

Workflow "Generate 3D short films from 2D AI images!"

This guide shows you how to use AI tools to turn your generated images into stunning 3D worlds, and how to bring them to life using traditional VFX tools like Blender and After Effects. It also explains how to use AI to write the script and create voice-overs, so you can produce entire short films by combining all these techniques!

This guide is based on the script of my YouTube video "[Generate entire movies with AI!](#)" and I've also included the timecodes for each chapter so you can follow along.



Some basic knowledge for the following tools is required:

- Video Editor (After Effects, Premiere, Resolve...)
- blender

AI Tools used for this workflow:

- ChatGPT: <https://openai.com/blog/chatgpt/>
- midjourney: <https://midjourney.com/home/?callback...>
- SD: <https://github.com/AUTOMATIC1111/stab...>
- Depth Map Extension: <https://github.com/thygate/stable-dif...>
- <https://play.ht/> or <https://elevenlabs.io/>
- Adobe Podcast: <https://podcast.adobe.com/Install>




Step 1: Generate a script using ChatGPT

This step is only necessary if you don't have your own story that you want to turn into a movie. In my case, I wanted to find out what kind of world the AI creates when you intervene as little as possible.


Therefore, I first opened a new chat with Chat GPT and prompted: **You are a copywriter for a travel company that offers trips to distant planets and galaxies.**

I then named the actual task: **Write a text promoting the city on Mars as a travel destination. Include the sights and special attractions and recommend the best restaurants.**

M You are a copywriter for a travel company that offers trips to distant planets and galaxies.

 Sure, how can I help you with your copywriting needs? Do you have a specific message or theme you would like me to convey in the copy?  

M Write a text promoting the city on Mars as a travel destination. Include the sights and special attractions of the city and recommend the best restaurants.

 Are you ready for an out-of-this-world adventure? Look no further than the city on Mars! This futuristic metropolis offers travelers the unique opportunity to experience life on another planet.

One of the top sights to see is the Martian Space Center, where you can learn about the history of space exploration and see exhibits on the technology used for the first human mission to Mars. The city also boasts stunning architecture, including the towering Martian Tower, a skyscraper made entirely of red Martian sandstone.

For outdoor enthusiasts, the Martian Landscapes National Park offers breathtaking views of the planet's rugged terrain and unique rock formations. Take a hike or take a ride on a Martian rover and immerse yourself in the natural beauty of this alien world.

If you want a more traditional movie script start with: **You are a screenwriter focusing on [short films, mind bending movies, hollywood blockbusters etc.].**

Write a [number of pages] script for my movie about [your topic]. It should include memorable characters, a strong conflict and a satisfying ending.

Of course these are just examples for you to get started. Be creative and try out stuff until you find something you like!

Step 2: Generate image prompts using ChatGPT

When you have a script that you are happy with, ask chat GPT:

"Now create a list with short but detailed visual descriptions of all the locations you just mentioned as keywords."

I then copied these descriptions into midjourney adding keywords like **"cinematic, science fiction, octane rendering, arri alexa cinema"**.

Full prompt example:

low gravity factory to lower production costs, many international companies have established manufacturing facilities on Mars, ranging from the production of consumer goods to the development of high-tech devices. [< written by chatGPT]

[added by me to every prompt<] **colorful, octane, 8k, photorealistic, alexa cinema camera, futuristic, city, industrial,photo, realistic, 80mm, clean, interstellar, angular, archviz, clean energy, space x, space odyssey --ar 16:9**



If you're not happy with your image, don't be afraid to add to the prompt as you see fit!

I had a lot of fun creating these images. It really felt like an exploration, like I was discovering these new worlds and actively shaping them by choosing the images I liked best and developing them further. The only problem was that I had too many concrete ideas of what I wanted the city to look like, and I wanted to bring too many visual elements together.

