**We will look into three image generation models**

|  | Native platform | Third party interface? | Best for |
|---|---|---|---|
| **Midjourney** | Discord | No | Photos |
| **Dall-E** | OpenAI website | Yes | Various |
| **Stable Diffusion** | Local machine | Yes | Art, illustrations |
| **Imagen (beta)** | Google | N/A | N/A |

# Midjourney

Discord is the only place it can be used….for now

Setting up discord and logging in

Creating server and working with Midjourney Bot

Basic prompting

# /Commands

## /subscribe

Generate a personal link for a user's account page.

## /info

View information about your account and any queued or running jobs.

## /ask

Get an answer to a question.

## /settings

View and adjust the Midjourney Bot's settings

# /imagine

Generate an image using a prompt

Full command list: https://docs.midjourney.com/docs/command-list

## --Parameters

## Aspect Ratios

`--aspect`, or `--ar` Change the aspect ratio of a generation.

## No

`--no` Negative prompting, `--no plants` would try to remove plants from the image.

## Chaos

`--chaos <number 0-100>` Change how varied the results will be. Higher values produce more unusual and unexpected generations.

## Stylize

`--stylize <number>`, or `--s <number>` parameter influences how strongly Midjourney's default aesthetic style is applied to Jobs.

## Weird

`--Weird <number 0-3000>` Explore unusual aesthetics with the experimental `--weird` parameter.

## Tile

`--tile` parameter generates images that can be used as repeating tiles to create seamless patterns.

## Quality

`--quality <.25, .5, or 1>`, or `--q <.25, .5, or 1>` How much rendering quality time you want to spend. The default value is 1. Higher values use more GPU minutes; lower values use less.

# Repeat

`--repeat <1-40>`, or `--r <1-40>` Create multiple Jobs from a single prompt. `--repeat` is useful for quickly rerunning a job multiple times.

# Seed

`--seed <integer between 0-4294967295>` 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.

Full parameters list: https://docs.midjourney.com/docs/parameter-list

## Advanced

# /blend

Easily blend two images together.

# /describe

Writes four example prompts based on an image you upload.

Reverse process: describe an image https://www.astica.org/vision/describe/

# Image Weight

`--iw <0-2>` Sets image prompt weight relative to text weight. The default value is 1.

# 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.*

# Vary Region + Remix

Light

*Combine [Remix Mode](#) and the Midjourney Vary Region editor to select and regenerate specific parts of an upscaled image using a new or modified prompt.*

## Midjourney Inpainting vs. Photoshop Generative Fill

https://twitter.com/ciguleva/status/1694204732934627832

# Zoom Out

Light

*The Zoom Out option allows you to extend the canvas of an upscaled image beyond its original boundaries without changing the content of the original image. The newly expanded canvas will be filled-in using guidance from the prompt and the original image.*

Tips:

Bot does not understand grammar, sentence structure, or words like humans. Word choice also matters. More specific synonyms work better in many circumstances. Instead of big, try gigantic, enormous, or immense. Remove words when possible.

fewer words mean each word has a more powerful influence.

Use commas, brackets, and hyphens to help organize your thoughts, but know the Midjourney Bot will not reliably interpret them.

The Midjourney Bot does not consider capitalization.

 If you ask for a party with "no cake," your image will probably include a cake. If you want to ensure an object is not in the final image, try advance prompting using the --no parameter.

**Try to be clear about any context or details that are important to you. Think about:**

- **Subject:** person, animal, character, location, object, etc.
- **Medium:** photo, painting, illustration, sculpture, doodle, tapestry, etc.
- **Environment:** indoors, outdoors, on the moon, in Narnia, underwater, the Emerald City, etc.
- **Lighting:** soft, ambient, overcast, neon, studio lights, etc
- **Color:** vibrant, muted, bright, monochromatic, colorful, black and white, pastel, etc.
- **Mood:** Sedate, calm, raucous, energetic, etc.
- **Composition:** Portrait, headshot, closeup, birds-eye view, etc.

