. Combining mediums

There are no more limitations to our creativity. So what about mixing traditional and digital techniques to create unique artworks?

*"Vincent's Choice **Digital Watercolor Paint** of a Sunflower **vector art illustration** 8k --ar 18:12 --v 5 --s 750 --q 2"*

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9. ARTIST

9.1. Artists style

This category involves referencing a specific artist or their work to evoke a particular style or influence. Examples include mentioning artists like Alphonse Mucha, Frida Kahlo, or John Collier.

Now, imagine you are a passionate writer investing your entire free time into the creation of a breathtaking novel. You would like to share it with a wider audience, yet you lack talent and money for appropriate visual accompaniment inspired by your favorite artist. Why not ask AI for help? You will be surprised by its "knowledge" of the vast amount of artists, not only world-famous, but also those known only in specific communities (e.g. anime or comic book artists).

"/ imagine a cover for a sci-fi novel set on a distant planet in the style of retrofuturism, referencing the works of Syd Mead. Use a digital art technique and a 4:3 aspect ratio. The title is 'Aeronian Odyssey' and weight is 5.0"

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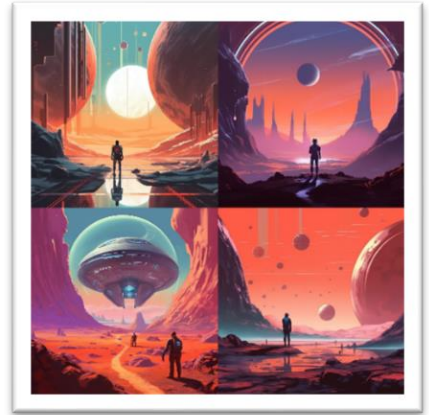
"/imagine a cover for a horror novel set in a haunted mansion in the style of Gothic art. Use a pencil sketch technique and a 3:2 aspect ratio. The title is 'The Darkened Halls' and the weight is 5.0."

"Innsbruck *buildings* **urban sketch** *by* **Albert Kiefer"**
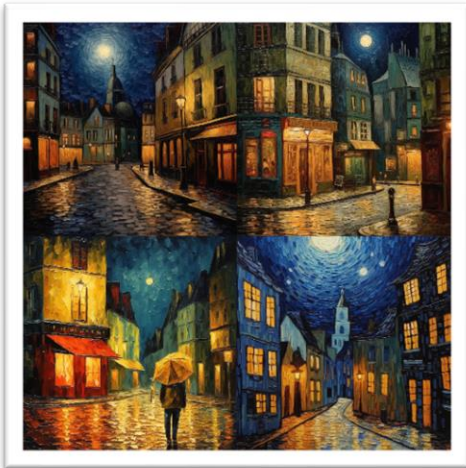
":/imagine a cover for a mystery novel set in Paris during the 1920s, using an impasto technique in the style of Vincent van Gogh. The title is 'Midnight in Montmartre.' Use a 9:16 aspect ratio and a weight of 5.0."

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*"**urban sketch** of the skyline of Rome, --**ar 2:1** – "*

9.2. Narration

Prompts can remain very simple or quite complex. Keep in mind that short prompts rely heavily on Midjourney's default style, while longer prompts allow you more customization.

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However, super-long prompts aren't always better. Focus on the main concepts you want to create.

"Create a digital painting of a majestic mountain landscape in the style of Impressionism, inspired by the works of Claude Monet. The artwork should resemble the art found on ArtStation, with a high resolution of at least 4K. Use vibrant colors and a serene atmosphere, incorporating a pastel color palette. Illuminate the scene with soft, diffused lighting to create a warm glow."

Compare it to a result of a non-narrated, well structured prompt:

":imagine a mountain landscape, a digital painting, impressionism, by Claude Monet, ArtStation, 4K, vibrant colors and a serene atmosphere, pastel colors, soft diffused lightning creating a warm glow"

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10. IMAGE PROMPTING

If you want to build upon the image you already have, or want Midjourney to draw inspiration from specific image, you can use your own image or picture from the web as a prompt.

