



Documentation

Aify is a Unity Editor's Extension that enables you to convert text to images, generate AI depth maps, and deliver copyright-free textures, normal maps and specular maps. This service is devoid of subscriptions or repetitive payments. This documentation will help you get started with using the extension and provide information on how to use the asset to its best capacity.

Note: All the artwork you see in this documentation has been AI generated unless stated otherwise

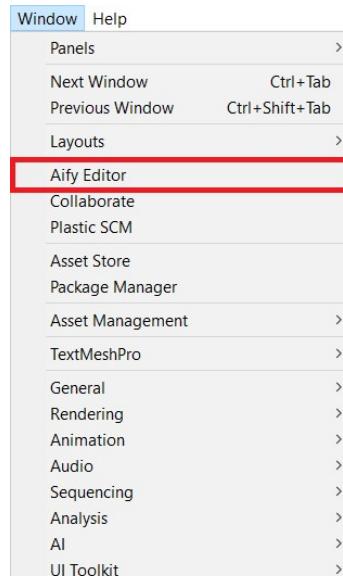
Dependencies

This asset requires the external package Barracuda 3.0.0 which can be found in Window > Package Manager > Barracuda.

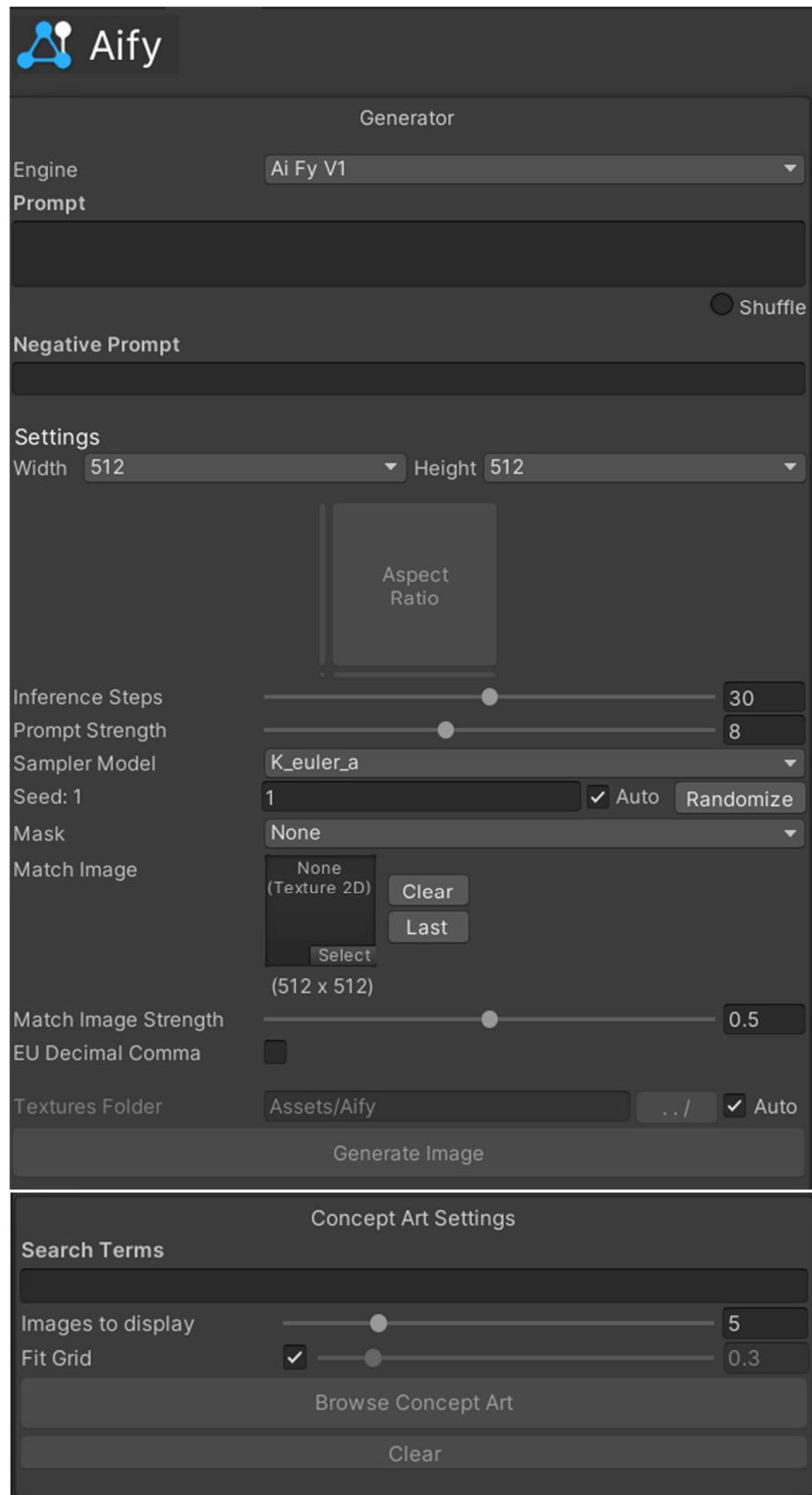
Barracuda is lightweight and cross-platform Neural Net inference library. Barracuda supports inference both on GPU and CPU.

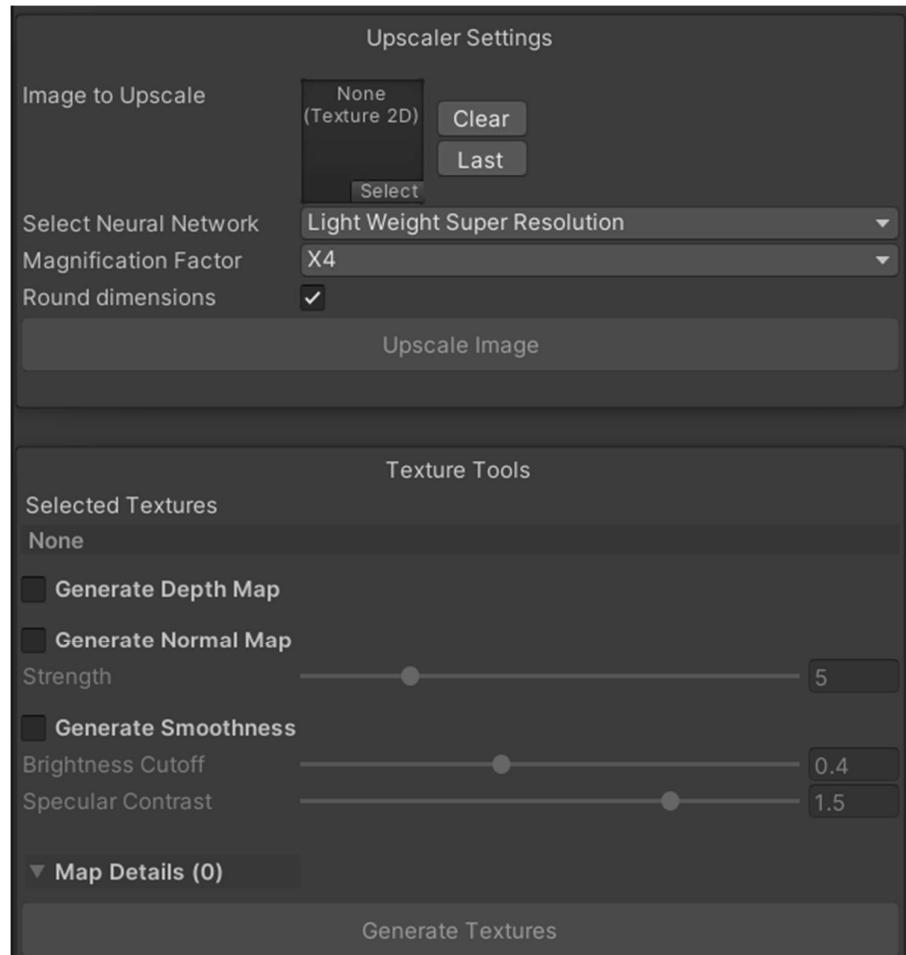
Usage

To use the Editor's Extension please go to Window > Aify



Editor Graphical Interface:



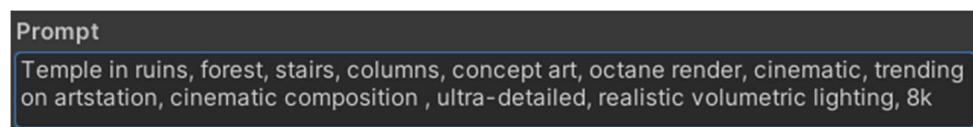


Features

Engines: This extension offers 4 engines at the moment which are trained differently and are based on different diffusion models and LoRAs (low ranked adaption)

- ✚ AiFy V1 based on SD 1.5
- ✚ AiFy V2 based on SD 2.0
- ✚ AiFy V2_1 based on SD 2.1
- ✚ AiFy XL based on SDXL Beta

Prompts: The Extension service allows you to convert text to images. To use this feature, simply enter the text you want to convert in the "Prompts" field.