# Styles: https://docs.midjourney.com/docs/explore-prompting
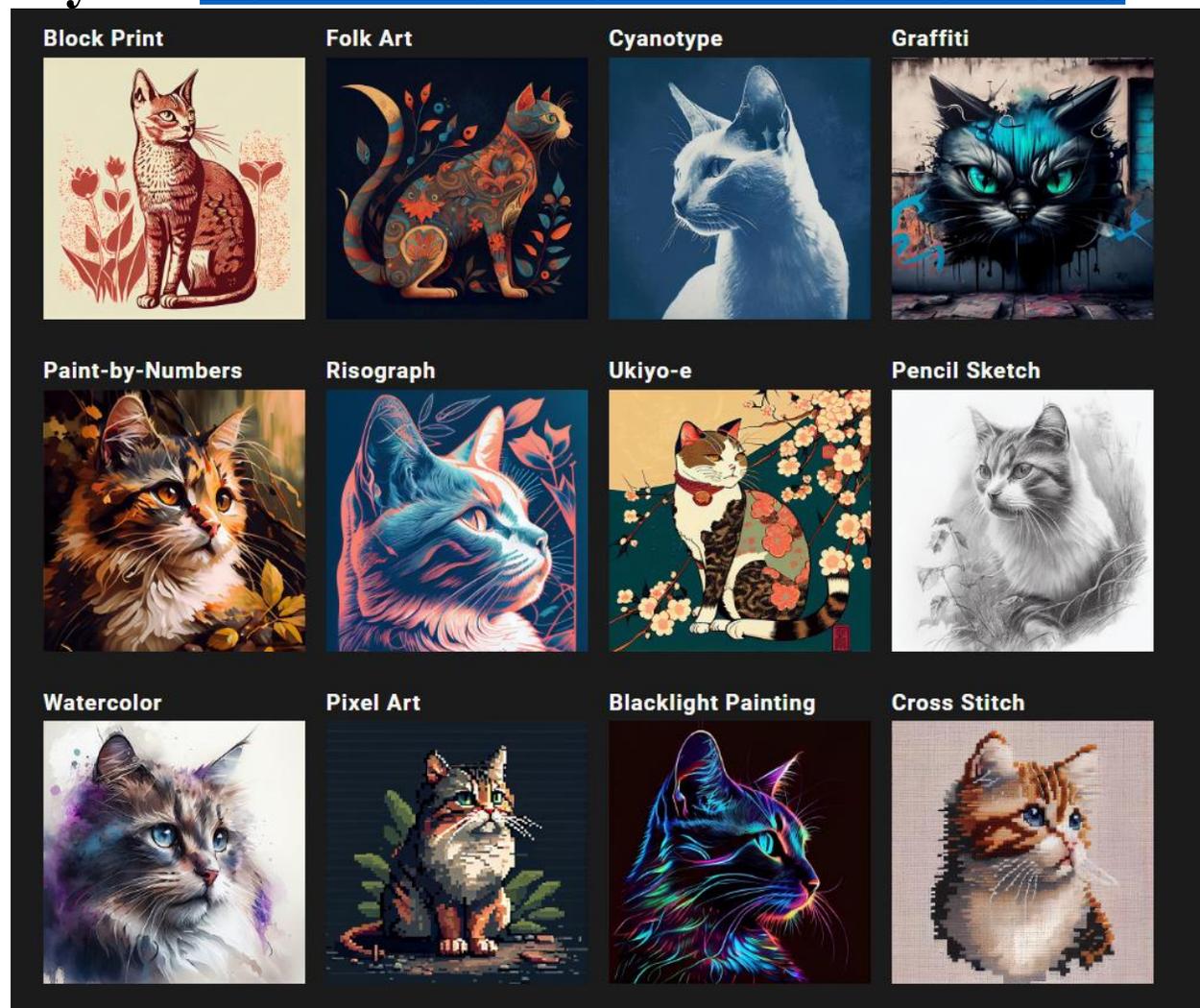
# Dall-E

Native platform is OpenAI website (that of ChatGPT)

It is paid so I won't be able to show you on OpenAI

But we can use third party app

# Stable Diffusion

Native way is to install and run in local machine

But mostly third party websites are used

Open source model, many variations exist on top of the original SDXL (current version)

Openart.ai is the website I use

Running SDXL on local machine: https://www.youtube.com/watch?v=maoI20euzVk

**HOW DIFFUSION MODELS CREATE UNIQUE IMAGES: HIGH-LEVEL OVERVIEW**

Diffusion models are tools (like Midjourney) used to generate images from random noise. Here's a simple explanation of how they work:



**1. Starting with Random Noise**

These models begin with what can be described as static, or random noise. This noise serves as the initial point for the image creation.

**2. Understanding the Process of Adding Noise**

Imagine you have a clear picture, like a photograph of a cat. If you add more and more noise to this picture, it becomes less clear. This process is known as diffusion.

**3. Reversing the Process to Create Images**

The core of the diffusion model is reversing the above process:

a. The model looks at the noisy image and figures out how to make it slightly clearer.

b. It repeats this step until a recognizable image is formed.

4. Training the Model

To enable the model to turn noise into images, it needs to be trained. This is done by showing the model many pictures to help it learn the patterns, and by employing advanced math to produce similar images.

**5. Generating Different Images**

Since the starting noise is random, the images produced by the model vary each time. Additionally, the model makes predictions based on this noise at every step, guiding the image's formation. It's akin to having unique building blocks and a new blueprint each time you want to construct something.

Therefore, the diffusion model doesn't work like a collage from sample images; instead, it relies heavily on mathematics.

SDXL video

https://www.youtube.com/watch?v=maoI20euzVk