

Leonardo.ai Unity Plugin

Version 1.0.0

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Description

The Leonardo.ai Unity Plugin allows users to access the Leonardo.ai API to:

1. Upload 3D models
2. Initiate textures using AI
3. Check texture job statuses
4. Download generated images and apply them your 3D model

You are able to continue using preexisting downloaded textures while offline.

Supported Versions

- Unity 2020.x.x
- Unity 2021.x.x
- Unity 2022.x.x

Supported Platforms

- Editor
- Windows
- OSX
- Linux

Caveats

Only the .obj 3D model format is supported. 3D models need to be UV unwrapped to be textured.

Package

The package can be found on the Unity Asset store here:

<https://assetstore.unity.com/packages/tools/generative-ai/leonardo-ai-257831>

First time setup

1. Install the Leonardo.ai Plugin package
2. Open the panel **Window -> Leonardo.ai -> Texturizer**

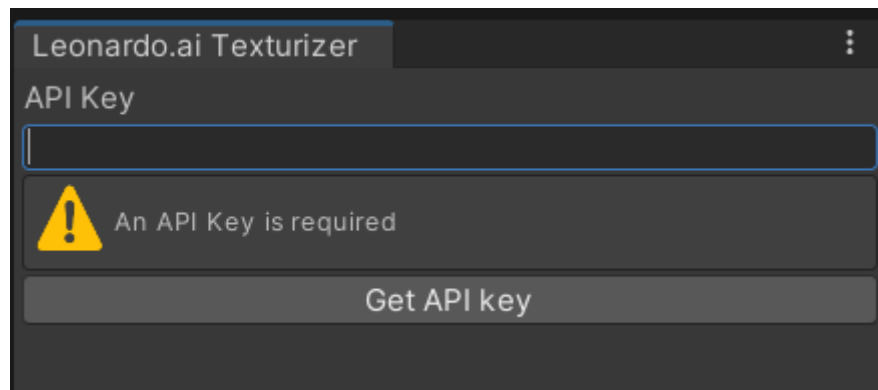


Figure 1: Get API key

3. To find your API key click the **Get API Key** button or navigate to <https://app.leonardo.ai/settings> and select the **User Api** tab and generate a new key. Paste it into the **API Key** field
4. Your User Details dropdown will be populated with your remaining API Tokens

Using Leonardo.ai Plugin

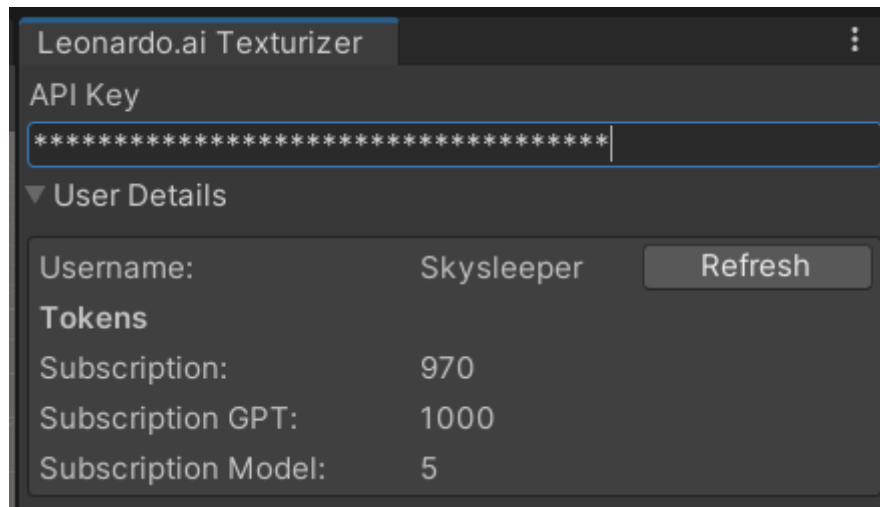


Figure 2: User details

- Select a 3D model in your scene view. Ensure the model you want to use has unwrapped UVs