To add an image from web, just paste the URL into the chatbox. If you want to use your own, upload it via the plus symbol into the chat and when you want to use it, drag it into the prompt. The importance of the image compared to the text prompt can be adjusted by command **"—iw"** (image weight) in range 0.5 to 2. Lower number means lesser importance of the image and vice versa.

Here we have our image:
https://i.sozcucdn.com/wp-content/uploads/2023/05/16/23-erdogan.jpeg?w=1200&h=675&mode=crop

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And our prompt:

"/imagine **//LINK//** as a sci-fi::3 alien::2. He is on a spaceship::1 --s 350 –iw 1.25"

You can also easily mix images together. Here we have 2 images:

Ship:
https://image.invaluable.com/housePhotos/weatherham/42/723042/H21808-L288079953.jpg
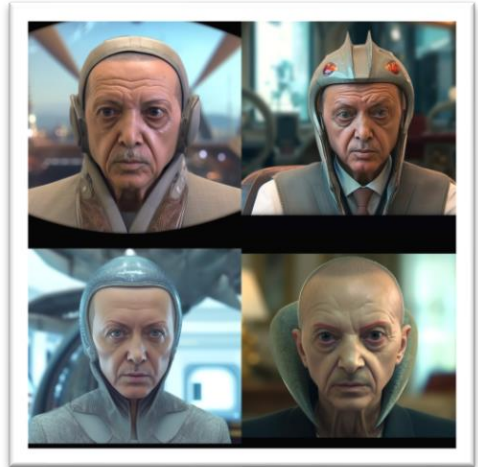
Sea:
https://media.istockphoto.com/id/626269490/photo/endless-sea-and-sky.jpg?s=612x612&w=0&k=20&c=zJw-UuIdRoS7jySKj_xw402eOYcMcMRh_OpQNLz-UXA=

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And we merge them with an easy prompt:

/imagine A ship like this
//SHIP LINK//
on an open sea like this
//SEA LINK//

It is necessary to describe what should the AI do with those images as just writing **„+"** leads to beautiful, but very random images:

+

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Bust:
https://cdn.shopify.com/s/files/1/0083/2471/0466/products/30-5333_1_78ee2dd5-a97a-4490-a98f-9541831e3bbe.png?v=1676450329

Fruits:
https://img.freepik.com/photos-premium/mangue-kiwi-figue-fraise-raisin-poire-orange_2829-18589.jpg

11. EXTERNAL SOFTWARE

If you would like another app or AI to write the prompt for you, there are some options.

When you try using ChatGPT, it is a long way to prepare it for this task. If you just ask for the prompt directly, it gets creative, but the final result is not usable.

You can have a look:

If you really insist on using ChatGPT, you need to feed it specific information about how to write prompts for the AI you chose. Very good explanation can be found on website:
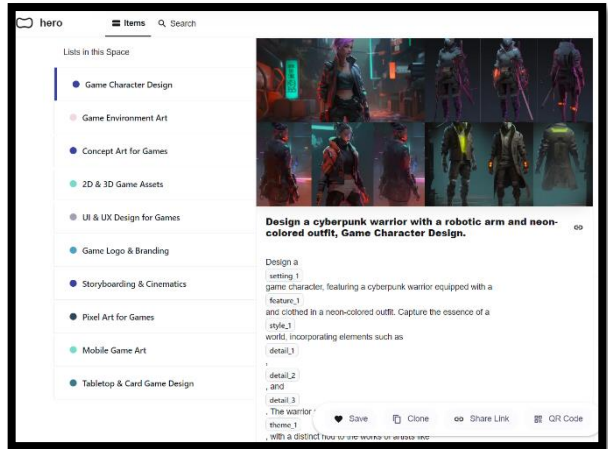
https://allthings.how/how-to-use-chatgpt-as-a-prompt-generator-for-midjourney/

