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*

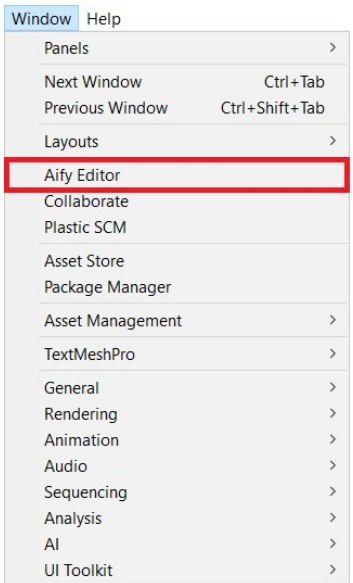
Dependencies

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

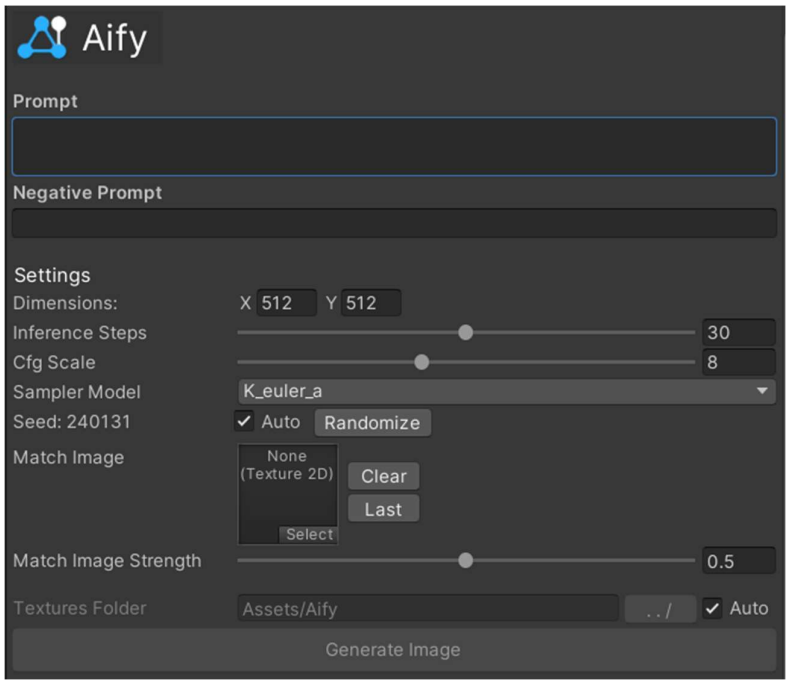
Barracuda is lightweight and cross-platform Neural Net inference library. Barracuda supports inference both on GPU and CPU.