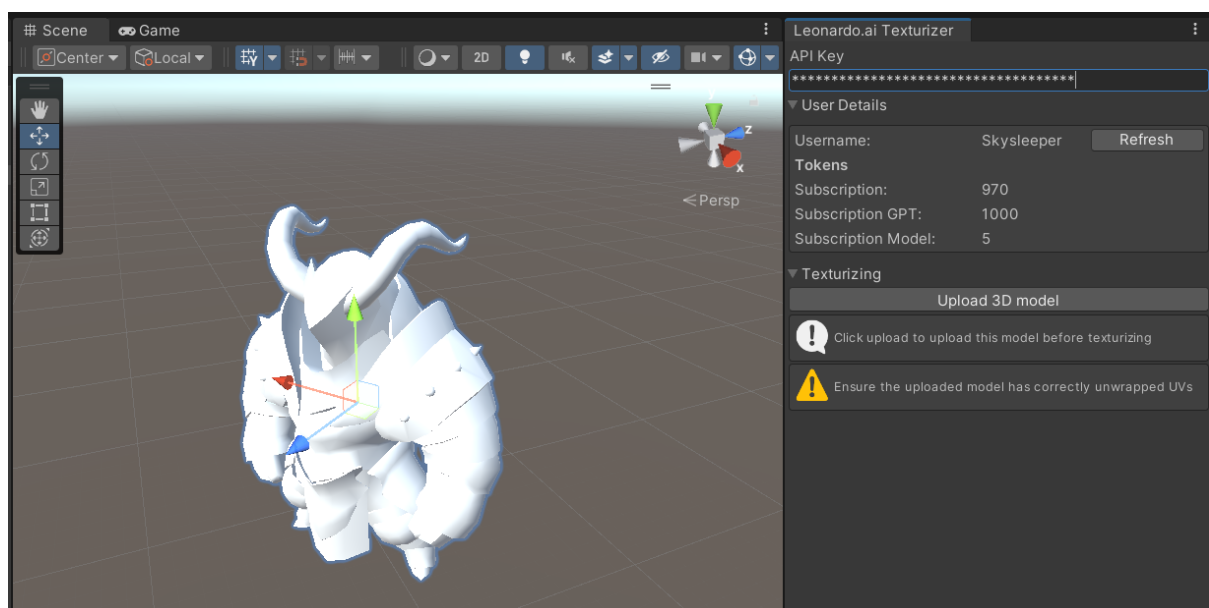


Figure 3: Upload 3D model

- Click **Upload 3D model**. This will upload the model onto the Leonardo.ai servers for use with texturing. Note: Ensure the UVs are unwrapped on the 3D model to allow for correct texturing

