Introduction to AI for Image Generation

Image Generation Providers

Some Providers and Their Features:

- **Leonardo AI:** Known for creating high-quality images and a user-friendly interface.
- **Krea**: Offers upscaling and real-time image generation.
- **Dalle 3:** Accessible via ChatGPT or Bing.
- **Midjourney:** Requires a paid account, challenging to start but delivers outstanding results.

Image Providers

Leonardo
Easy to start with a powerful interface that has a huge array of features to play with.

https://app.leonardo.ai/

Dalle 3
Free through Bing Image Creator can aso be accessed by Chatgpt

https://www.bing.com/images/create

Mid Journey
Best image quality but currently requires a technical start as it runs through discord.

How to install

How to Prompt

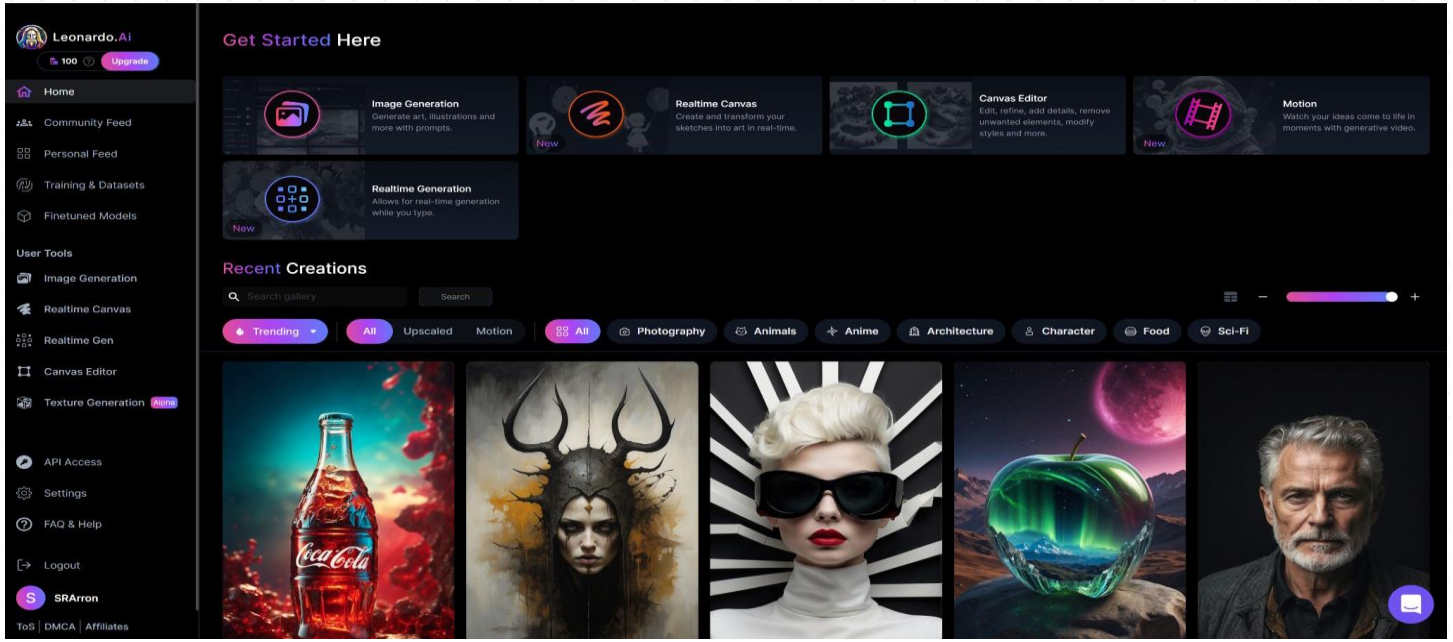
Creating an Image in Leonardo

So let's start by creating an account on Leonardo

https://app.leonardo.ai/

Sign up

This first page shows creations from other people if you scroll down. As you can see there also many features to this website.