For example, I had asked ChatGPT how it imagined a city on Mars, and the answer was that it would be semi-subterranean, made of stone and Martian soil to be protected from radiation. So I wanted to create an image with an underground city on Mars, in a massive volcanic cave, with a lake in the middle and a nice skylight, but I gave up after a few tries. Midjourney is amazingly good at creating stunning images, but it's hard to bring too many elements together. At least it was when I created this video. Since then, it's gotten much better at it (old left, new right):

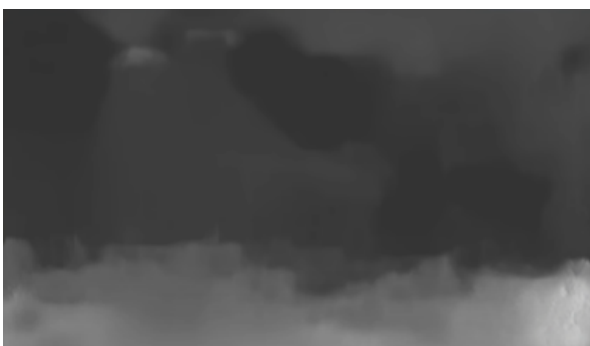
underground city in a giant martian volcanic cave, skyline, skyscrapers, bright, clean, white, utopia, solar punk, towers, lake in the middle, skylight, photography, the expanse, photorealistic, alexa cinema camera, futuristic, realistic, 80mm, clean, interstellar, angular, archviz, glass roof --ar 16:9



Step 3: Generating the 3D Model (old technique)

Now that we have all our images, we can start generating the 3D models from them. 3Dphoto.io is a website where you can upload any image and it will generate a depth map. A depth map is basically just an image that shows where the pixels are in space, the lighter parts are closer to the camera and the darker parts are further away.

In Blender you can use this depth map to control a depth modifier that pushes the image apart based on these values. The only problem is that the camera can only be moved in a very limited way, because as soon as you move it too much, you see all the stretched areas and you see that there is nothing behind the objects, just a stretched mess, but this time we are using a tool that can generate not only high-resolution depth maps, but also 3D models and 3D videos.



High resolution Depth Maps (new technique)

The tool is an extension for the automatic 1111 Stable Diffusion Web UI. Once you get Stable Diffusion up and running on your computer, installing the high resolution depth map extension is really easy. All you need to do is copy this link:

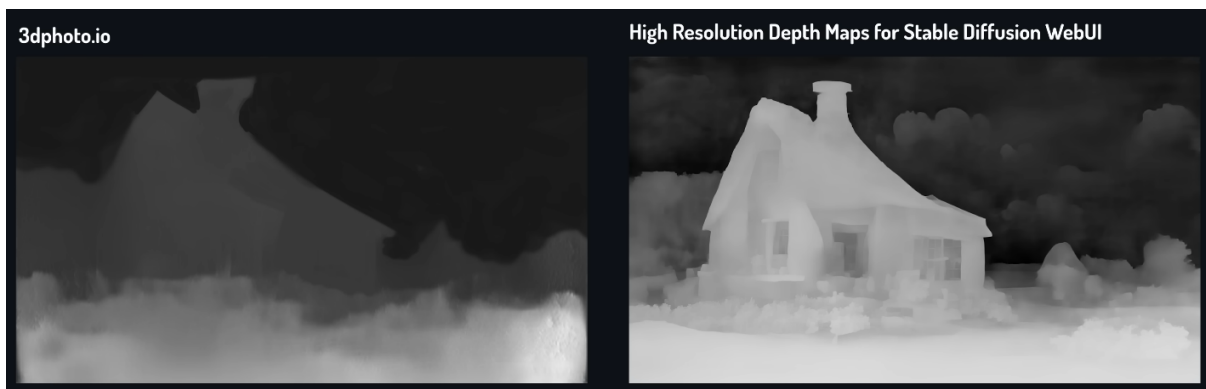
<https://github.com/thygate/stable-diffusion-webui-depthmap-script>

Go to Stable Diffusion, click on Extensions Install URL, paste it there and click Install, restart the UI and you're ready to go. With the newer Version of the WebUI, you can also find it under Extensions > Available > Load from > search: stable-diffusion-webui-depthmap-script.