Generally, you need to know all the prompting rules for the generator you are using and teach them ChatGPT. You can speed up the process by showing it multiple good prompts and let it ask what

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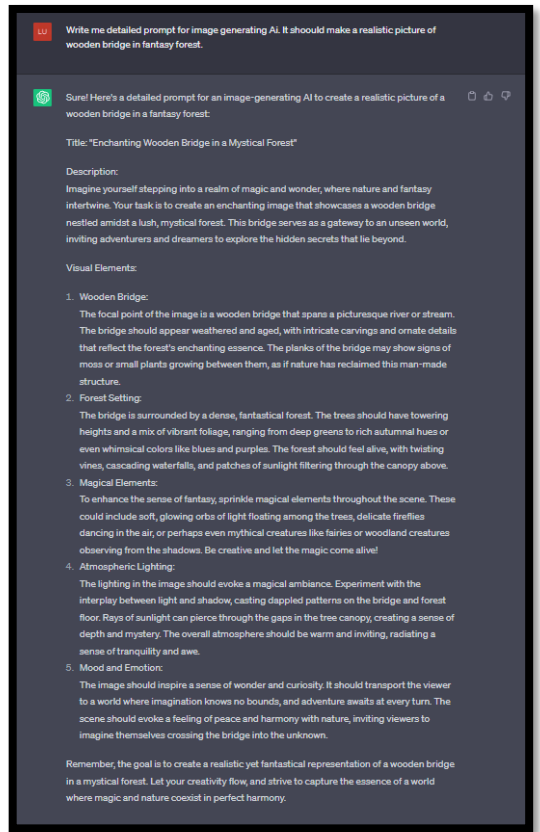
different commands mean. It is not much efficient if you just want to save time, but if you are planing to generate a huge amount of pictures, ChatGPT could be handy. Luckily, someone already did the job for you, so you can use chrome extension **„AIPRM"** (https://chrome.google.com/webstore/detail/aiprm-for-chatgpt/ojnbohmppadfgpejeebfnmnknjdlckgj), which is ChatGPT, but already fed with all the info about prompting.

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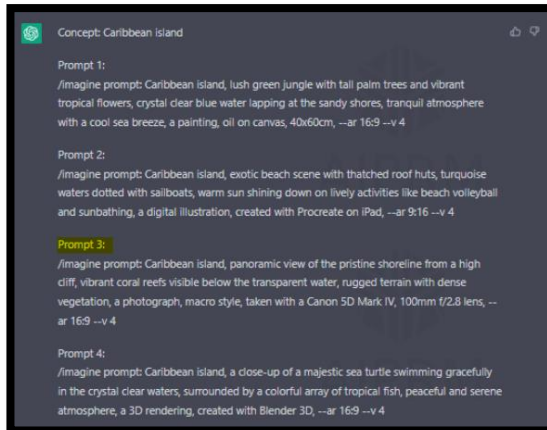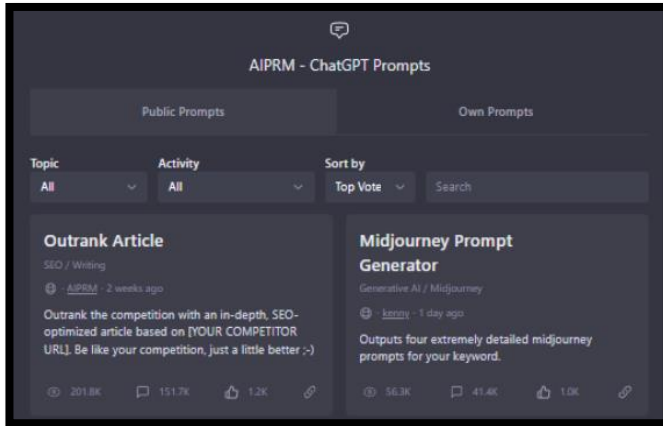
If you want to get an inspiration for perfect prompts, you can easily browse this large **„Prompt gallery"**

https://hero.page/samir/all-prompt-libraries-in-one-page/midjourney-prompts-with-examples?ref=allthings.how