Select this

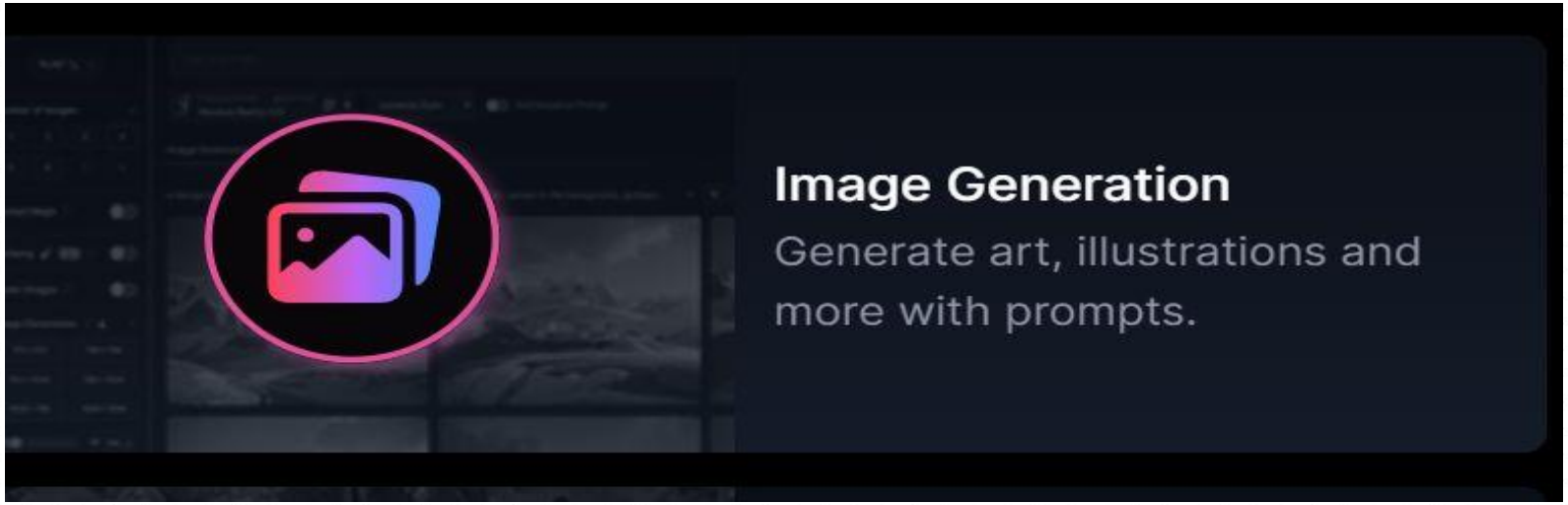
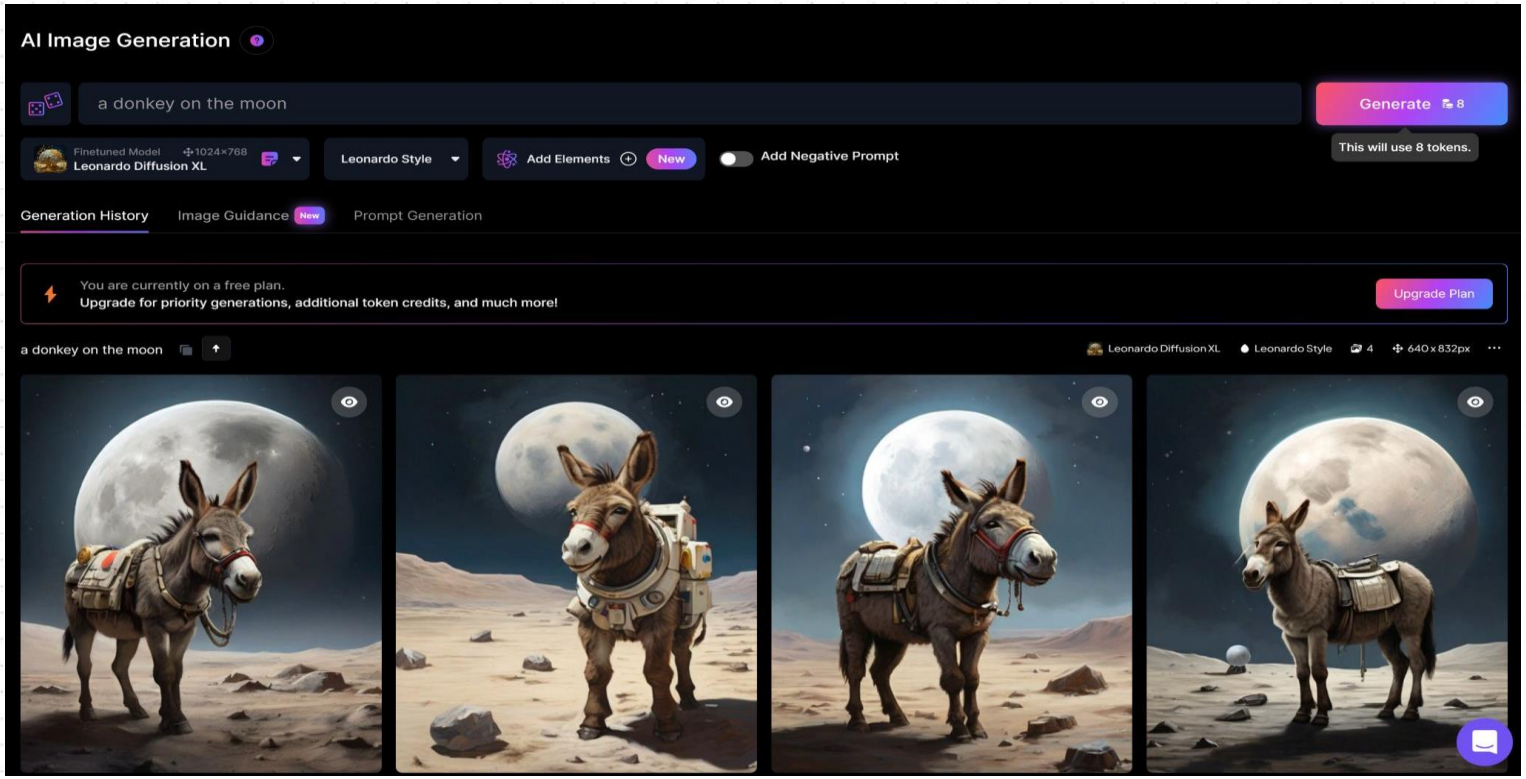


Image Generation
Generate art, illustrations and more with prompts.

Select this

Now you type in the prompt you want to generate.

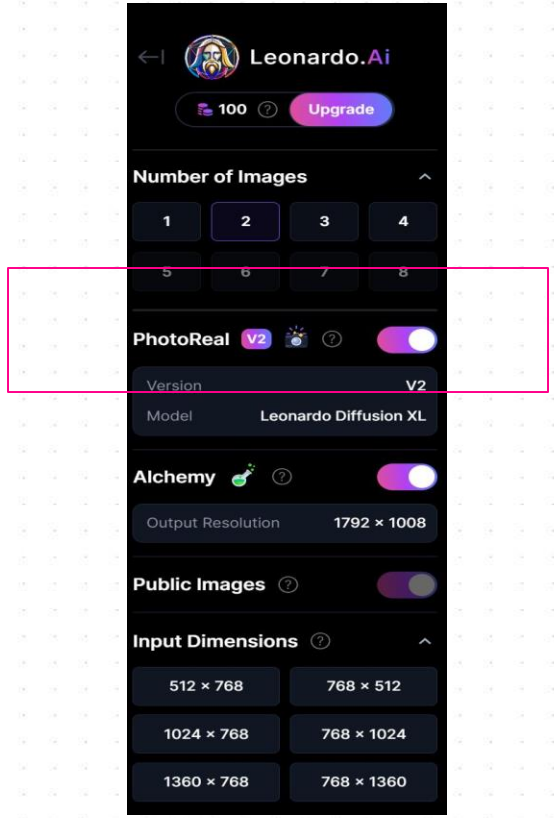
Here I have prompted a donkey on the moon but you type in your own one.