Result:



Prompt: Temple in ruins, forest, stairs, columns, concept art, octane render, cinematic, trending on artstation, cinematic composition, ultra-detailed, realistic volumetric lighting, 8k. Other Settings: Default. Seed: 1

Negative Prompting: With negative prompting, you can exclude certain undesirable parts from the image to customize it. The text inside the negative prompt excludes (or tries its best to exclude) the object from the generated image.

Without Negative Prompt:

Prompt
interior design, open plan, kitchen and living room, modular furniture with cotton textiles, wooden floor, high ceiling, large steel windows viewing a city
Negative Prompt
[Empty input field]

Result:



Prompt: interior design, open plan, kitchen and living room, modular furniture with cotton textiles, wooden floor, high ceiling, large steel windows viewing a city. Other Settings: Default. Seed: 440829

With Negative Prompt

Prompt
interior design, open plan, kitchen and living room, modular furniture with cotton textiles, wooden floor, high ceiling, large steel windows viewing a city
Negative Prompt
sofa

Result:



*Prompt: interior design, open plan, kitchen and living room, modular furniture with cotton textiles, wooden floor, high ceiling, large steel windows viewing a city. Negative Prompt: Sofa
Other Settings: Default. Seed: 440829*

Dimensions (Height and Width): Default: 512 x 512 (highest). The minimum useful sizes are 192-256 in one dimension. Also can be used to set the aspect ratio. As of now, the model is only capable of generating images that are a maximum of 512 x 512 in size. This is likely to change as we acquire more funding. The image can be later upscaled using our super-resolution models given in the asset to increase the size of the image to 4k or 8k using AI given in the Post Processing Settings.

Steps: Number of steps of redefinition performed on the prompt. Default is 30 which provides a balance in speed and accuracy.

Cfg Scale: The CFG setting determines the level of adherence of the engine's output to the provided prompt.

Sampler Model: The sampler model refers to minor differences in training data. The available samplers are:

- ⊕ k_euler,
- ⊕ k_euler_a,
- ⊕ k_lms,
- ⊕ ddim,
- ⊕ plms,

- k_huen,
- k_euler_ancestral,
- k_dpm_2_ancestral,
- k_dpmpp_2s_ancestral,
- k_dpmpp_2m

Seed: Seed for random latent noise generation. It is deterministic which means the same seed will give the same image if all the other parameters are the same. Default value is 1. Auto Boolean randomizes the seed when Generate Image is clicked. Randomize variable randomizes the seed on demand. It also sets the name of the texture so it is unique. If auto is deselected, then the image overwrites which is sometimes desirable and convenient. If this does not suit you, please rename the texture before clicking on generate if auto is false.

Match Image: Instead of random noise, an image is used to guide the generation process. This results in an image like the one specified.

Match Image Strength: The Haziness (lower values) or the aggressiveness (higher values) of the initial noise generation. Determines how closely the image is matched.

Example:

Prompt: *Detailed manga illustration character full body portrait of a dark-haired cyborg anime man who has a red mechanical eye and is wearing a cape*



 Aify

Prompt
Scary red helmet neon eyes dragon sharp detailed dramatic lighting octane render 8k

Negative Prompt

Settings

Dimensions: X 512 Y 512

Inference Steps: 30

Cfg Scale: 8

Sampler Model: K_euler_a

Seed: 1 Auto Randomize

Match Image:  Select Clear Last

Match Image Strength: 0.5

Textures Folder: Assets/Aify Auto

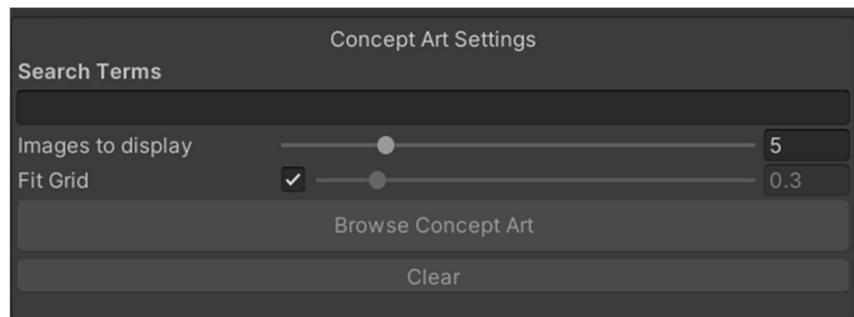
Result



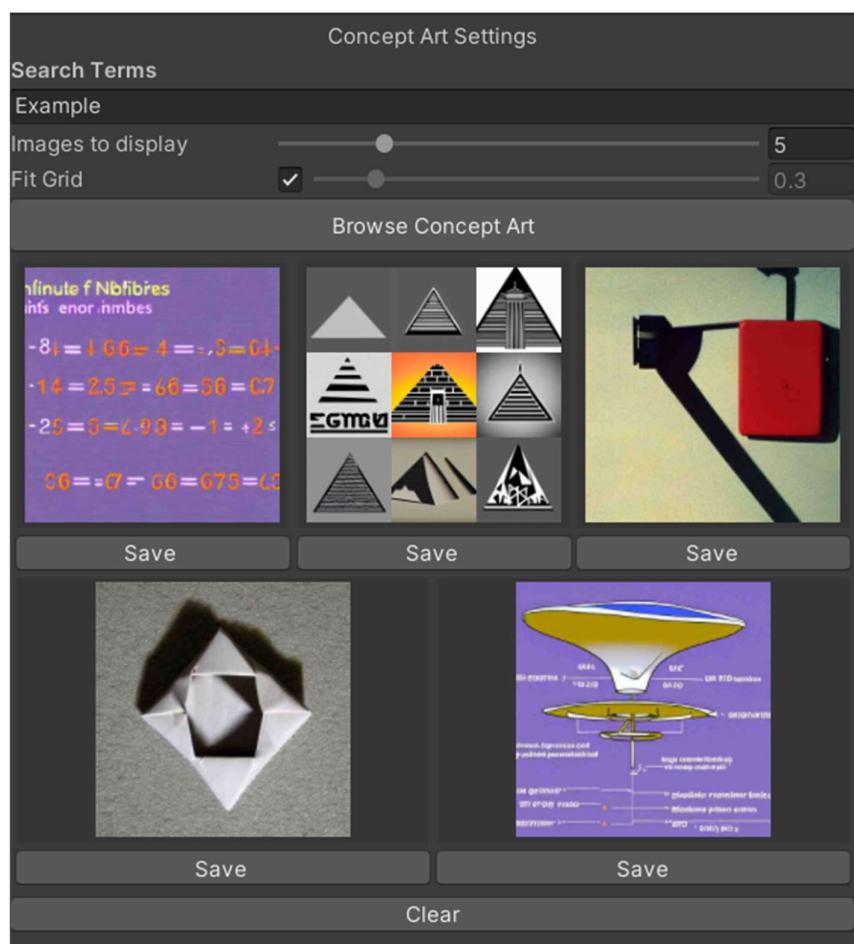
Match Image feature is also limited to a size in the multiples of 64*

Textures Folder: Specifies which folder to save the textures in.