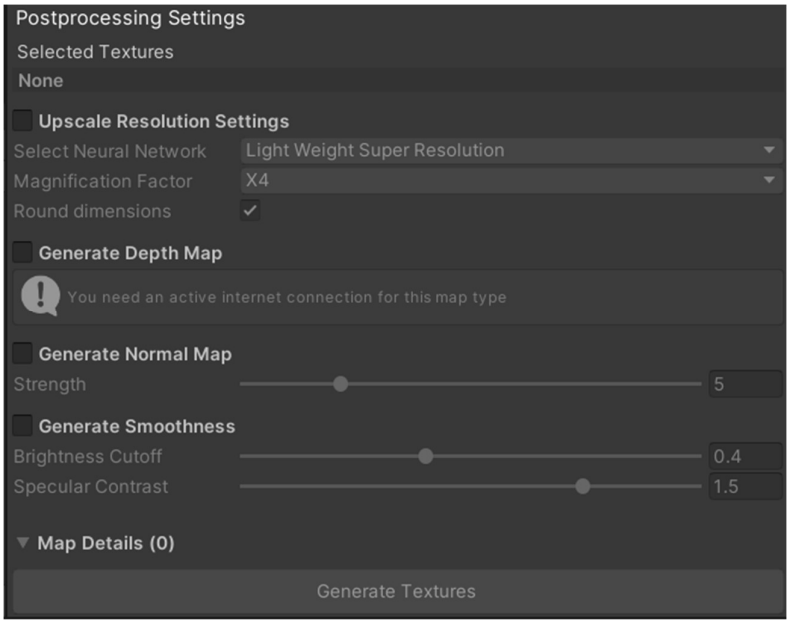
Usage

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



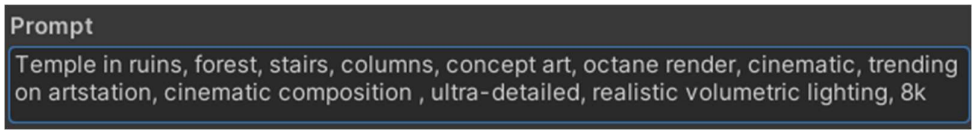
Editor Graphical Interface:





Features

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.

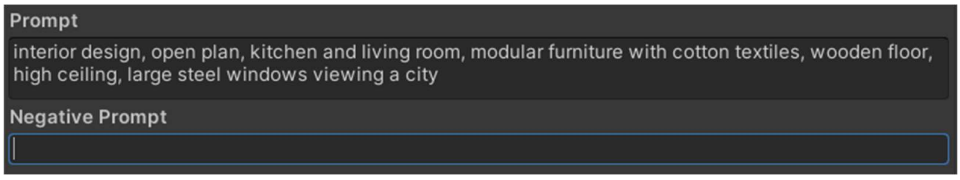


Result:

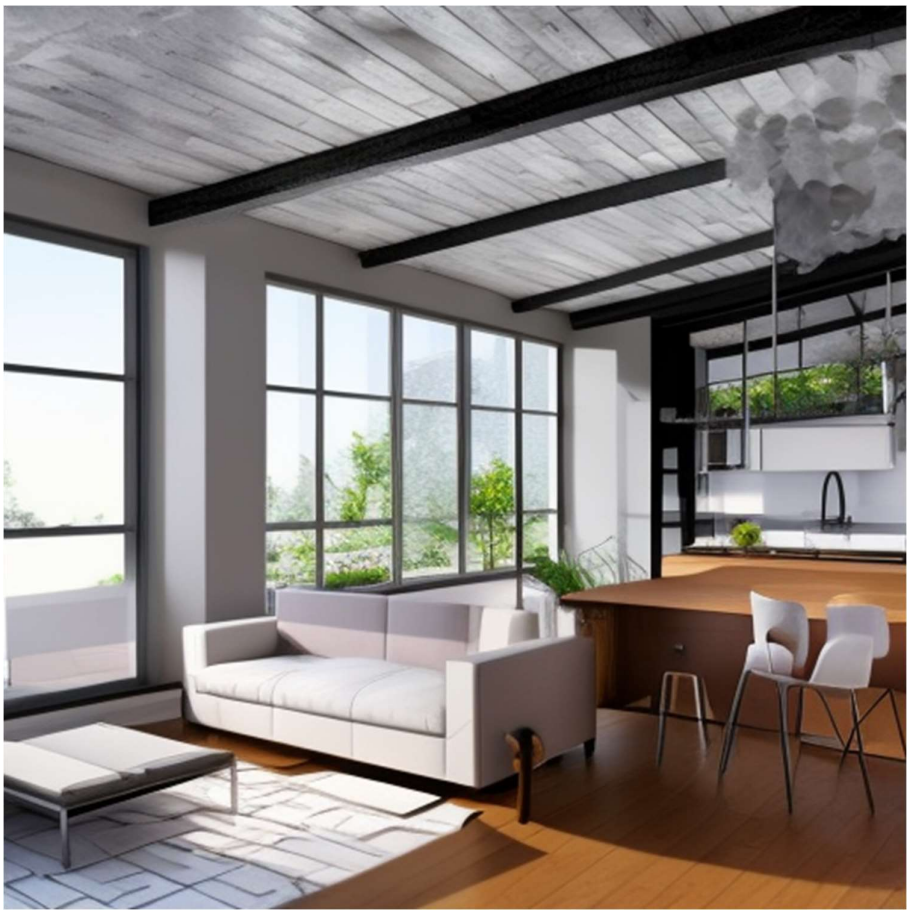
Prompt: Temple in ruins, forest, stairs, columns, concept art, octane render, cinematic, trending on artstation, cinematic composition , ultra-detailed, realistic volumetric lighting, 8k. Other Settings: Default. Seed: 1