Select this

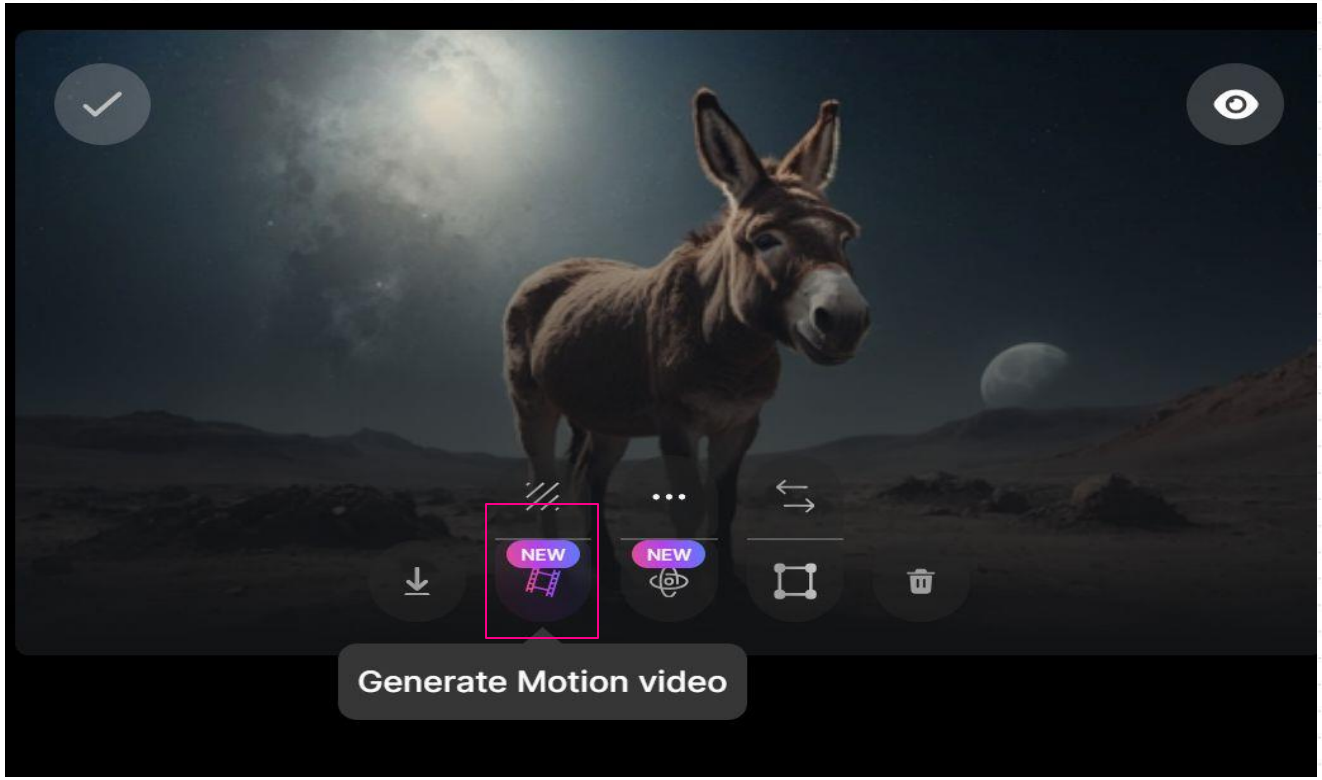
Now I want this as a realistic image so I select Photoreal. I also reduce the number of images generated to save some credits.

Now you type in the prompt you want to generate.
Here I have prompted a donkey on the moon but you type in your own one.