! Before we can start generating we need to change some settings as the workflow has changed since I made the video:

Instead of .ply files it now creates .obj files by default. To be able to reproduce the following workflow you have to go to the settings in the Stable Diffusion WebUI and then to "Depth Map Extension" and check "Save additional PLY File with inpainted mesh".

Then just go to the new "Depth" tab in your WebUI and upload one of your images. By the way, it doesn't have to be an AI-generated image, you can also use photos or your own graphics and see how much better it is compared to the last technique:



If you have a strong graphics processor, choose GPU, otherwise switch to CPU. This will take a bit longer, but is much more stable. Leave it at "res101" as this setting has proven to be not only the best, but also the fastest in all my tests.

Scroll down to "Generate 3D inpainted mesh" and enable it. You can also enable "Generate 4 demo videos" if you like. In some cases, one of these demo videos might even be good enough to use in your short film!

When you are ready, click "Generate" and be patient.... It will take a while. If you want to create multiple 3D models, you can use the "Batch Process" tab. For example, for my short film "The City on Mars" I uploaded all the images and let them process overnight.

You can find the 3D models and demo videos in the "extra-images" folder in the output folder of your Stable Diffusion WebUI.

Super advanced, time-saving trick for multiple shots!

Importing the file and setting up the scene doesn't take much time, but it does take some time. And that time adds up, especially if you want to create a full short film with lots of shots! Luckily, the whole process of setting up the scene and importing the file can be automated!

To that end, I asked ChatGPT to write me a Python script that deletes everything in the scene, imports the model, creates a new camera, rotates everything properly, and changes my scene settings:

```
import bpy

# Remove everything in the scene
bpy.ops.object.select_all(action='SELECT')
bpy.ops.object.delete()

# Import the .ply object
bpy.ops.import_mesh.ply(filepath="C:/Users/YourName/stable-diffusion-webui/outputs/extras-images/140.ply")

# Rotate the object -90 degrees around the x-axis
bpy.context.active_object.rotation_euler = (-1.5708, 0, 0)

# Create a new emission shader for the object with a color attribute node
material = bpy.data.materials.new(name="Emission")
material.use_nodes = True
nodes = material.node_tree.nodes
links = material.node_tree.links
emission_node = nodes.new(type='ShaderNodeEmission')
color_node = nodes.new(type='ShaderNodeAttribute')
color_node.attribute_name = 'Col'
links.new(emission_node.inputs['Color'], color_node.outputs['Color'])
# Remove the Principled BSDF node from the material
for node in nodes:
    if node.type == 'BSDF_PRINCIPLED':
        nodes.remove(node)
# Plug the Emission shader into the Material Output node
material_output_node = nodes.get("Material Output")
links.new(emission_node.outputs['Emission'], material_output_node.inputs['Surface'])
bpy.context.active_object.data.materials.append(material)

# Create a new camera with a focal length of 35mm
cam_data = bpy.data.cameras.new(name='Camera')
cam_data.lens = 35
cam_ob = bpy.data.objects.new('Camera', cam_data)
bpy.context.scene.collection.objects.link(cam_ob)

# Rotate the camera 90 degrees around the x-axis
cam_ob.rotation_euler = (1.5708, 0, 0)
```

```
# Set the output format to 2048 x 1152 and Color Depth 16, with compression set to 0
bpy.context.scene.render.resolution_x = 2048
bpy.context.scene.render.resolution_y = 1152
bpy.context.scene.render.color_depth = '16'
bpy.context.scene.render.use_compression = False
```

```
# Activate Screen Space Reflections, Bloom, and Ambient Occlusion
bpy.context.scene.view_settings.view_transform = 'Standard'
bpy.context.scene.eevee.use_ssr = True
bpy.context.scene.eevee.use_bloom = True
bpy.context.scene.eevee.use_ambient_occlusion = True
```

To use it, you can copy the code into a new text document and open it in the "Scripting" tab or just click "New" and copy and paste it. Now all you have to do is change the path to the generated 3D model you want to import and click the little play button, and Blender will set up the scene for you!