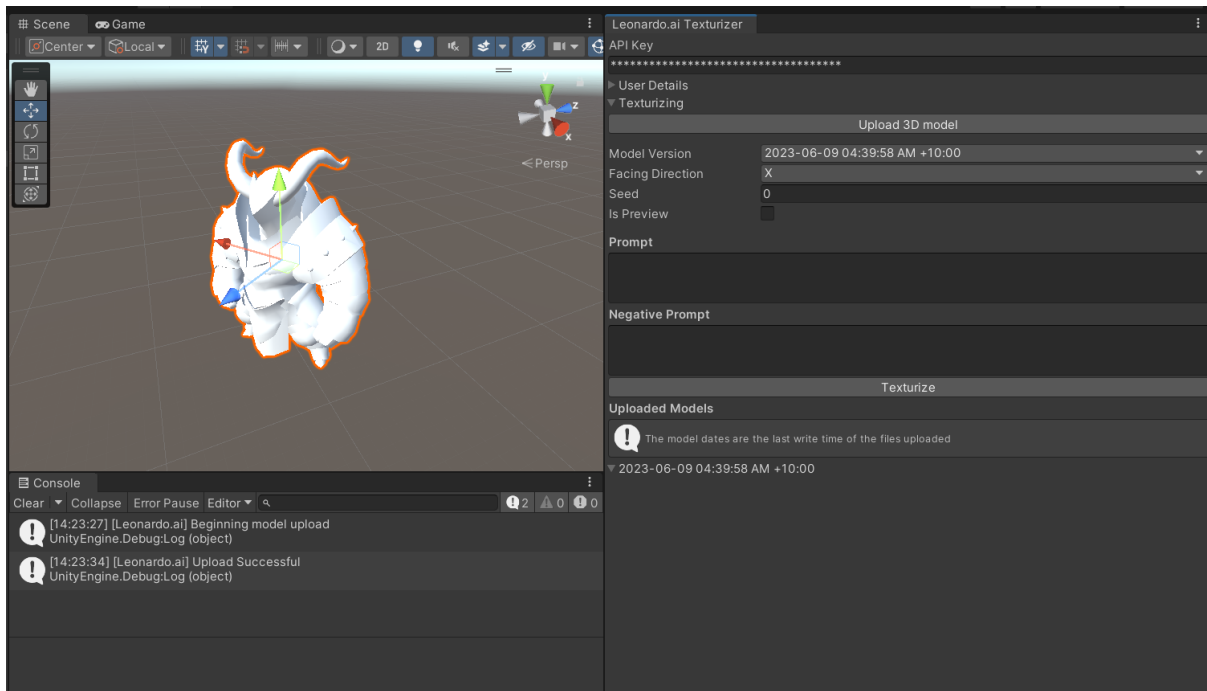


Figure 4: Uploaded 3D model

- The Leonardo.ai texturizer outputs its progress to the unity console. These are always prefixed with **[Leonardo.ai]**, once uploaded the window will look like the above. A scene gameobject needs to be selected at all times to see the details about it
- From here we can see the **Uploaded Models** section has an entry in it. As noted this is the last write time of the 3D model. When changing a 3D model and saving out the file, we can upload the new version and generate textures against that

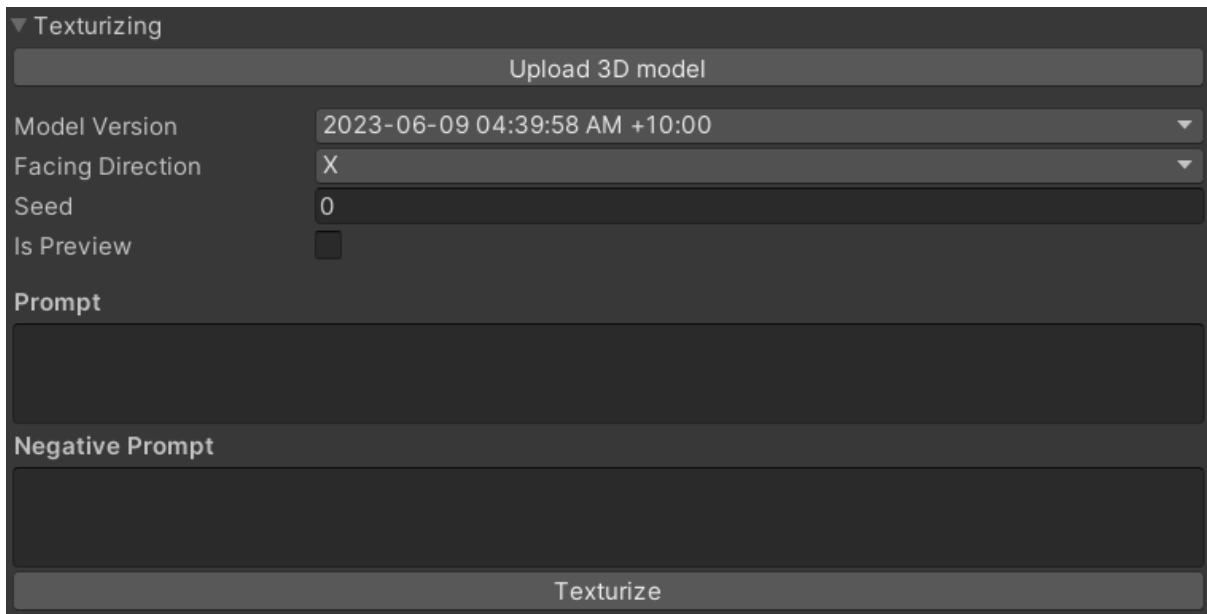


Figure 5: Texturizing options

- Now we are ready to texturize! Lets step through the fields we have in *Figure 5*

- Model Version:** Which model version you have uploaded you would like to texturize (there are scenario where you may revert to a previous model and generate against that)
- Facing Direction:** The facing direction of the model with no rotation
- Seed:** The seed of the generated image
- Is Preview:** Generates just the facing direction of the model allowing for quicker iterations
- Prompt:** The prompt to be used with the 3D model
- Negative Prompt:** The negative prompt to be used with the 3D model
- Texturize:** Initiates the texturize job