Select this

Now you can bring that image to life by making it into a video



Here it is moving

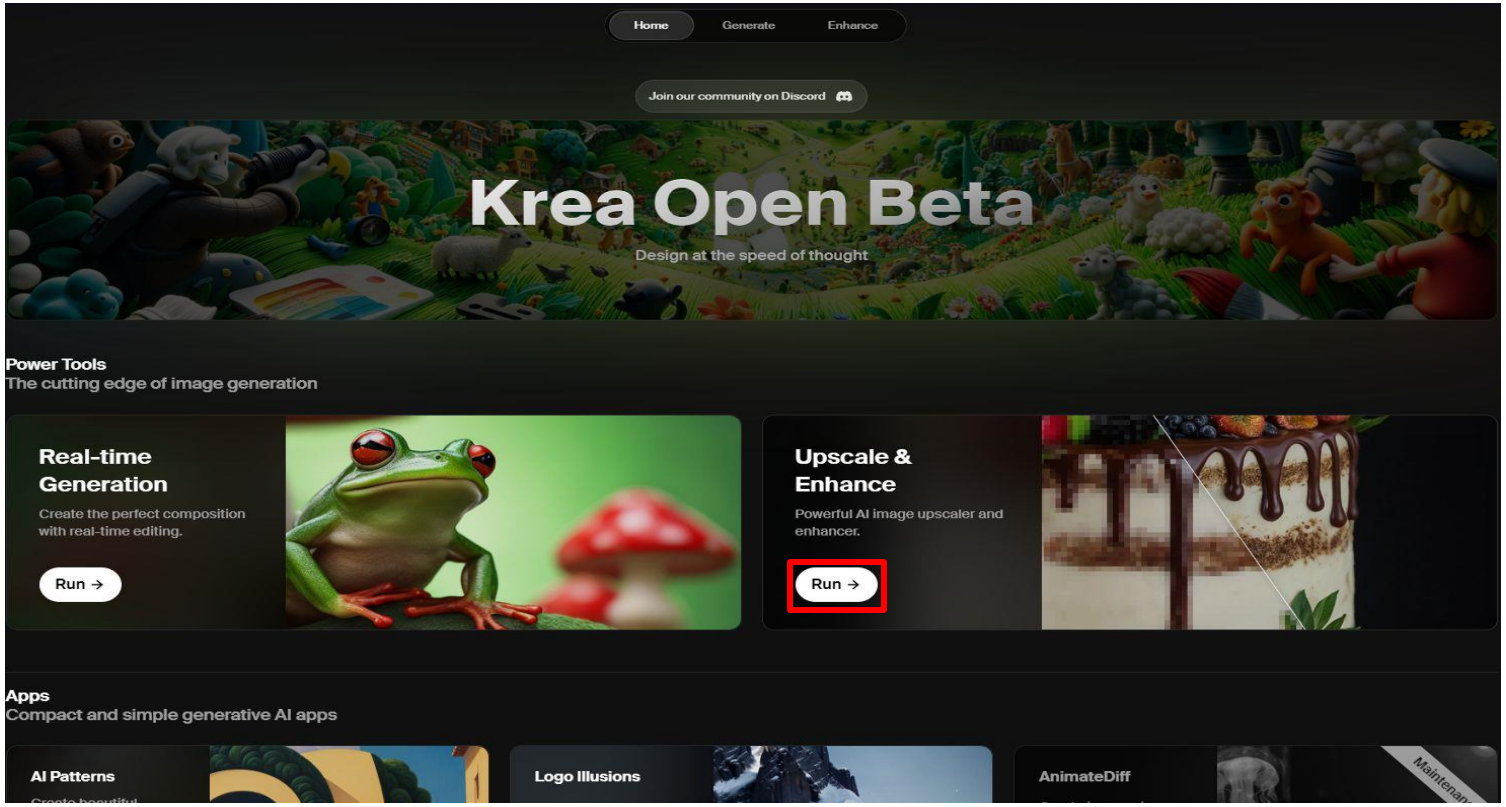
Upscale & Enhance with Krea AI

Getting Started

Sign up for a free account at
https://www.krea.ai/home

Krea offers a number of AI powered tools, but we'll focus on the Upscale and Enhance tool.

Click 'run' to get started.



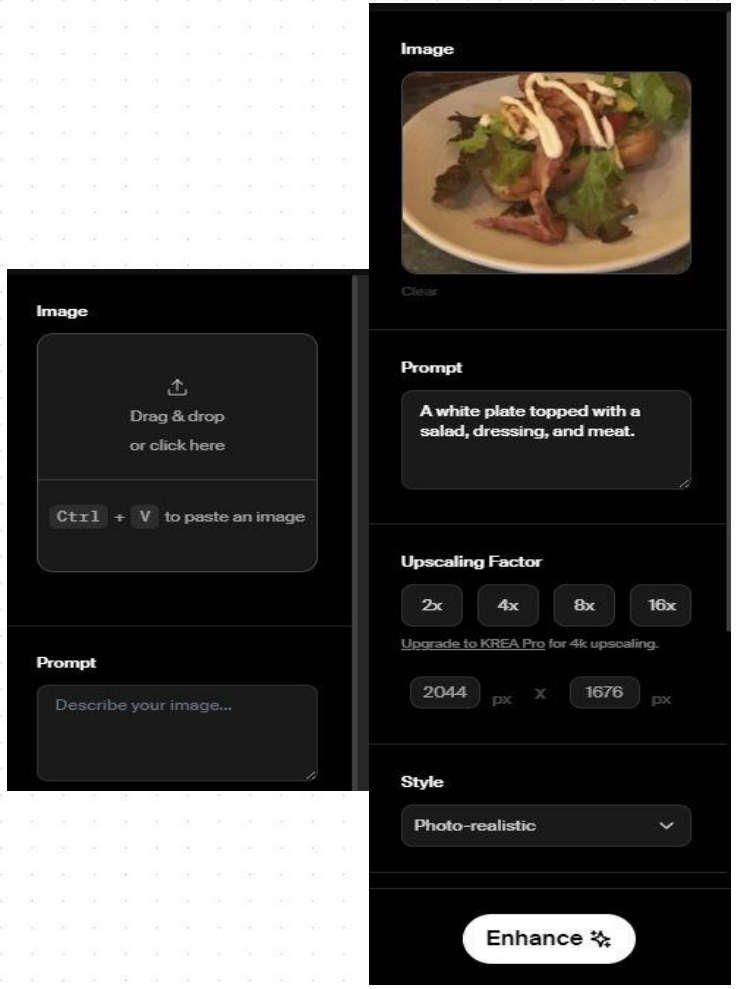
Upscale & Enhance

Upload the image you wish to upscale by dragging & dropping, or pasting you image in the area at the top left of the page. Once this is done, Krea will generate a prompt of what it thinks it can see.

Below this, you can select the Upscaling factor. On the free plan, you are limited to upscaling to 2048x2048. You can input an exact pixel amount if you with to change the dimensions of the image.

There are also options to adjust the image style and the accuracy of the AI.