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:

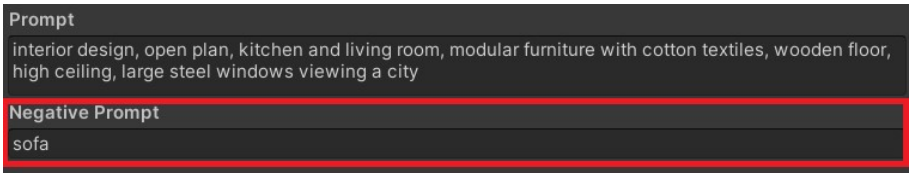


Result:



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



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 are192-256 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

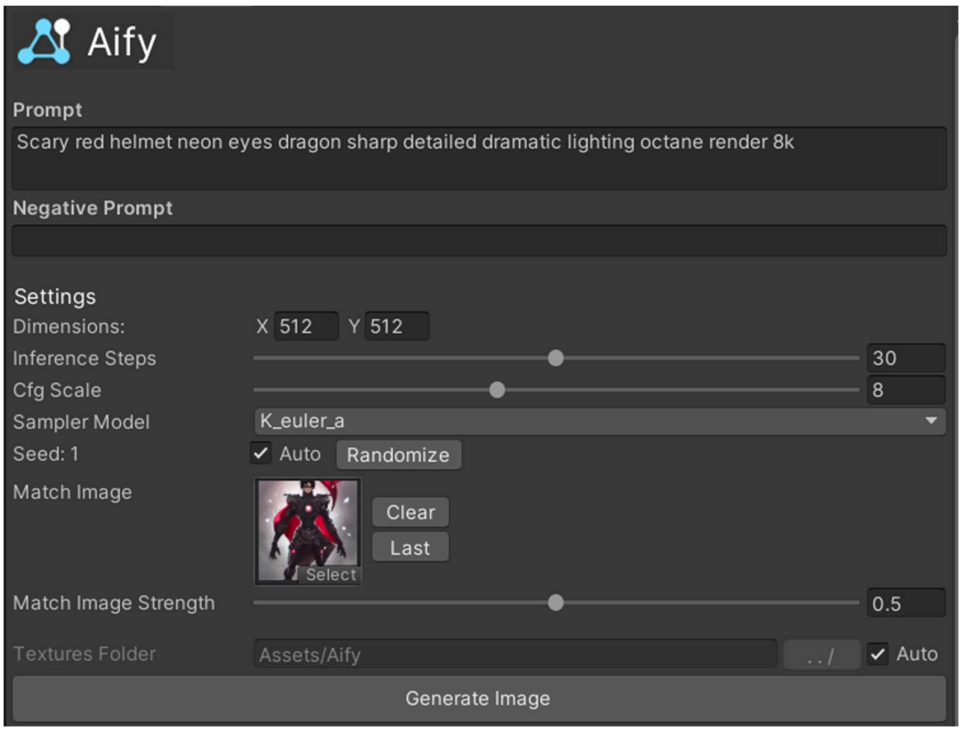
Seed: Seed for random latent noise generation. It is deterministic which means the same seed will give the same image if all the other parameters are the same. Default value is 1. Auto Boolean randomizes the seed when Generate Image is clicked. Randomize variable randomizes the seed on demand. It also 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*