But if you really want to speed the process up and also learn different commands, „promptmania" is the way to go (https://promptomania.com/stable-diffusion-prompt-builder/). It allows you to choose the AI you use, then you write a basic short prompt like „a Cottage in forest" and you can add different commands by simply clicking on offered settings.
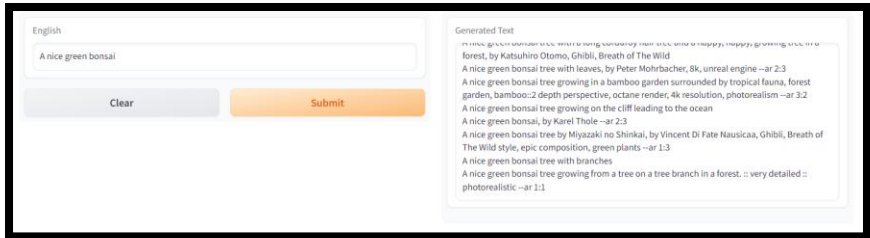
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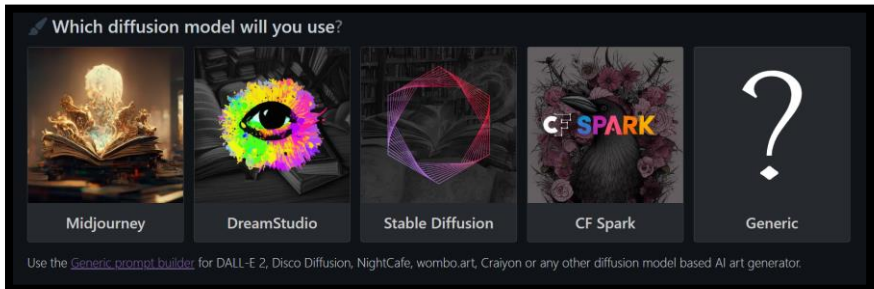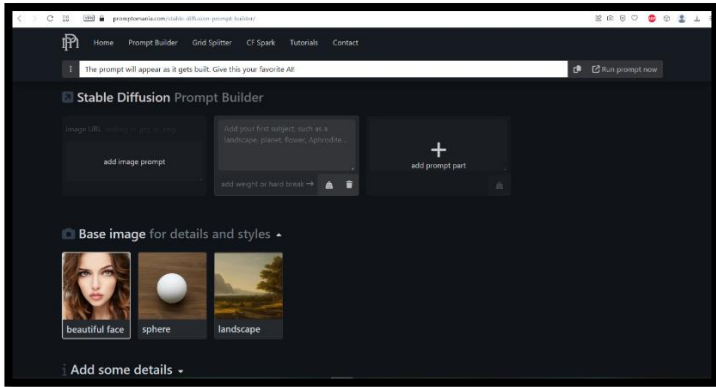
It is able to use wide range of art mediums, color palletes, lighting, post-processing and it has a huge database where you can choose from dosens of styles of different artist.
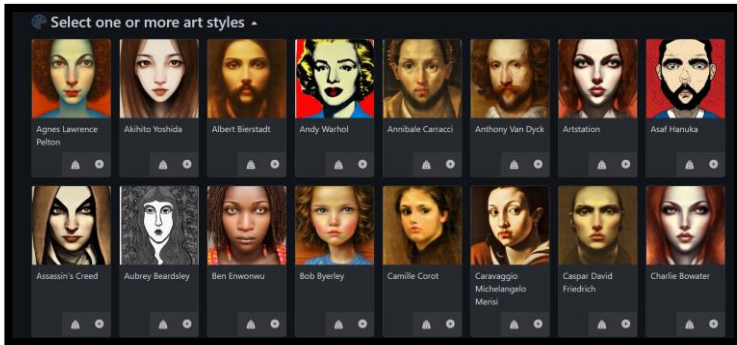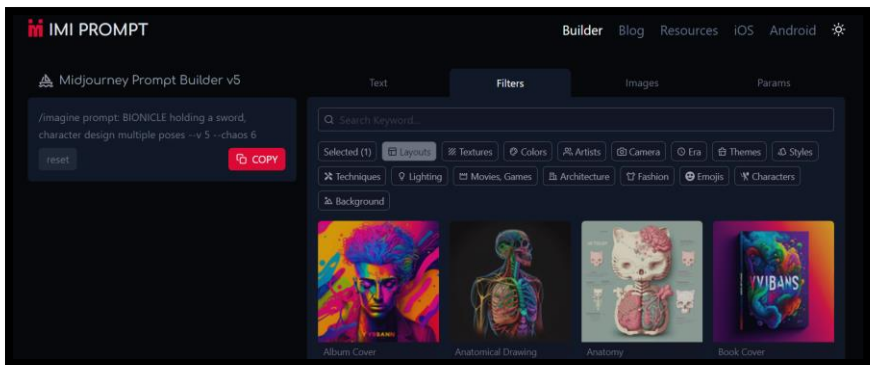