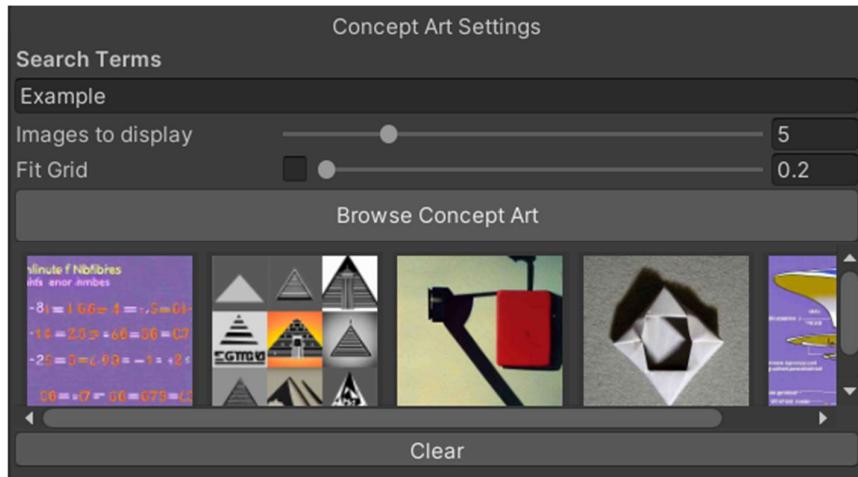
Concept Art Settings



The concept art browser is a library of open-source AI generated images.

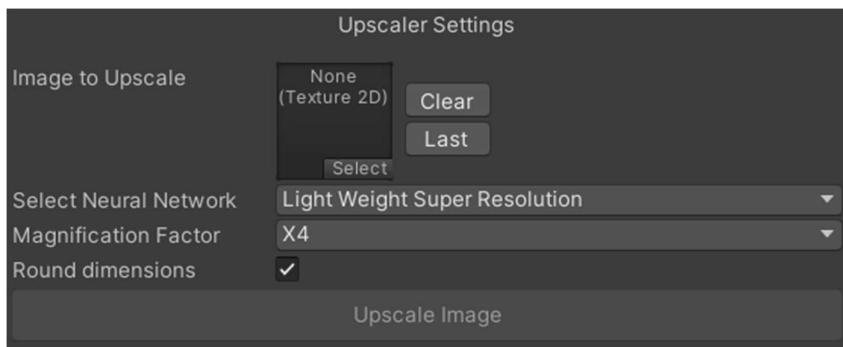


The user can generate up to 20 images at a time and save them to local disk. Browsing in a more compact horizontal list manner is also supported.

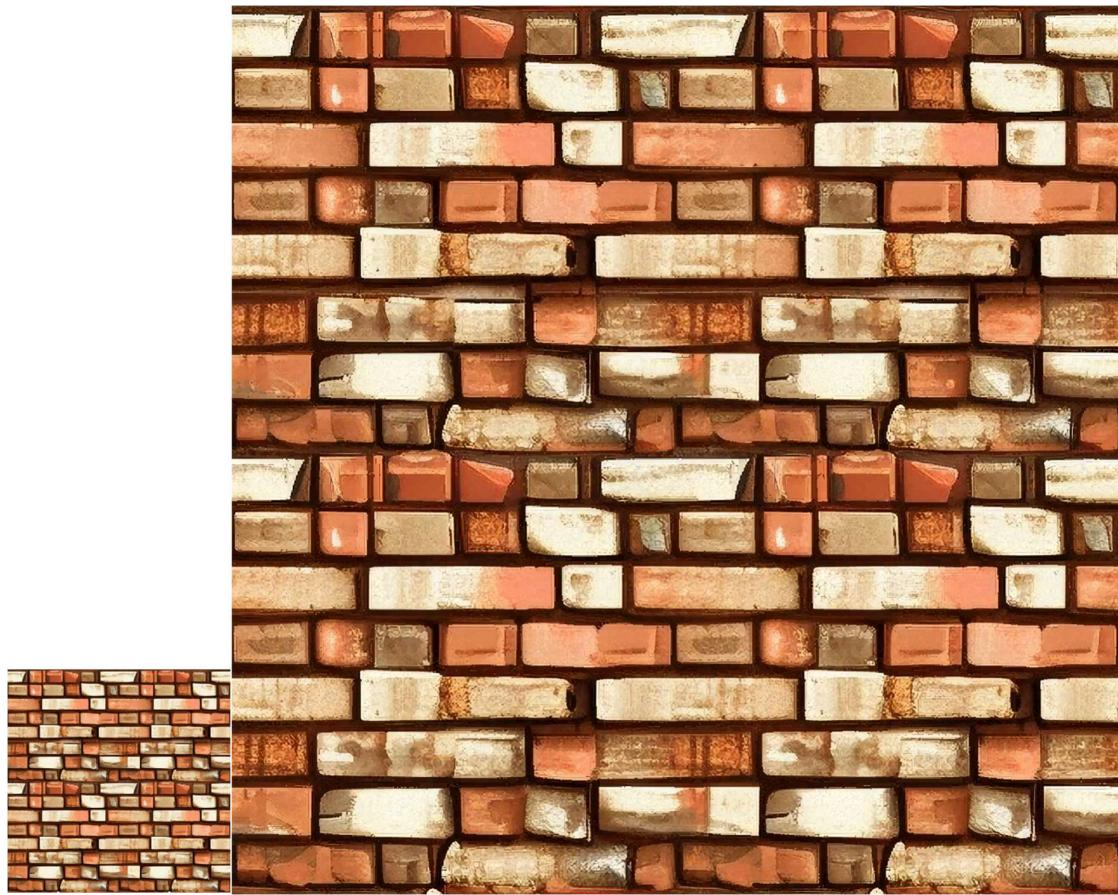


Upscaler Settings

To use post processing settings, select a texture or multiple textures and enable the post process group/s you want for the texture and click on “Generate Textures” button. Please save your project before trying to upscale textures. Textures higher in resolution than 1024x1024 are currently not supported.



Upscale Textures: The AI Model can upscale your textures to 2048x2048 or 4096x4096. Three neural Network models are used, ESRGAN, Light Weight Super Resolution and Heavy Weight Super resolution. These are models trained with a dataset containing low- and high-resolution images. The LWSR and HWSR work inside unity through Barracuda library which provides the ability to infer on python derivative models. The ESRGAN model uses our servers to upscale the texture by 2X each time. You can perform the upscale operation twice to reach a resolution of 2048x2048 from a 512x512 raw image. Textures over 1024x1024 or 1048576 pixels in total are not yet supported. Using a certain aspect ratio is not a limitation. One can upscale resolution of any aspect ratio as long as they are under 1048576 pixels in total.