Result

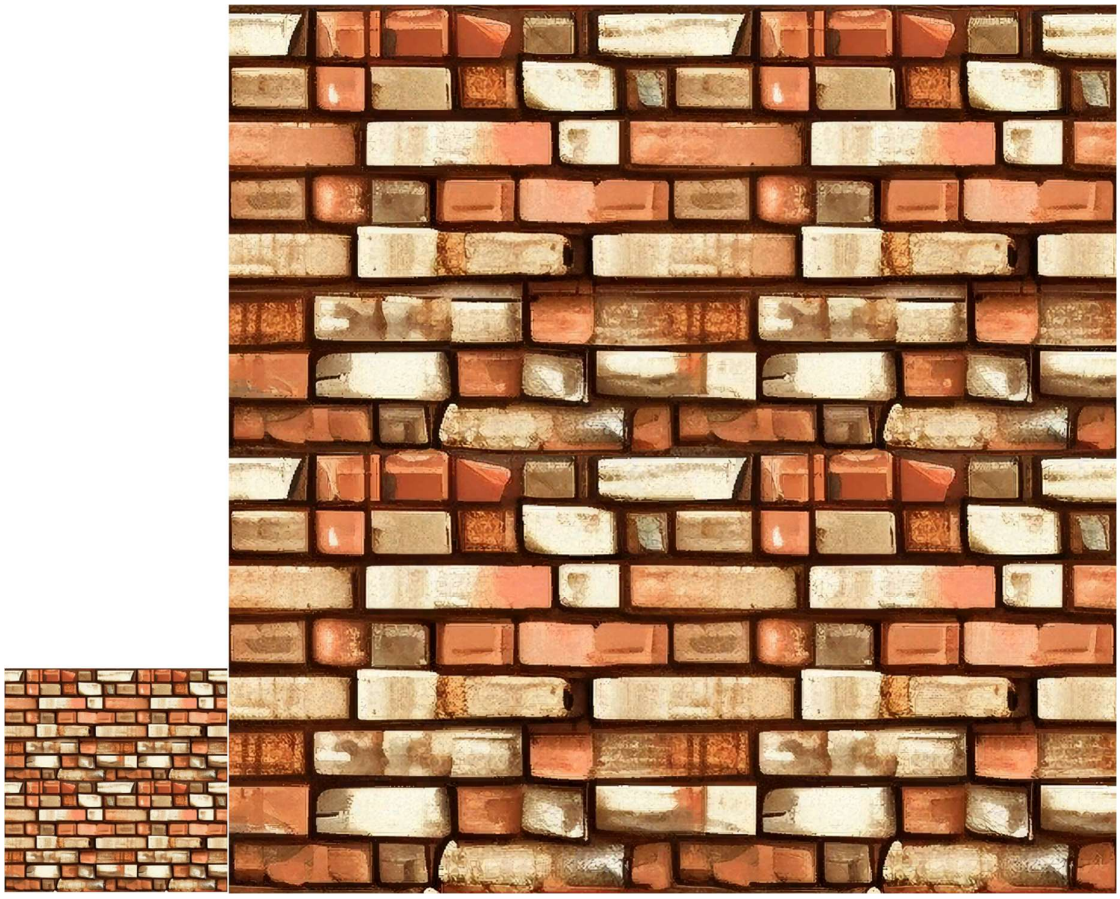
Match Image feature is also limited to a size in the multiples of 64*

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

Post Processing 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 higher in resolution than 1024x1024.