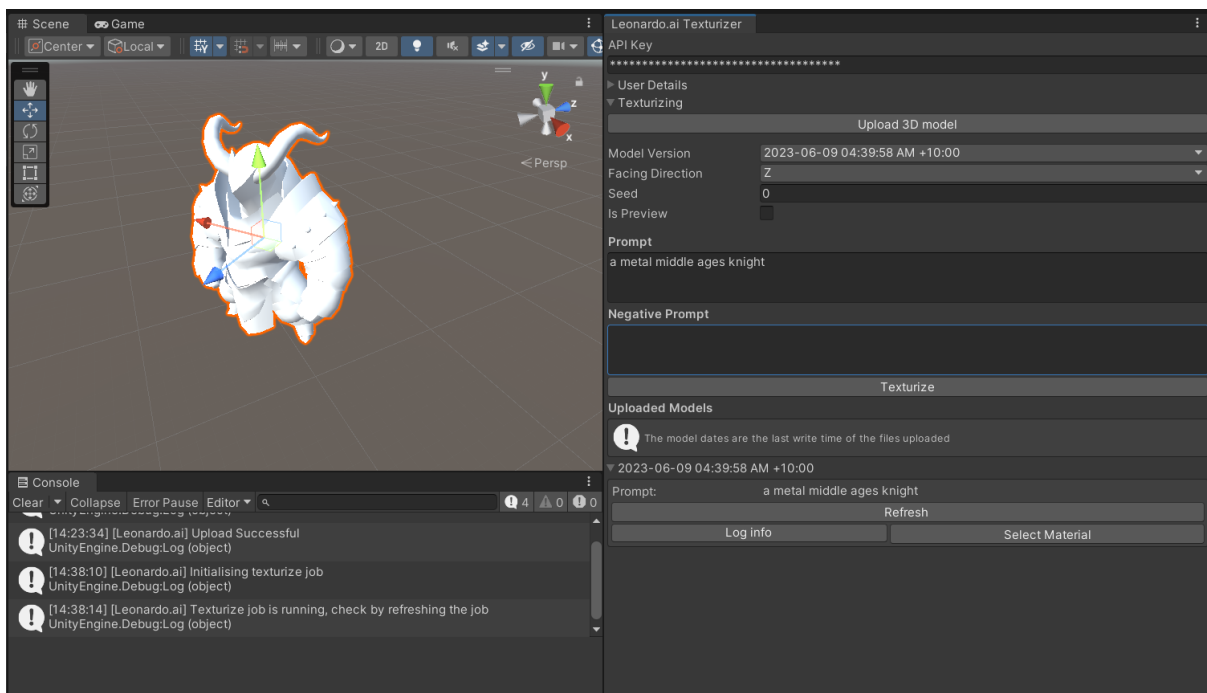


Figure 6: Texturizing

- Lets try enter some information to generate a metal knight, setting the facing direction to Z and leaving the Seed at 0
- The console has informed us that a texturize job is running and we can see in uploaded models some information about the job.

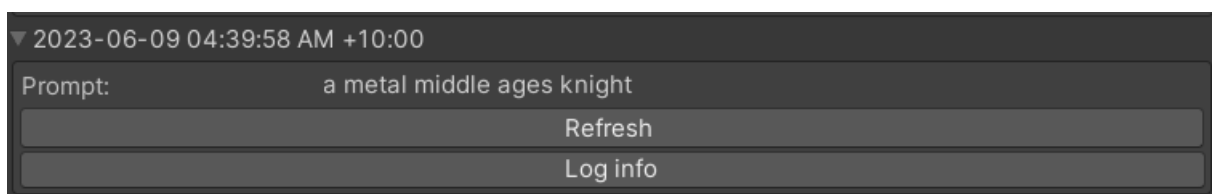


Figure 7: Texturize job information

- There are a few options we have on the Texture Job:

- a. **Refresh:** This checks the status of the job. This will result in Pending, Complete or Failed.
 - b. **Log Info:** Prints the job information to the console
- When the job is refreshed and revealed completed the **Refresh** button will turn into **Download & Apply Textures**. This will download all appropriate textures and create a material and apply it to the model.