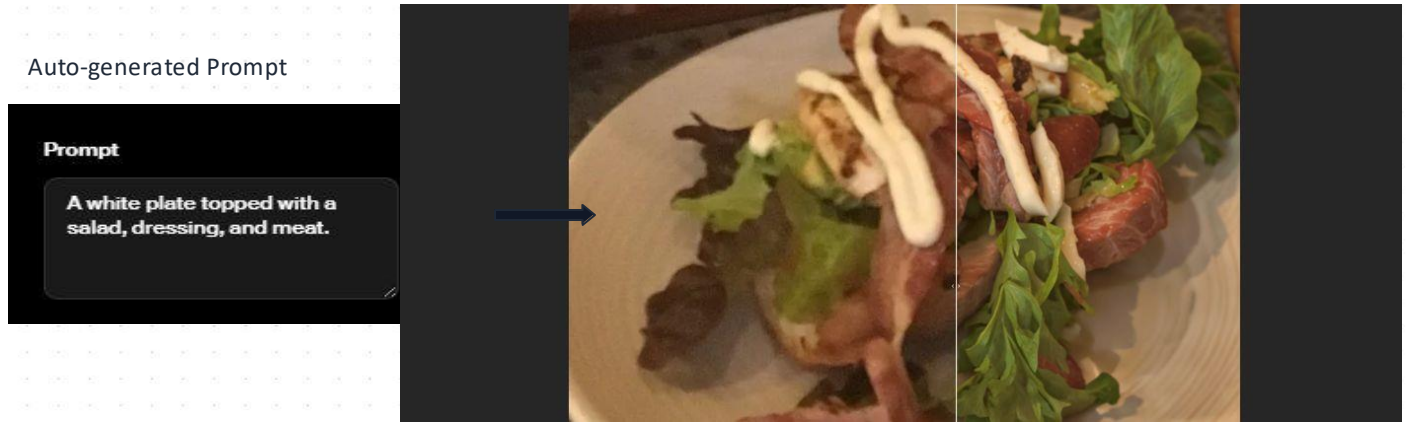
Original Image



Review & Refine

Here, you can see the original output image. While it has upscaled, it has failed to recognise that there is a piece of bread on the bottom of the plate and confused it for meat.

Auto-generated Prompt



However, by editing the prompt it gave and correcting what the image is actually showing, we get a much more accurate result, while also looking incredibly realistic (and delicious)

User Refined Prompt

Full Scale Comparison

Original Image

Upscaled and Enhanced Version

Text-to-Image Generation with Dall - E3

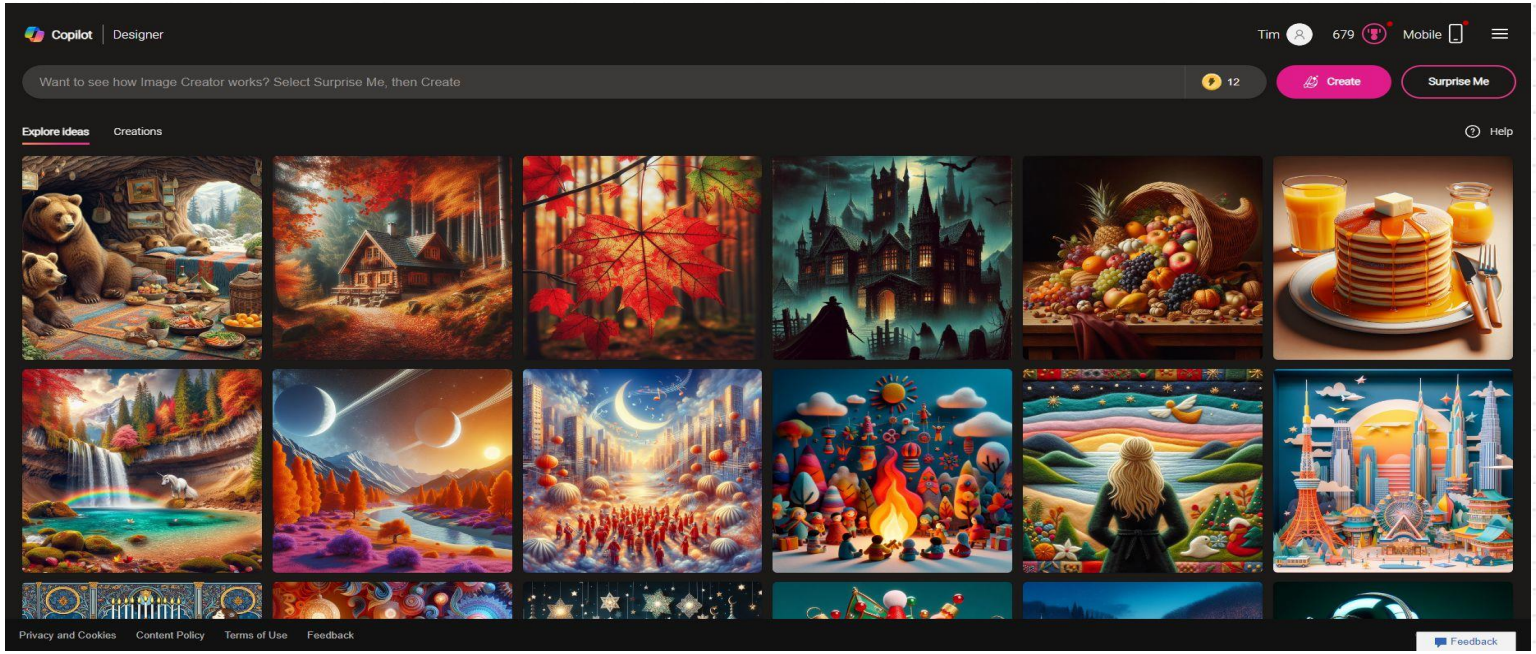
Getting Started

There are a number of Image Generation tools that are powered by Dall-E3

For beginners, using the free “Image Creator” from Bing is a good place to start with prompting and understanding how the image generation process works.

Note: you will need to either create a Microsoft Account or login to an existing one in order to use this service

http://www.bing.com/images/create



Creating your first image(s)

From here, you can jump straight into image generation by typing your prompt in at the top, followed by “Create”.

You can also look in the “Explore Ideas” section for inspiration, both with image style and prompting, as hovering over an image will show the prompt used to make the image.