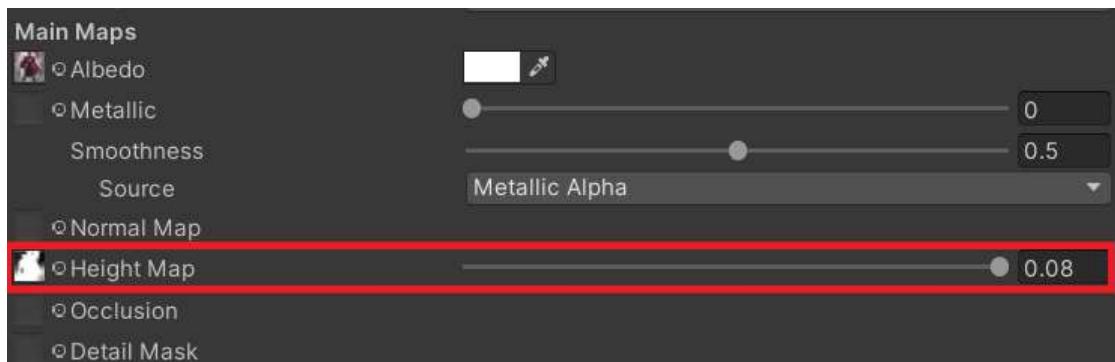


Size Comparison (True Ratio) (Left) Brick Texture 512 x 512 (Right) 2048 x 2048

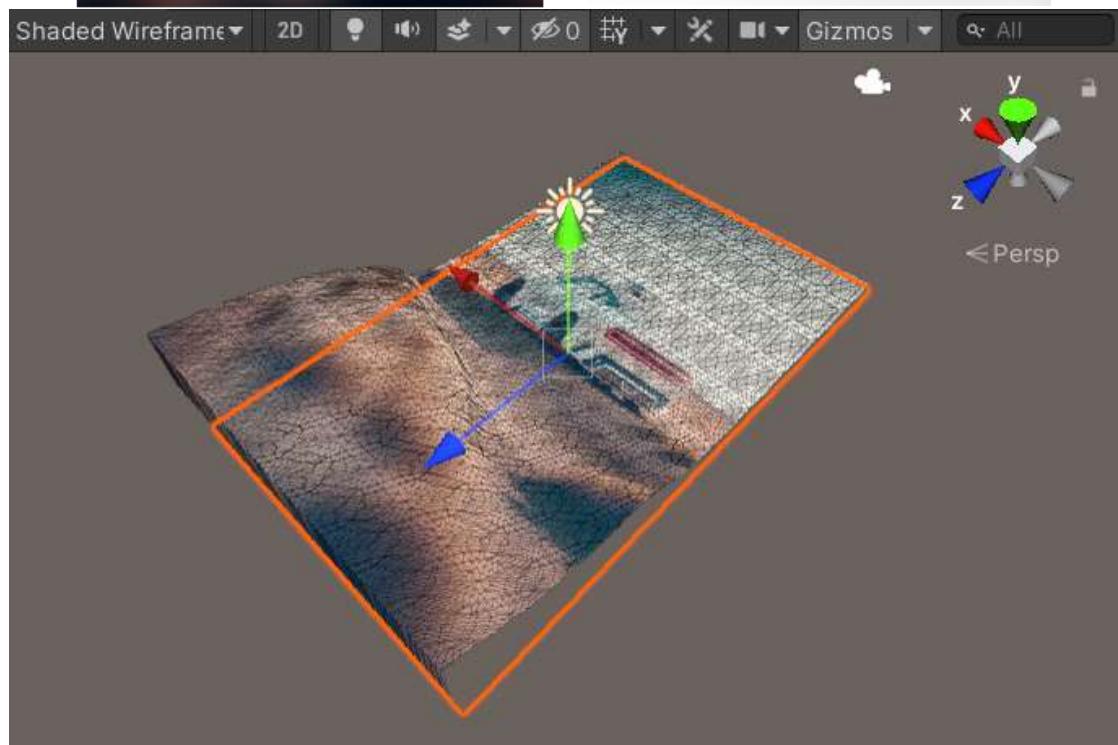
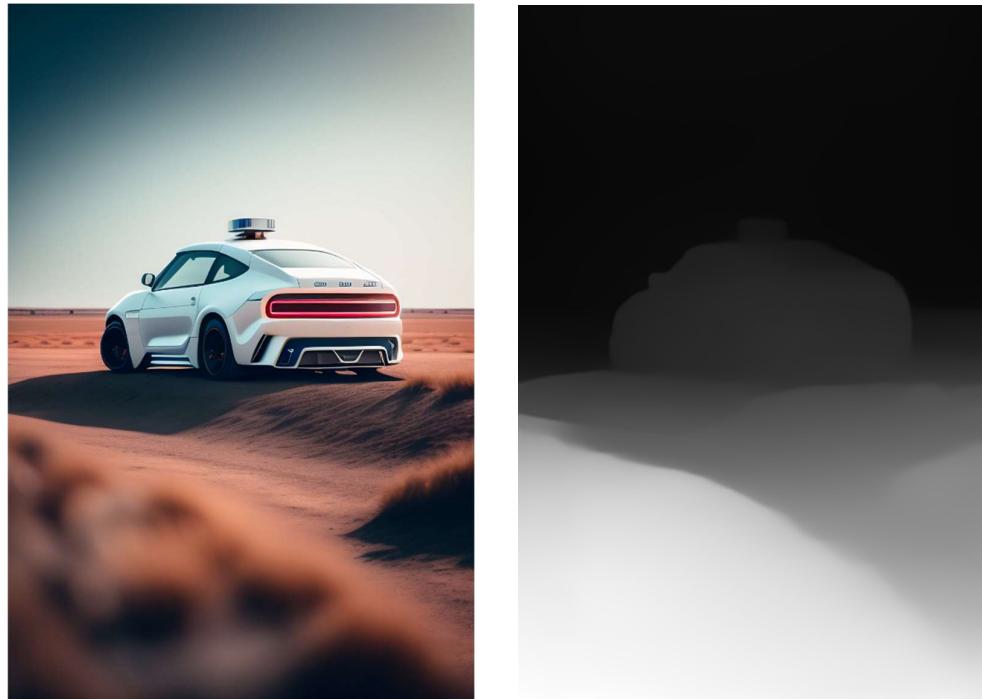
AI-based Depth Maps: The AI Model can also generate AI-based depth maps for images, allowing you to create 3D content from them. The backend uses a pretrained MiDaS model to calculate depth.

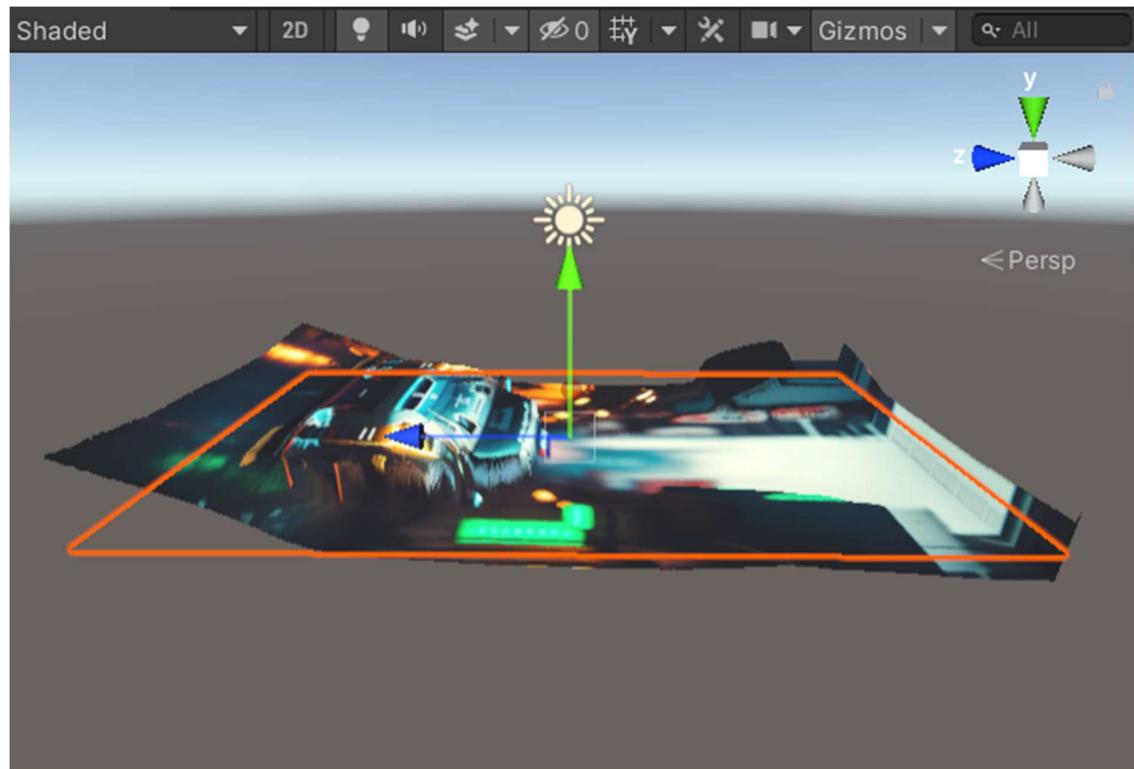
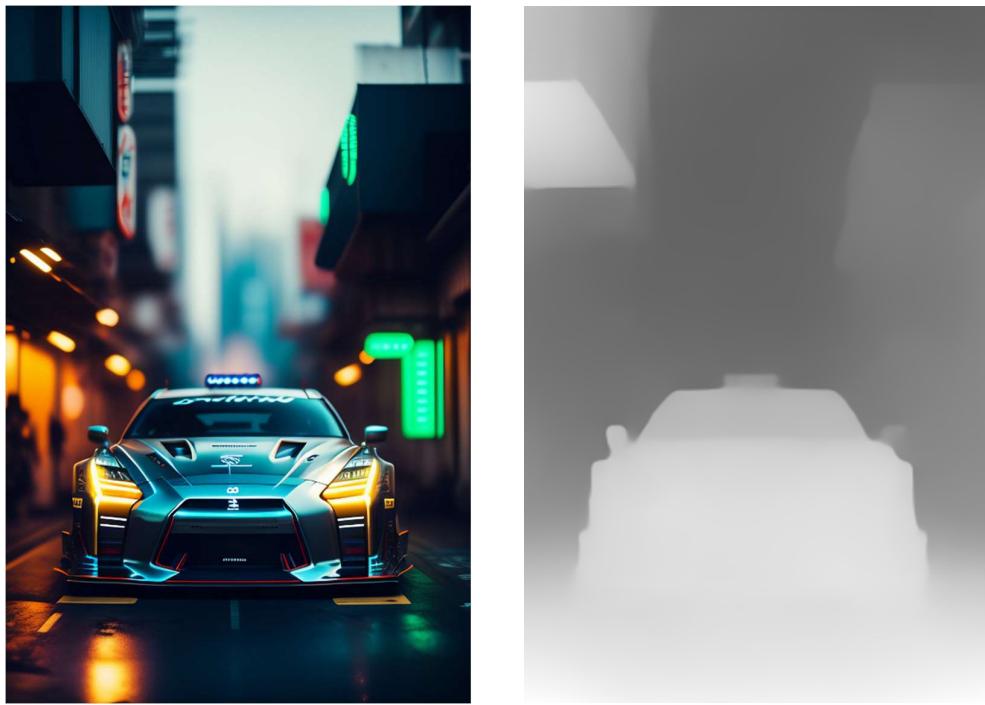
These maps can be used for the following:

- 1) Displacement: Displacement maps physically displace the mesh to which they are applied. This can be performed using the Height Map setting in the shader



Tessellated Extrusion based on Depth with special shaders:





Normal Maps and Smoothness Maps: The asset can also generate normal maps and smoothness maps for your textures. This is beneficial if you generate a seamless texture from the Aify Prompt.

Uses and Applications

Rough sketches: Empowers game developers to bring their vision to life by transforming a rough sketch from an artist into stunning game art. With this extension, developers

can easily import sketches into the editor and use a variety of powerful tools to refine and enhance the artwork. One of the key features of this editor's extension is Image to Image translation and looping which can create incredible results.

Rough Sketch:



Match Image Feedback Loop:



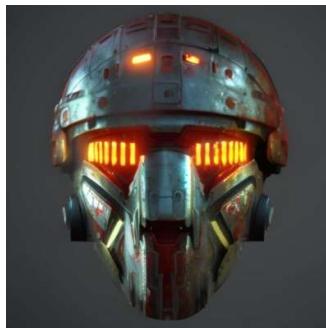
1st Iteration



2nd Iteration



3rd Iteration



4th Iteration

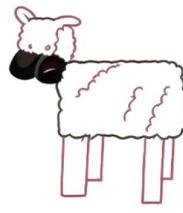


5th Iteration



6th Iteration

Rough Sketch:



Match Image Feedback Loop:



1st Iteration



2nd Iteration



3rd Iteration



4th Iteration

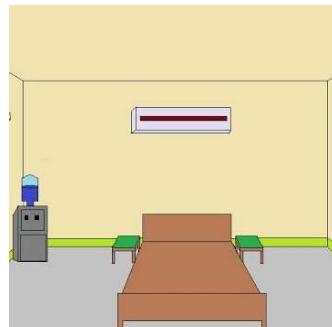


5th Iteration

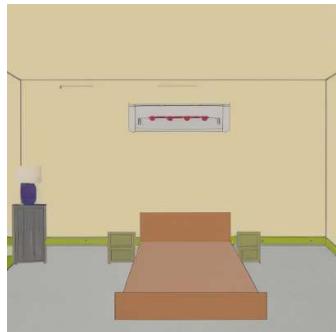


6th Iteration

Rough Sketch



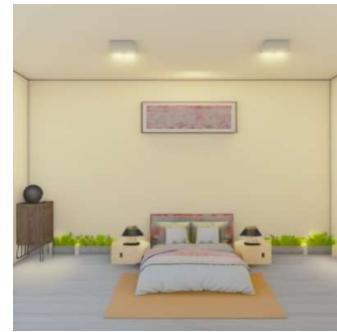
Match Image Feedback Loop:



1st Iteration



2nd Iteration



3rd Iteration



4th Iteration



5th Iteration



6th Iteration

Re-Texture and Re-Master games

Re texturing can be easily done using this tool as it not only can enhance your textures but also create new ones copy right free. Moreover, you can even generate normal, smoothness and displacement maps from the image.

Examples of AI Generated Textures by Aify





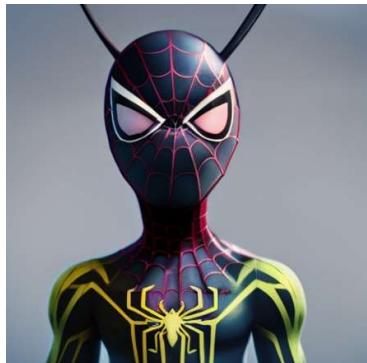
- Re-master Games with new textures and materials



Concept Remaster of an interior design from Minecraft

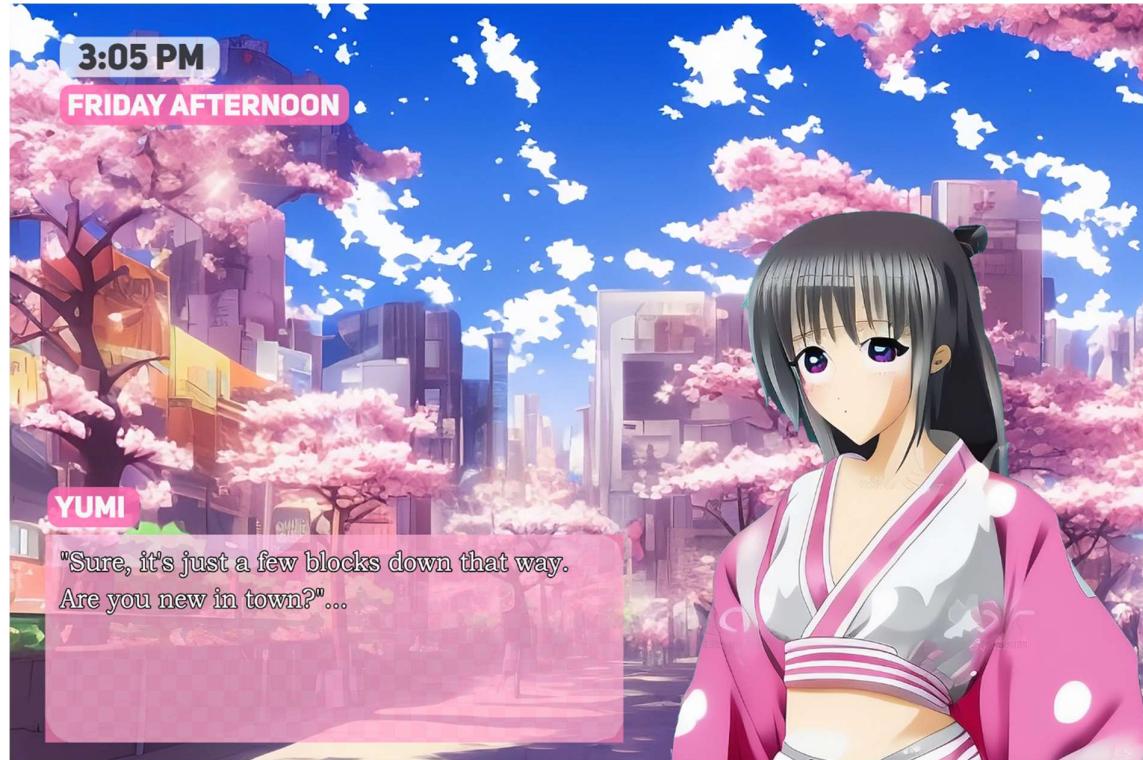
- Mix and match different styles

Create artwork, concept designs, character design, mockups and much more!