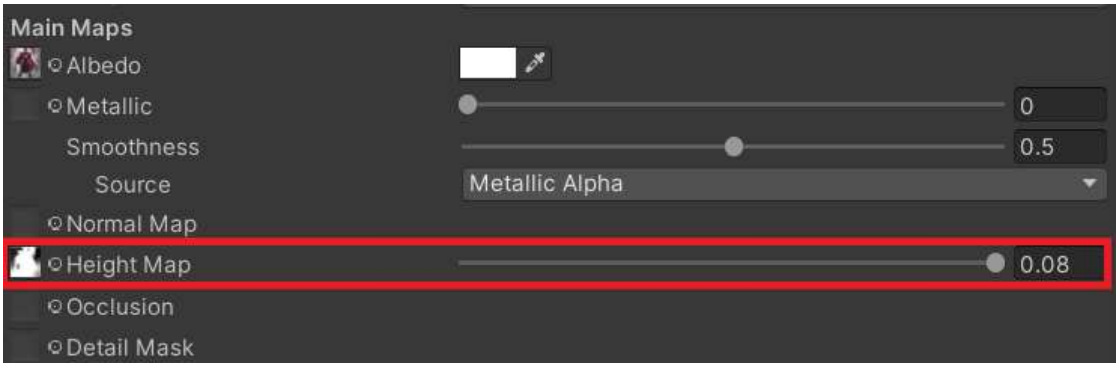
Upscale Textures: The AI Model can upscale your textures to 4K. Two neural Network models are used, Light Weight Super Resolution and Heavy Weight Super resolution. These are models trained with a dataset containing low and high resolution images. It works inside unity through Barracuda library which provides the ability to infer on python derivative models.



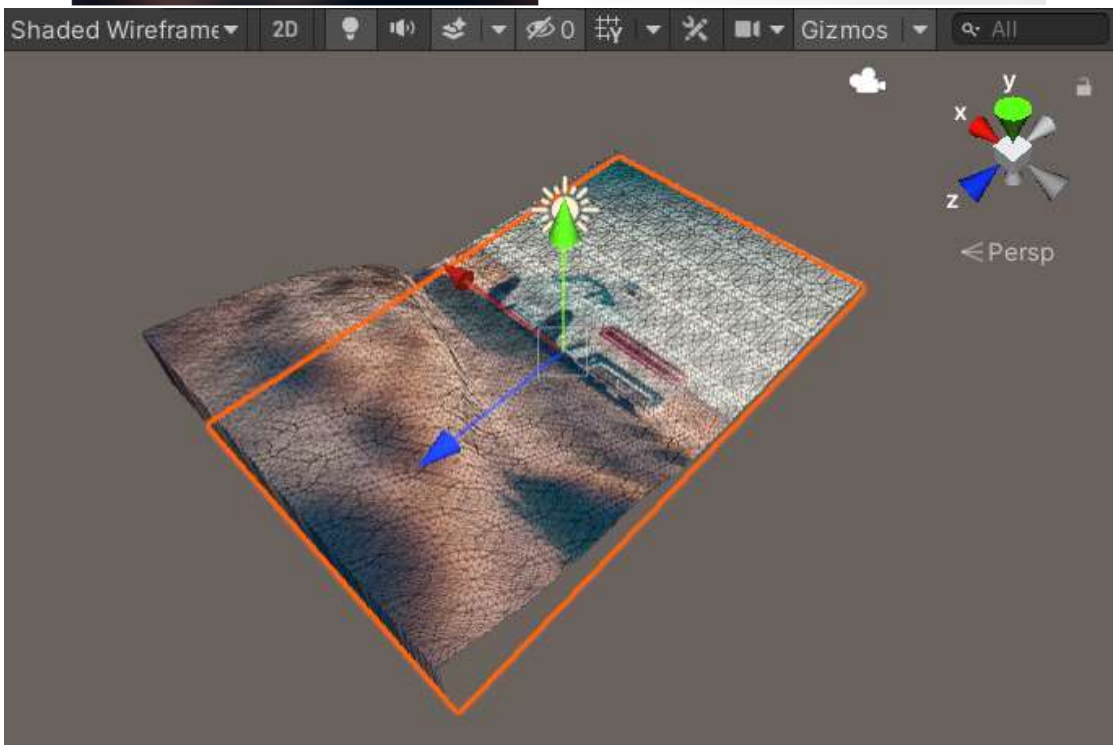
Size Comparison (True Ratio) (Left) Brick Texture 512 x 512 (Right) 2048 x 2048