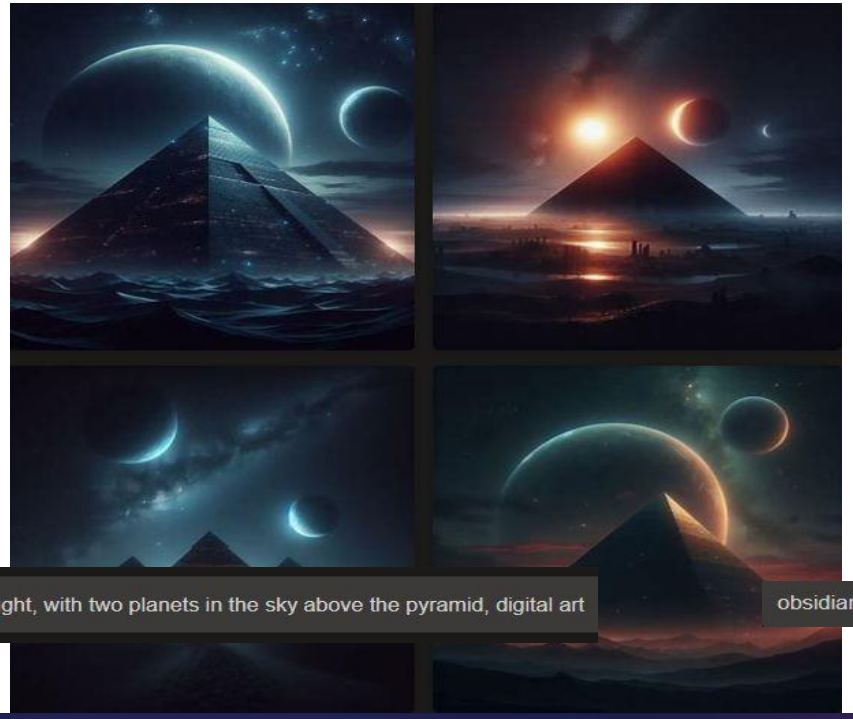
The “Surprise Me” button in the top right will generate a random prompt that you can then create images for, or make changes to before generating,

Output and Adjustments

Prompts will result in 4 different images being generated, with the ability to save any number of these to your collections (this ensures they are saved, otherwise, images are removed after 90 days).

If you aren't quite happy with the images, you can either generate again with the same prompt to create slightly different versions, or adjust your prompt to have more control over the details.

Original Output



Revised Prompt

Create, Resize and Remix with Midjourney

Getting Started

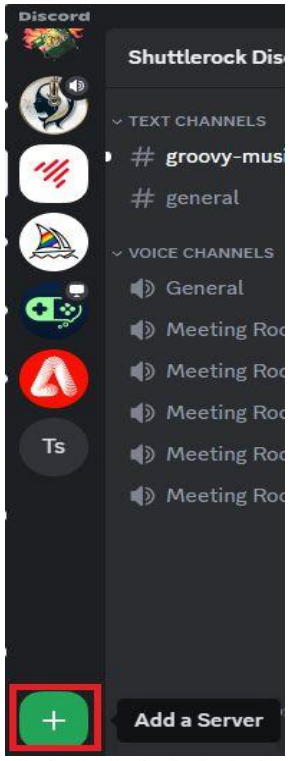
Midjourney is a paid only image generation software that boasts higher quality image outputs than most other free software.

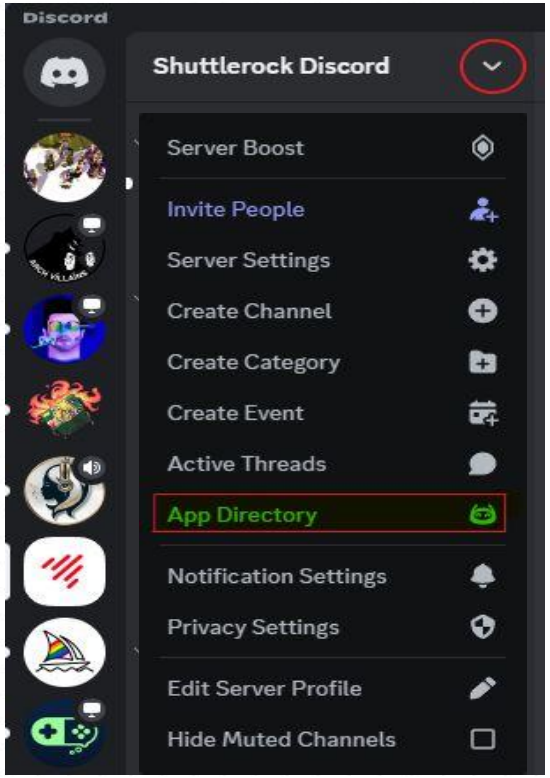
It is used via a Discord integration. So you will need to install and create a Discord account in order to use Midjourney.

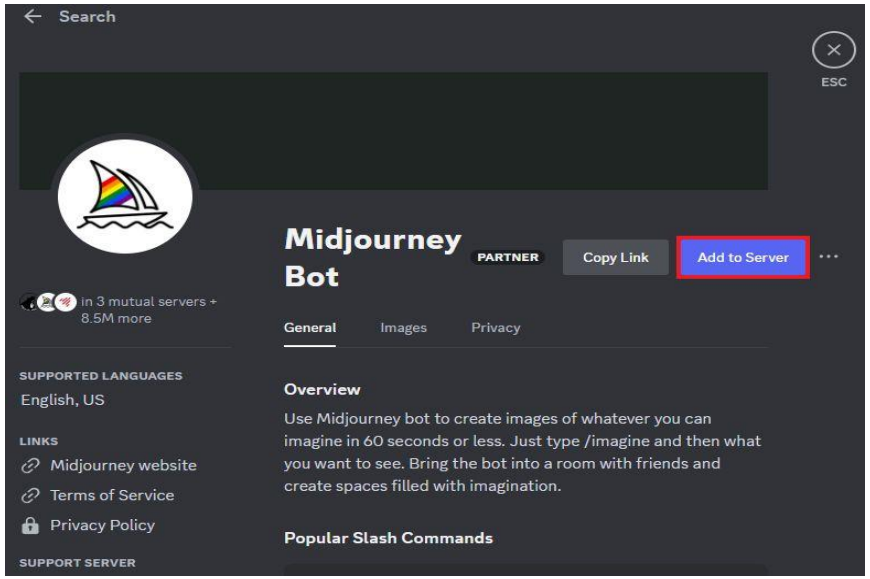
To begin, you'll first need to create a Midjourney account and then it is also recommended that you create a Discord server for your own use (Midjourney has their own server, but has a large number of users all generating images there, so it is quite cluttered)