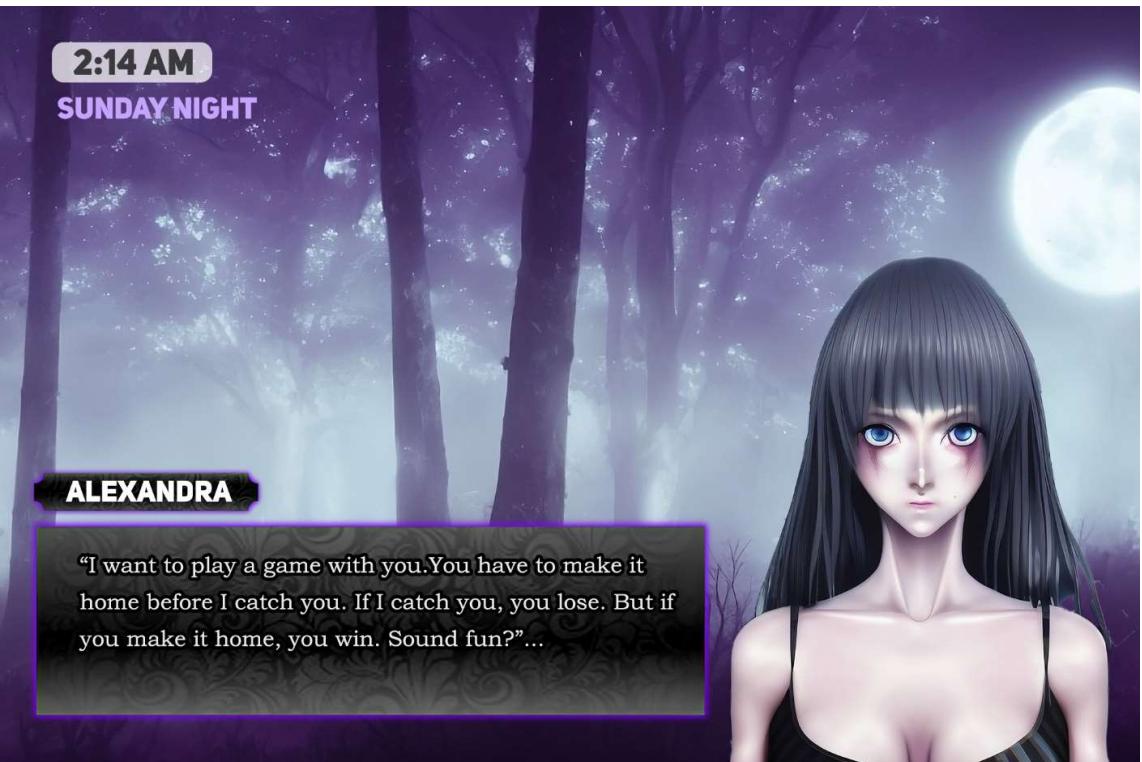
Hybrid art styles to help in character design.

- Create Backgrounds and Characters for Visual Novel Games



- Different Expressions:





- Create icons and game art limitlessly with different prompts and settings.



Keeping it all in the editor

Keeping all assets in one workspace inside the Editor and having to switch to fewer services can have several benefits, such as:

Improved Efficiency: When all assets are located in one workspace, it becomes easier to access and manage them. Users *do not have to spend time* switching between different services or applications, which can be time-consuming and lead to a loss of productivity.

Streamlined Workflow: Having all assets in one workspace can help create a more streamlined workflow. This is because users can easily move between different assets, such as code files, images, and documents, without having to navigate between different services. This can help to *speed up the development process* and make it more efficient.

Reduced Complexity: Using fewer services can help to reduce the complexity of the development process.

Troubleshooting

If you see the network errors:

500: Internal Server error / Cannot connect to destination host

Possible causes:

If you are using Match Image feature and you use the decimal comma (example 1.234,56), please check the **EU decimal comma** option. This should hopefully resolve the error.

There may be times that the server is down. In this unlikely event, please check the forum for announcements by us pertaining to server maintenance or contact info@aikodex.com if this issue persists for over a day.

Please check your internet connection and try again in a few hours.

400: Bad Request

Possible Causes

Occurs when the information passed is not recognized either due to syntax error or other reasons. Also possible if the file format is unrecognized in Match Image (.tiff or .psd). Please send us an email with the Unity version included outlining your issue in as much detail. A screenshot or video of the problem will help us serve you better.

- 1) If you see the error “**There was an error in generating the image. Please try again. If this problem persists, please check the documentation.**”
 - If you are not connected to the internet, this service will not work. This is due to the fact that this is a server run service which requires to access the high-end computation for inferences of the prompts.
 - Another possible cause is that you may have accidentally tipped off the NSFW flag which prevents obscene images from being generated.
- 2) If you see a blurred Image, it is likely that it is a mildly obscene image.
- 3) If you see the error “**There was an error in generating the depth map. Please check your internet connection and try again.**”
This error may be due to the image size being too high to process. Please resize the image to under 1k for optimal performance. Depth Maps do not need an extremely high resolution to work.

[Privacy, legal terms and misuse of service](#)

At AiKodex, we believe that protecting the privacy of our users is of utmost importance. We provide a secure and private environment for users to utilize our Image Generation services, without compromising on their privacy.

Our privacy policy is designed to ensure that we do not store any data or personal information that is shared between users and our service. We do not store prompts, images, IP addresses or any other data, and our remote servers are configured to automatically delete any data that is left on the system.

We understand that privacy is a fundamental right, and we are committed to upholding this right for our users. We will continue to invest in the latest technologies and security measures to ensure that our users can enjoy a safe and private experience with Aify.

Prohibited Activities and misuse: You shall not use these services, data or content provided by Aify in any manner that is illegal, unethical, or inconsistent with the intended use of the service. You may not abuse the server by overloading requests on it or using the service from outside Unity. This may lead to termination of service.

[Prompting Guidelines](#)

For those who are new to AI image generation and prompt engineering and may be feeling lost, a warm welcome is extended. Writing prompts for artificial intelligences can be a daunting task, as everything can feel overwhelming and unfamiliar. However, fear not, as a comprehensive Ai.Fy prompt guide has been created to address these concerns.

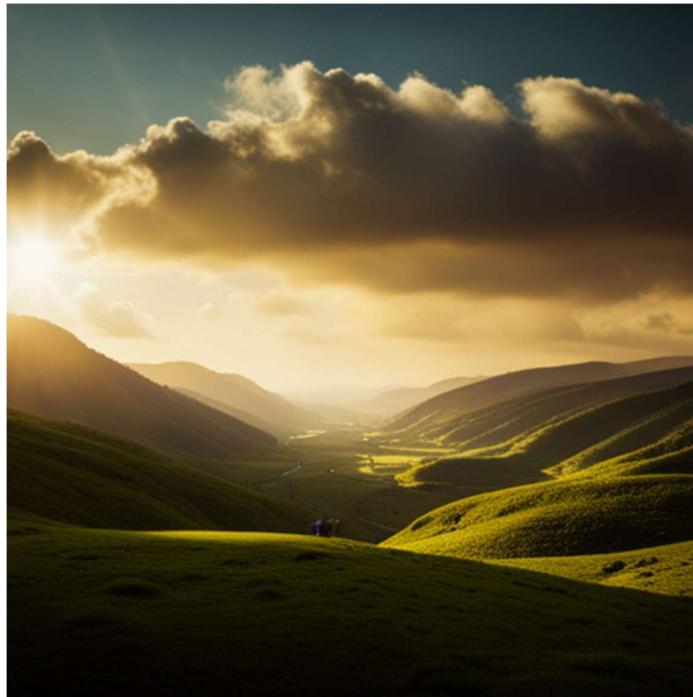
This guide contains everything that one needs to know to progress from absolute zero to creating amazing images, including Ai.Fy tips and plenty of examples. We aim to make the prompting experience as enjoyable and stress-free as possible.