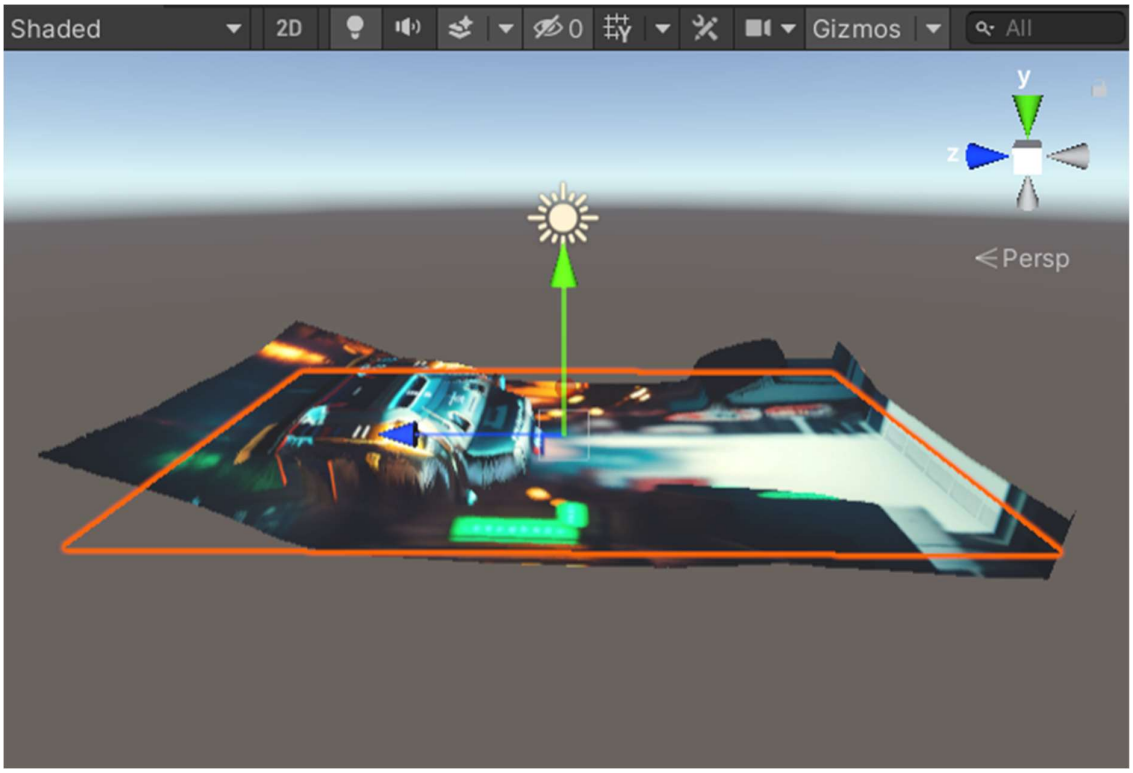
AI-based Depth Maps: The AI Model can also generate AI-based depth maps for images, allowing you to create 3D content from them. The backend uses a pretrained MiDaS model to calculate depth.
These maps can be used for the following:

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

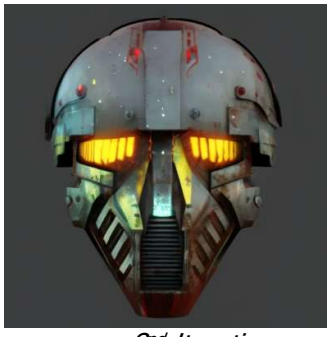
Rough sketches: Empowers game developers to bring their vision to life by transforming a rough sketch from an artist into stunning game art. With this extension, developers

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

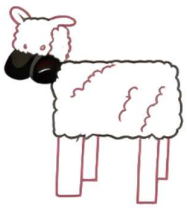
3rd Iteration

4th Iteration

5th Iteration

6th Iteration

Rough Sketch:



Match Image Feedback Loop:

1st Iteration

2nd Iteration

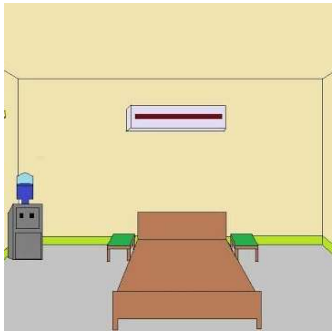
3rd Iteration

4th Iteration

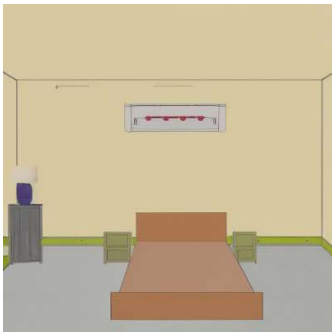
5th Iteration

6th Iteration

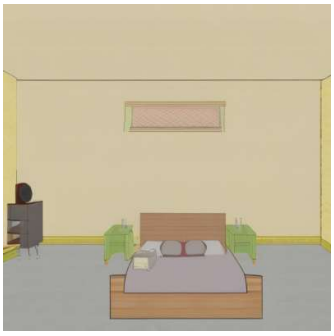
Rough Sketch



Match Image Feedback Loop:

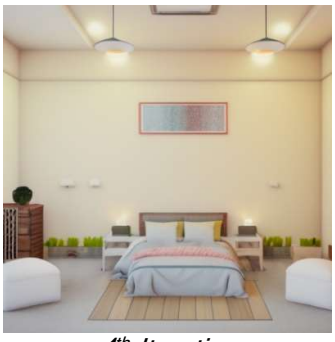


1st Iteration



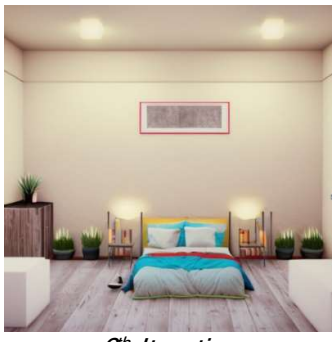
2nd Iteration

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

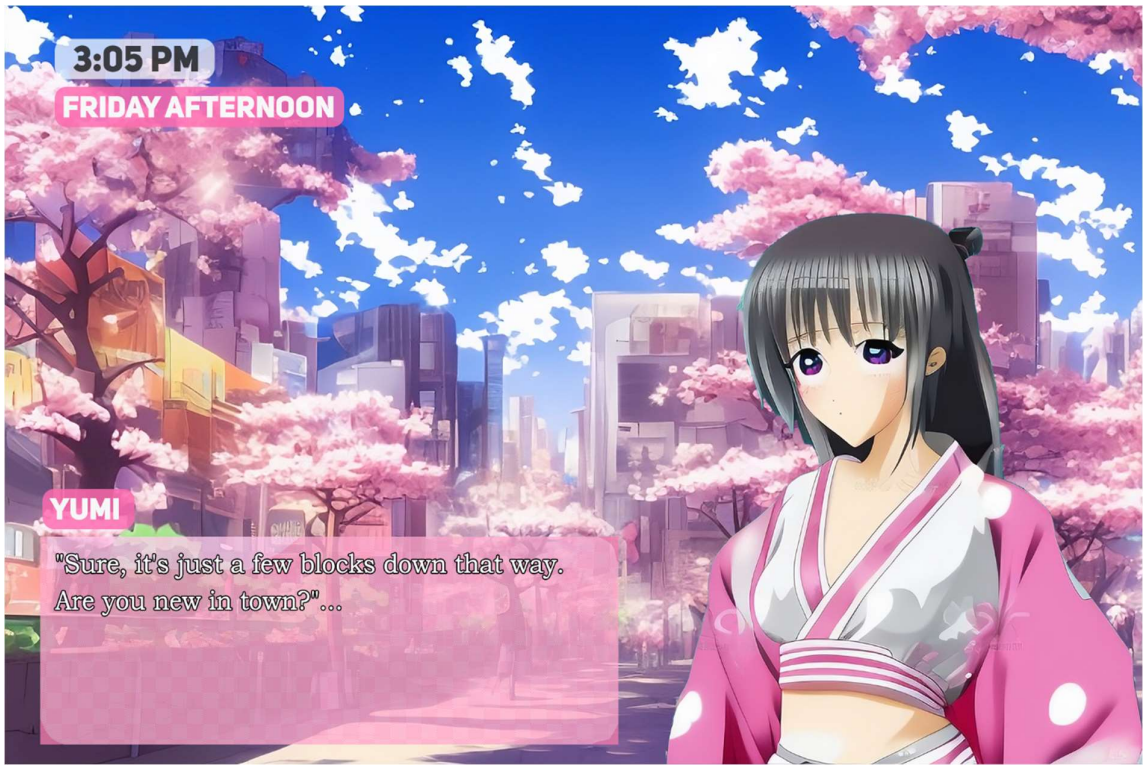
- **Re-master Games with new textures and materials**