Setting up Discord

- Head to discord.com and download the app (desktop and/or mobile)
- Create your discord account, or login with an existing one.
- Create a new server via the menu on the left hand side
- Under the server options, Select “app directory” and then search for “Midjourney Bot”.
- Select “Add to Server” and then choose the server you have made before choosing ‘Continue’







Subscription

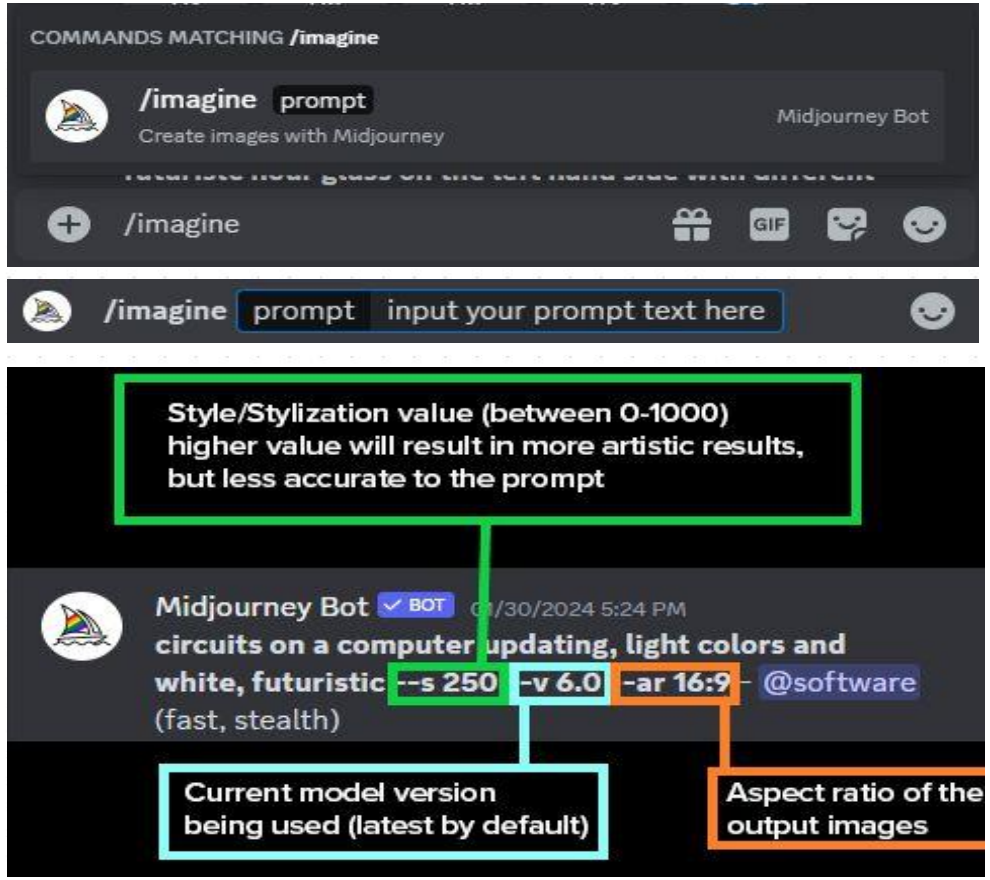
- Now that you've added Midjourney to your Discord server, you'll need to purchase a subscription before generating images. You can do this by going to https://www.midjourney.com/account/ and logging in with your Discord credentials
- Once your purchase has gone through, you are ready to start generating images.

	Basic Plan	Standard Plan	Pro Plan	Mega Plan
Monthly Subscription Cost	$10	$30	$60	$120
Annual Subscription Cost	$96 ($8 / month)	$288 ($24 / month)	$576 ($48 / month)	$1152 ($96 / month)
Fast GPU Time	3.3 hr/month	15 hr/month	30 hr/month	60 hr/month
Relax GPU Time	-	Unlimited	Unlimited	Unlimited
Purchase Extra GPU Time	$4/hr	$4/hr	$4/hr	$4/hr
Work Solo In Your Direct Messages	✓	✓	✓	✓
Stealth Mode	-	-	✓	✓
Maximum Concurrent Jobs	3 Jobs 10 Jobs waiting in queue	3 Jobs 10 Jobs waiting in queue	12 Fast Jobs 3 Relaxed Jobs 10 Jobs in queue	12 Fast Jobs 3 Relaxed Jobs 10 Jobs in queue
Rate Images to Earn Free GPU Time	✓	✓	✓	✓
Usage Rights	General Commercial Terms*	General Commercial Terms*	General Commercial Terms*	General Commercial Terms*

Initial Image Generation

- To start generating image in Midjourney, go into any #text-channel in your discord server and start typing "/imagine". Hit 'Enter' to bring up the prompt textbox and begin prompting.

- Midjourney has more advanced prompting options than other services, where you can not only input your image request, but you can also include a number of parameters, such as aspect ratio of the output, the style of the images generated and even what model of Midjourney the bot will use for your image generation
- Midjourney has a number of more advanced prompting resources available online at: https://docs.midjourney.com/docs