For those who are new to this field, they can sit back, relax and enjoy their prompting experience with the help of this guide.

Let's delve right into the topic. For those who have picked Ai.Fy and have a specific idea in mind for it to capture, it can be quite frustrating when the generated output is not what was expected. Despite seeing impressive images produced by others, one may wonder why their own attempts have been unsuccessful.

It's a common problem, and one that can be easily fixed. For example, if the prompt written is "a green valley with mountains at the back", without specifying any other details, it's considered a raw prompt. The crucial thing to remember is that Ai.Fy is not yet capable of mind-reading, and it's essential to convey the desired output precisely.



To illustrate, let's take the example of the song "Despacito," which was a global phenomenon a few years ago. The lyrics were incomprehensible to those who didn't speak Spanish, yet everyone sang along to the tune and requested it at every pub. Similarly, when prompting Ai.Fy, the initial output may not be as accurate as desired due to communication difficulties. However, with time and experience, one can learn what and what not to ask Ai.Fy, and eventually, get the desired outcome. Fortunately, that's precisely what this guide aims to help with.



Prompt: Despacito. Settings: 200 generation steps, CFG Scale: 5

General prompting

There are various approaches to prompting Ai.Fy, but there are a few widely accepted methods that everyone uses. One such method is the raw prompt.

As we've discussed before, a raw prompt is the most straightforward way to describe the desired output.

For example, "a dog," "a knight on a horse" or "a hamburger." This is the fundamental building block for any prompt, and many beginners tend to start with raw prompts.



However, it's crucial to keep in mind that generating images solely based on raw prompts can result in random and chaotic outputs. The images produced from raw prompts may not accurately capture the intended idea. It's advisable to supplement raw prompts with additional details to achieve the desired results. The guide aims to provide insights into how to improve the quality of generated images using Ai.Fy.

Style

The style is a critical aspect of any prompt. If a specific style is not specified, Ai.Fy may default to the most common style based on related images (as demonstrated in the example of the "dog" raw prompt).

In some cases, combining a well-chosen style with a raw prompt may suffice, as the style has a significant influence on the generated image right after the raw prompt.

To help with style selection, the guide presents several style options for users to experiment with.

Description

Describing the desired image accurately can be the most challenging aspect of creating a prompt, even more so than selecting a style or raw prompt. The difficulty lies in the fact that one may have a vivid image in their mind but not enough or precise words to describe it. As a result, the generated image may be close to the idea, but not entirely what was envisioned.

Order

To achieve the desired output from Ai.Fy, it is important to consider the order of words in the prompt. The words near the beginning of the prompt are given more weightage than those at the end. It is also recommended to avoid using "very" before any adjective as it is not precise. Instead, using descriptive adjectives is important to define the subject, subject attributes, and environment/scene. Following the structure of content type > description > style > composition can also help in creating a successful prompt. It is essential to specify the type of artwork, such as photograph, drawing, sketch, or 3D render. Exploring different styles and sub-categories like lightning and detail can also help in enhancing the output. Lastly, considering the aspect ratio, camera view, and resolution in the composition can ensure the desired output.

Examples

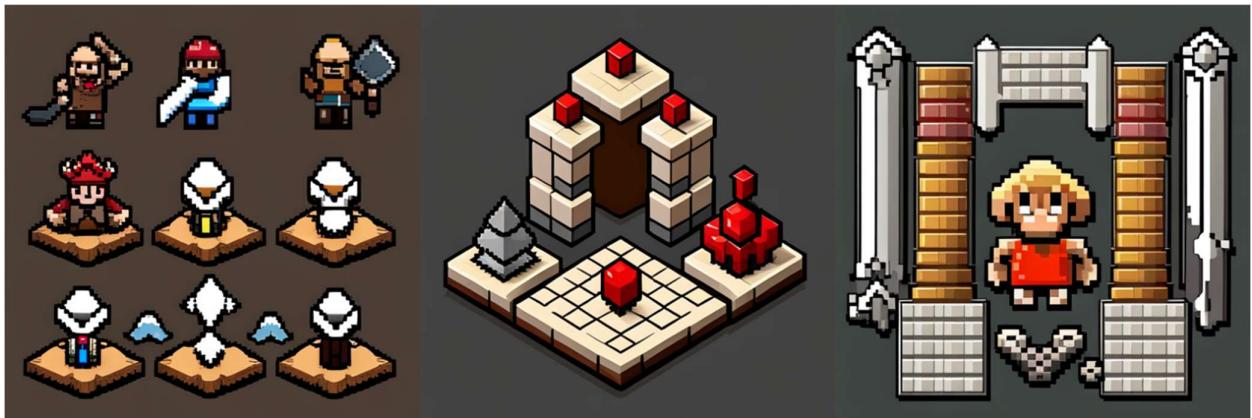
Pixel art



Shopping mall, city, sunshine, pixel art



Japanese classroom scene, wooden table chair, tiled floor, green blackboard, teacher, students, pixel art



Axe, sword, mining, character, various assets, pixel art, 8 bit, game design, sprite sheet



Farm isometric, pixel art, detailed, retro design, green, vibrant



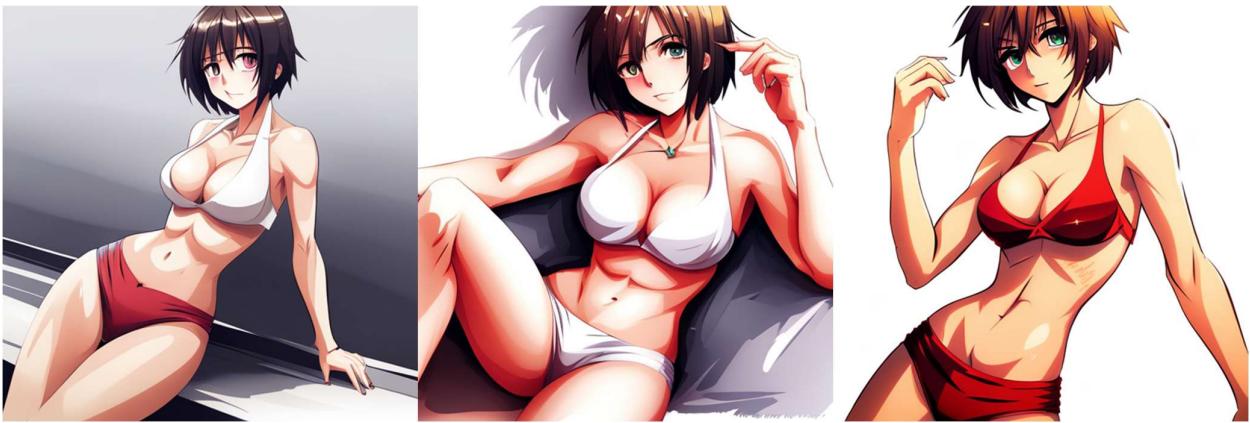
car high speed, intense, dynamic, detailed, cartoon style, wide angled, overhead view, vibrant colors, whimsical, absurd, surreal, fun, isometric, low poly, 123rf, gettyimages, illustrator, photoshop



A fast race car, tuned, modified car, super car, isometric (Variations - Match Image)

Anime





Anime girl, bikini, full body, full chest, curvy, toned abs, minimalistic background, anime waifu, beautiful, good looking girl, anime style, Japanese, manga, otaku



Japanese Beach, blue water, sunny, children, crowded, enjoying, splashes, manga, bright, vibrant, day time, Japan children, 4k