Step 4: Setting up the scene

Open Blender and delete everything in your scene. Go to “File > Import > Stanford (.ply)” and choose the .ply file from the output folder of Stable Diffusion.

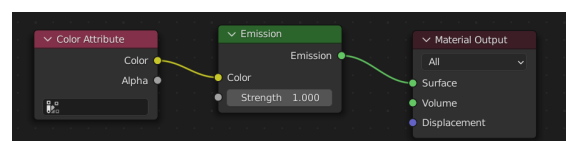
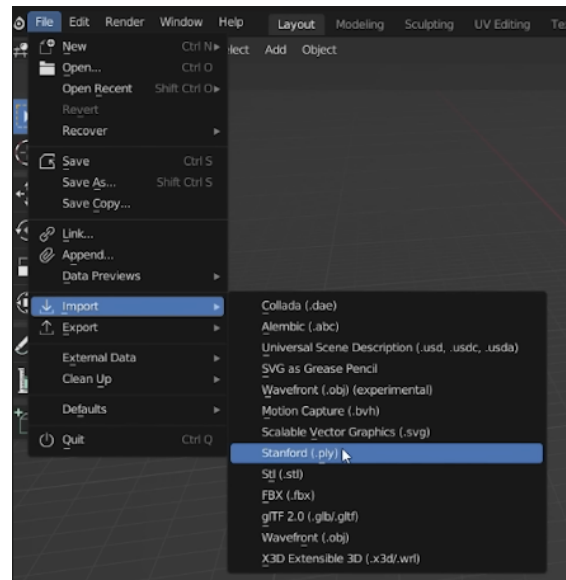
Since the files are quite large, importing can take a few minutes. So if Blender acts like it's going to crash, don't worry too much and give it a little more time!

When it's done, you'll be greeted by an abstract, distorted shape, but that's how it's supposed to look!

Create a new camera (Shift+a > Camera) and change every rotation in Object Properties to zero so it points down. Select the camera and set Rotation X to 180.

Select everything (model + camera), hit “R” and then “X” on your keyboard, type “90” and then click “-”. You now rotated everything into a more usable position.

Now when you look through the camera, you should be able to see your scene in gray. You can change the focal length from 50 to 35 mm in the camera settings to get everything in frame.



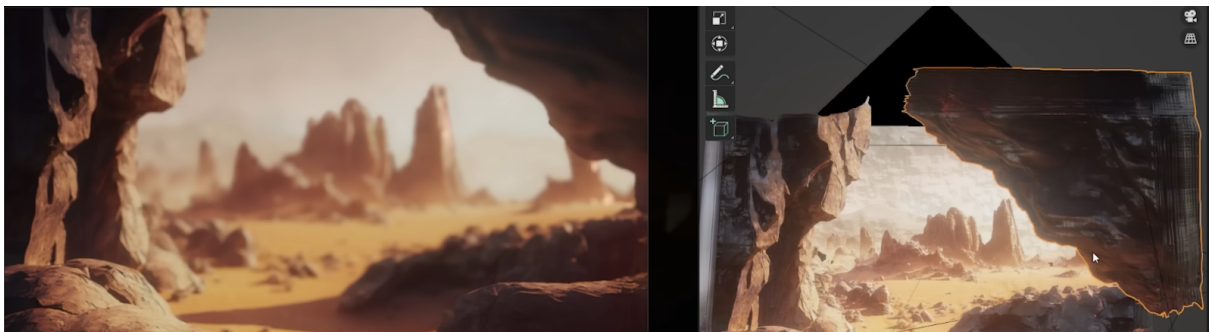
To see the colors, go to the "Shading" tab in Blender. Select your 3D model, click "New" and delete the Principled BSDF. Add an "Emission Shader" instead. Connect it to the Material Output node and add a "Color Attribute" node. Connect this to the "Color" of your Emission Shader.

Tips & Tricks

Now that you've set up the scene, you're ready to make it cinematic! Animate the camera, add depth of field and volumetric lighting. But there's much more you can do to take your images to the next level!