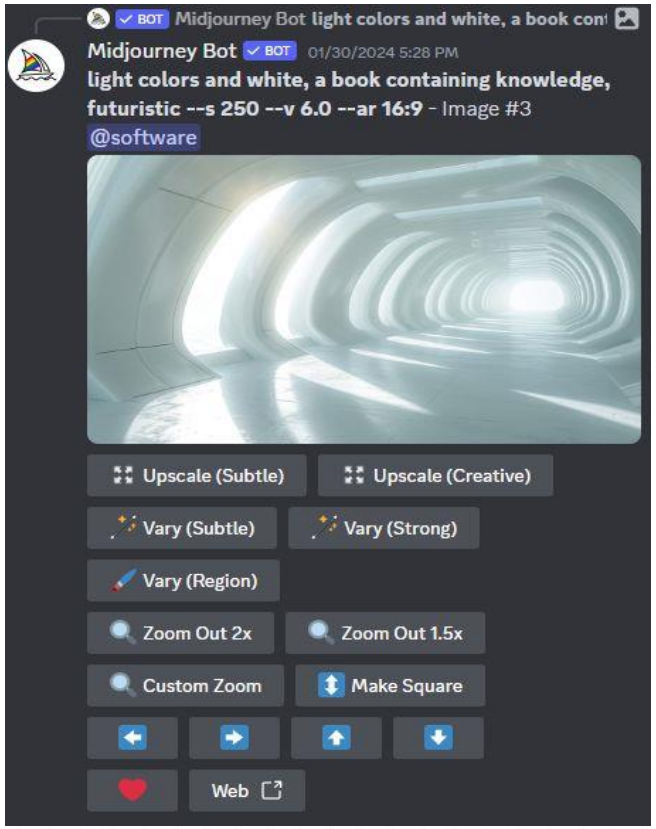
Variations and Upscaling

- Midjourney will provide you 4 image based on your provided prompt. From here, there are a number of actions you can take.

Original Output

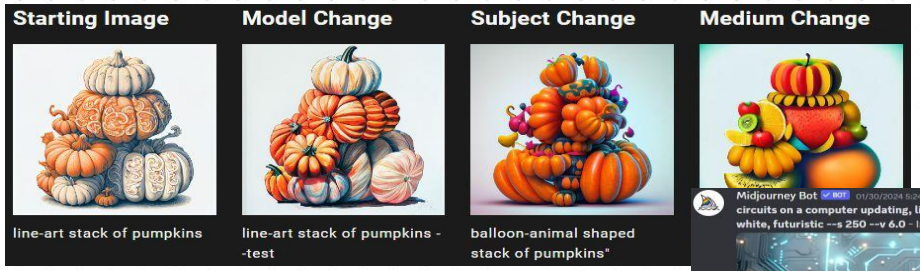
- The 🔄 button will rerun a job with the same prompt, giving a new set of 4 images.
- The "**V(n)**" buttons will generate a new set of images in a similar style to the image you chose.
- The "**U(n)**" buttons are for upscaling and will separate out the chosen image. This is beneficial for easy downloading, as well as editing the image, either by upscaling the image, zooming or panning, which can be seen in the right image.
- You can also favourite images (🖤), which will tag them in your gallery online, making it easier to find the images later ❤️
- 'Web' will open the image in your online gallery

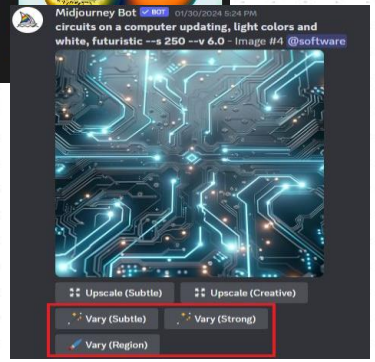
Upscaling Options



Remixing and Region Variation

- Remixing is a tool that allows you to keep the composition of your image the same but change other variables such as the subject matter, model versions used or the medium the image was generated in.
- It comes in 2 modes, **Subtle** and **Strong**, with subtle intended for minor changes to an image, while retaining most of the original composition, while strong is used to change colours, composition and elements in the image.
- In order to use the remix feature, you must first enable remix mode by typing "/prefer remix" in the text channel

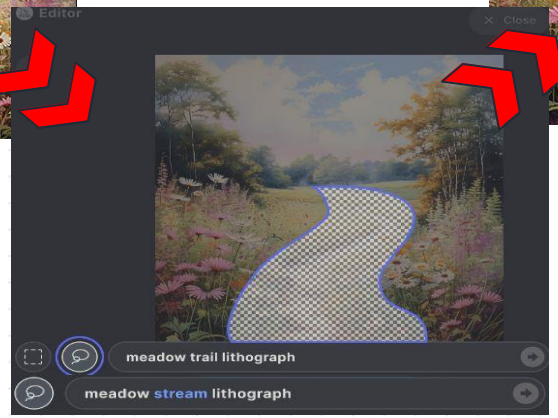




- You can also make changes to a single area of your image, while keeping everything as it was in the original. This is done by using the **Vary (Region)** option. This will allow you to select an area of the image (using preset shapes or freehand drawing) and then adjust your prompt, which will change that specifically chosen area.

Original Image

Region Selection & Prompt Adjustment



Remixed Image

Prompt Engineering

Prompt Writing Overview

Watch this if you have not already - How to Prompt

Writing Effective Image Prompts for AI Imagery
Creating compelling and effective image prompts for AI imagery is an art that combines clarity, creativity, and specificity. Here's a guide to crafting prompts that yield the best results:

Be Descriptive: Start by clearly describing the main subject of your image. Include details like appearance, color, size, and any distinctive features. The more vivid your description, the closer the resulting image will be to your vision.

Set the Scene: Contextualize your subject within a setting. Describe the environment - is it indoors or outdoors, natural or urban? Include elements like weather, time of day, and atmosphere to add depth to your scene.

Consider Composition: Think about the layout of your image. Do you want a close-up, a wide-angle view, or something in between? Specify where the main subject should be positioned within the frame and how other elements relate to it.

Incorporate Action: If you want to capture movement or emotion, describe the action or mood. This can bring dynamism to your image and make it more engaging.

Balance Creativity with Feasibility: While AI can generate fantastical images, overly complex or contradictory descriptions might confuse the algorithm. Keep your prompt imaginative yet coherent.

Use Analogies and References: If you're aiming for a style or theme, reference known artworks, historical periods, or cinematic styles. Be careful with direct references to copyrighted or very specific styles.

Revise and Refine: Don’t hesitate to tweak your prompt for clarity or to add/remove details. Sometimes, a small adjustment can make a big difference in the final output.

Test and Learn: Experiment with different styles and descriptions. Over time, you’ll get a sense of what works best with the AI you are using.

Remember, the key to a successful AI-generated image lies in how effectively you communicate your vision through your prompt. Happy prompting!