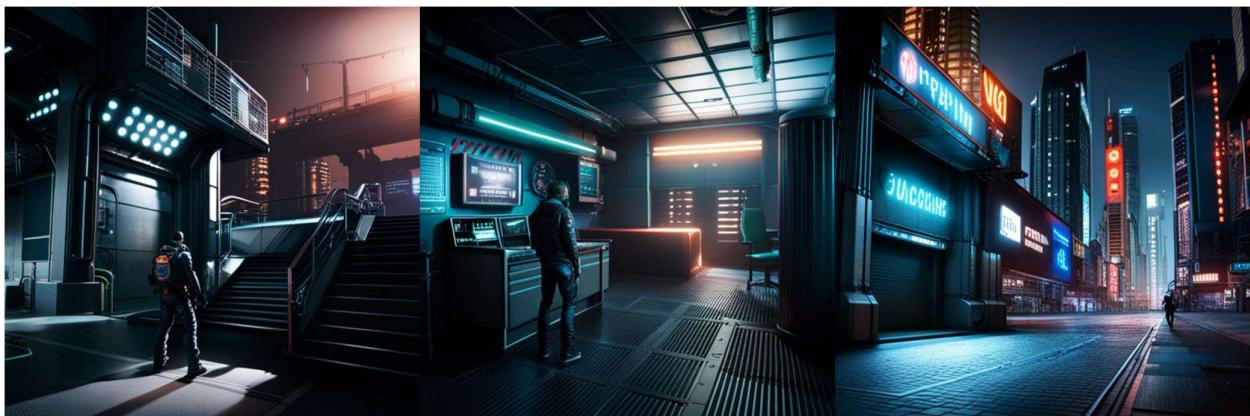
3D Model



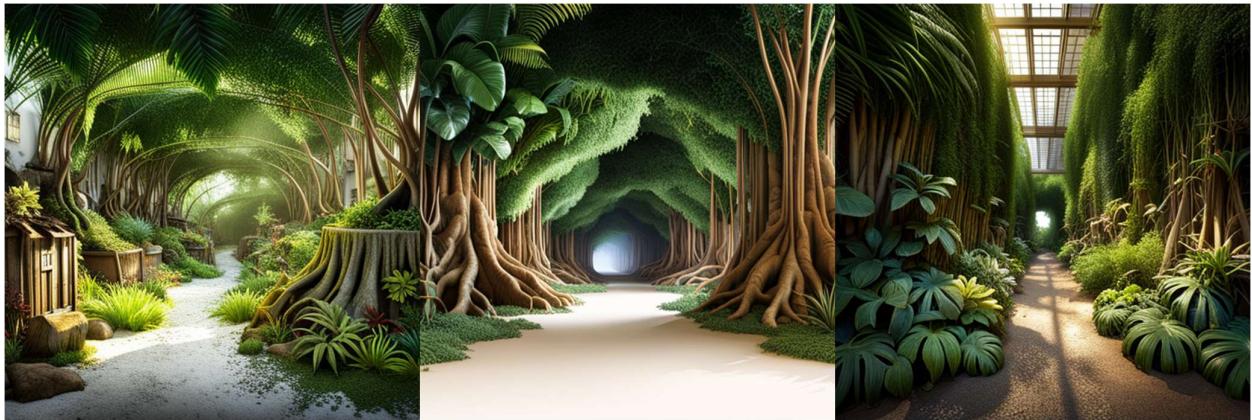
darth vader, standing pose, barren land, greyscale, full body, metallic, render, vray, octane render, 3d model



Vintage sports car with classic curves, captured in a moody, low key light with selective focus on the grille, classic, retro, moody, detailed, 3D model, artstation, blender render, 3ds max render



Game design, cyberpunk style, 3D models



A jungle city, with vines and roots serving as roads and buildings made of leaves, colorful, detailed, natural, tropical

Low Poly



Lonely lighthouse on a rocky coast during a storm, with waves crashing and lightning flashing, moody, atmospheric, seascape, high detail



Powerful sorceress, flowing robes and mystical staff, standing in dark and ominous forest, mysterious, detailed, high detail, fantasy portrait

Photorealistic



Editorial Style Photo, Bonsai Apple Tree, Task Lighting, Inspiring and Awesome, Sunset, Afternoon, Beautiful, Symmetric, 4k



Rustic kitchen with exposed brick wall, reclaimed wood cabinetry, large farmhouse sink, industrial lighting fixtures, antique baking tools on open shelving, cast iron cookware, vintage accents, warm and inviting, detailed textures



Luxurious bathroom with freestanding bathtub, rain shower, heated flooring, marble tiles, brass fixtures, floating vanity with double sink, elegant chandelier, high contrast lighting, spa-like atmosphere, high resolution

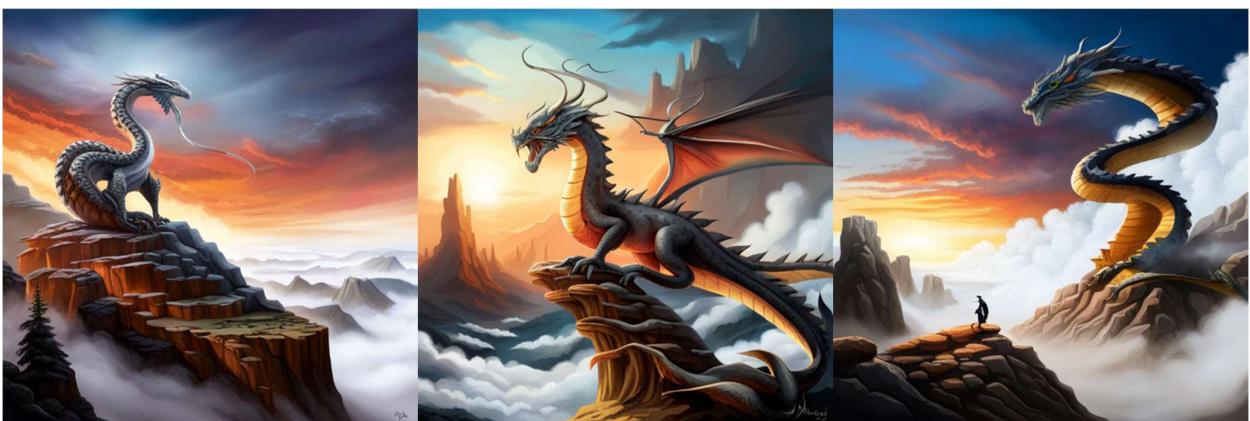


Skilled archer, bow and quiver of arrows, standing in forest clearing, intense, detailed, high detail, portrait

Stylized



A medieval town with disco lights and a fountain, by Josef Thoma, matte painting trending on artstation HQ, concept art



Majestic dragon, perched atop a cliff overlooking a fiery landscape, with smoke and ash rising into the air, intense, detailed, scales, dynamic, epic

Abstract



Fractal landscape of geometric shapes and patterns, complex, intricate, abstract, digital art

Useful terms

Finally, there are some words to improve your prompt, and obviously, the image that is generated. These could be considered as final touches, and you can add as many and as random as you want, but here are a few examples:

Lighting

accent lighting, ambient lighting, backlight, blacklight, blinding light, candlelight, concert lighting, crepuscular rays, direct sunlight, dusk, Edison bulb, electric arc, fire, fluorescent, glowing, glowing radioactively, glow-stick, lava glow, moonlight, natural lighting, neon lamp, nightclub lighting, nuclear waste glow, quantum dot display, spotlight, strobe, sunlight, ultraviolet, dramatic lighting, dark lighting, soft lighting, gloomy.

Detail

highly detailed, grainy, realistic, unreal engine, octane render, bokeh, vray, houdini render, quixel megascans, depth of field (or dof), arnold render, 8k uhd, raytracing, cgi, lumen reflections, cgsociety, ultra realistic, volumetric fog, overglaze, analog photo, polaroid, 100mm, film photography, dslr, cinema4d, studio quality

Artistic techniques and materials

Digital art, digital painting, color page, featured on pixiv (for anime/manga), trending on artstation, precise line-art, tarot card, character design, concept art, symmetry, golden ratio, evocative, award winning, shiny, smooth, surreal, divine, celestial, elegant, oil painting, soft, fascinating, fine art

Camera view and quality

ultra wide-angle, wide-angle, aerial view, massive scale, street level view, landscape, panoramic, bokeh, fisheye, dutch angle, low angle, extreme long-shot, long shot, close-up, extreme close-up, highly detailed, depth of field (or dof), 4k, 8k uhd, ultra realistic, studio quality, octane render,

Style and composition

Surrealism, trending on artstation, matte, elegant, illustration, digital paint, epic composition, beautiful, the most beautiful image ever seen,

Game Texture

Flat Texture, Seamless, game art, game design, 8-bit, 16-bit, pixel, pixelized, retro game

Happy Aifying!

Offered by AiKodex