Concept Remaster of an interior design from Minecraft

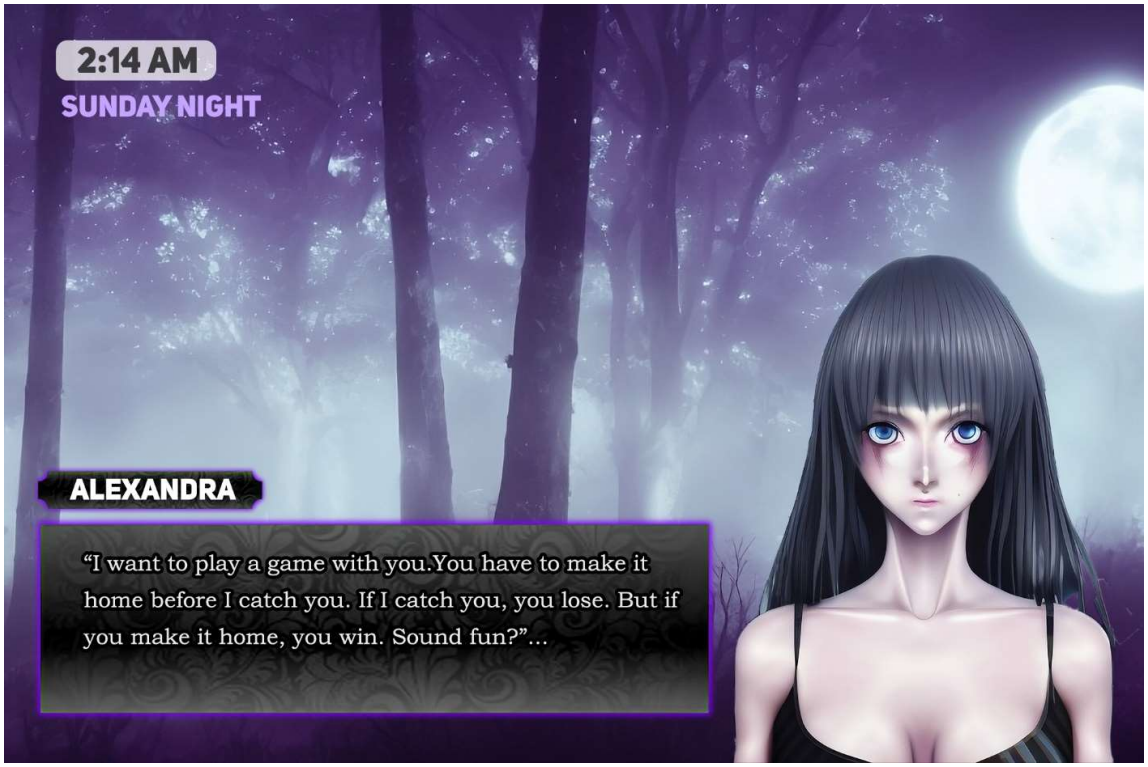
- **Mix and match different styles**
  Create artwork, concept designs, character design, mockups and much more!

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

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.

Happy Aifying!
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