It is a helpful tool for learning the basic prompt mechanics, but if you have very specific image in your head, you will still need to learn to do the prompting by yourself. At least for now … There is also a lot of people on fiverr.com that are offering to write you a good prompt for money, which seems completely ridiculous, as there are tons of good free prompt generators already, but it is also a possibility.

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If this is not enough, you can get a lot of inspiration form the **„Huggingface"** (https://huggingface.co/spaces/doevent/prompt-generator), which offers you tons of prompt variations.

Or you can try different prompt builders, as IMI PORT (https://www.imiprompt.com/builder), which is very well executed;

Viorel Spînu, (https://www.viorelspinu.com/p/midjourney-prompt-generator.html?ref=futuretools.io) which is simple, minimalistic and easily comprehensible;

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Or if you like spreadsheets, you will love Reddit projects called **„Prompter",** which is a tool created in Google Sheets. You only need Google account. It is not as good as the others, but is magnificent that the community put so much effort into this.

(https://preview.redd.it/twq07m5lnzb91.jpg?width=2048&format=pjpg&auto=webp&s=ffa18bc96ef1ab9ee7b0c0a1cd2a75b803ef58de),

USING CHATGPT AS A VIRTUAL COLLABOLATOR
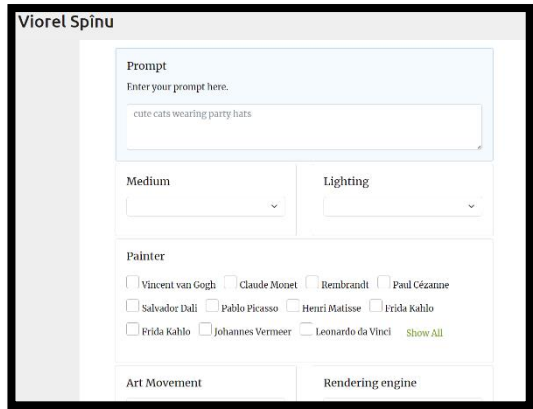
12. BONUS

"/Imagine Midjourney talking to ChatGPT"

"When you close this book and the last page turns over, remember that this is only the beginning. Armed with the knowledge of using artificial intelligence to generate perfect images, you become the architect of your artistic world. Develop your skills, experiment and discover boundaries that were not there before earlier. Let your works become a bridge between human creativity and the powerful possibilities of technology. Now it's time for you to take up the challenge and paint the future with the help of artificial intelligence. Let your paintings inspire the world and open new horizons of art."

~ ChatGPT