#1 Reassemble the 3D model in new ways

Switch to the "Edit" mode. You can now select parts of the model, right click > separate > by selection and copy this part to any place to create a more interesting and three-dimensional composition. I used this to duplicate some rocks to create a cave for this shot:

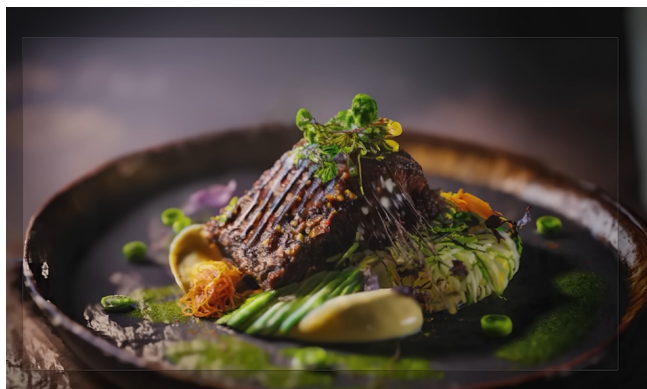


#2 Use Photoshop to create even more depth

When shooting with the Martian tower, I wanted to create even more depth and be more flexible with the camera. So I used Photoshop's generative fill to separate the foreground from the background. See my video on animation with generative fill for an overview of this technique.

#3 Add new lights into the scene

If you want to add new lights to the scene, we must first switch out the shader back to a "Principled BSDF", since an emission shader only emits light, but cannot "capture" it. You can now add new lights, but this will also highlight the imperfections of the model. If it looks too broken, you can change the



"Emission" in the principle BSDF, just make sure you also connect the "Color Attribute" node to "Emission Color".

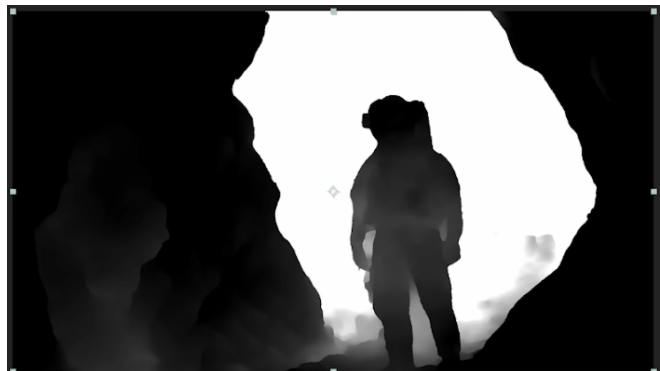
This technique works best for organic surfaces like rocks, but usually won't look good on smooth, flat surfaces. In the shot of martian food it worked really well.

#4 Add Stock Footage in After Effects

To add life to your shots, I recommend adding stock footage. If you don't have stock footage available, you can also create your own using AI tools like Runway or Pika Labs. I talk about this technique in my video "[Generate ENTIRE MOVIES with AI!](#)".

However, sometimes you want to add stock footage to only certain parts of the shot (for example, only the background).

To quickly select these parts of the shot, you can render a Z-Depth pass (basically a depth map for each frame) and use it as a mask in After Effects or DaVinci Resolve by adding a "Layer" or "Curve" effect.



Step 5: Voice Over

The last thing to do to put it all together is the voice actor, and this time I wanted to try <https://play.ht>. So I quickly looked at all the voices and decided on "Larry". I was really happy with Larry's voice, but Adobe has come out with an AI tool called [Adobe Podcast](#) that lets you use AI to enhance audio. I thought, what if I put the AI-generated audio from play.ht into Adobe podcast... Would that make it better? And it definitely did! It removed some of the mechanical reverb noise that was in the AI-generated voice over.

Examples

This workflow is one of my absolute favorite artificial intelligence techniques and I've made several short films with it. I hope you'll have as much fun with it as I did! For inspiration, here's the short film about the city on Mars again:

https://www.youtube.com/watch?v=X1Nljn_kJq8

I also created a longer version of this concept for a German YouTube channel that deals with science communication. You can watch it here:

<https://youtu.be/GR81FWiguIE?si=AsAsAQVIDsFpnO1J>