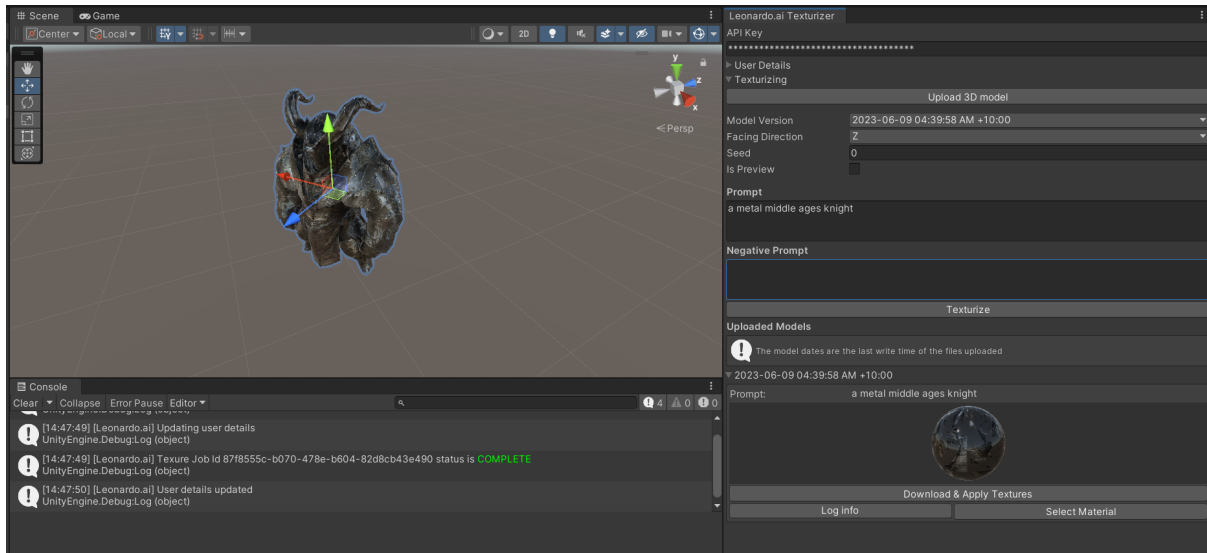
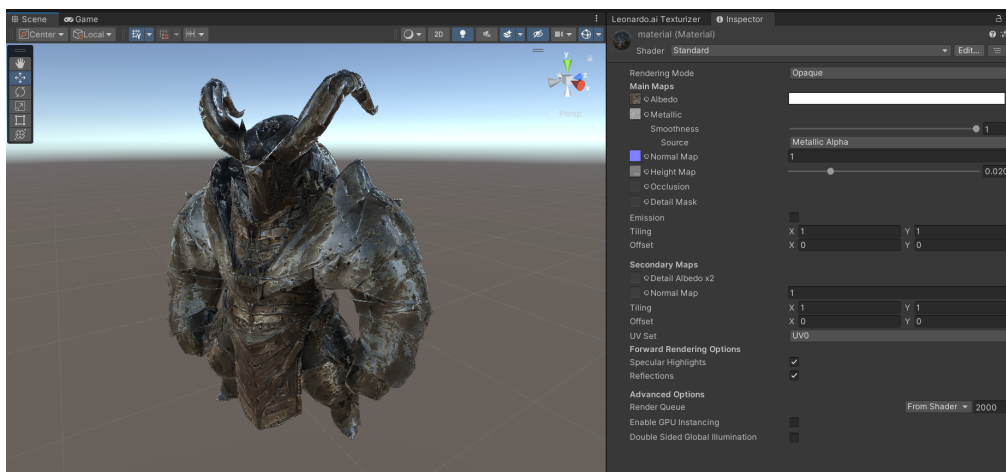


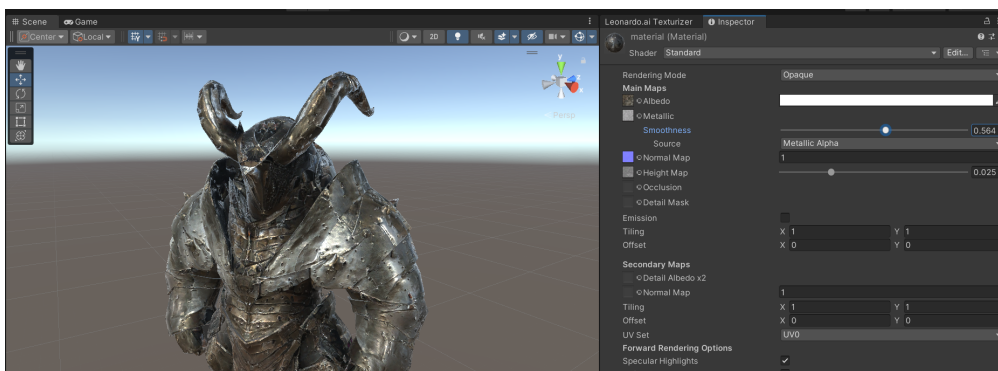
Figure 8: Download & Apply Textures

- Clicking the Select Material button will allow you to further fine tune the controls of the output material.

Before



After



FAQ

What 3D model format can I use?

Only .obj is support currently

Does my 3D model need unwrapped UVs?

Yes, unwrapped UVs allow the AI generative algorithm to determine where to place the texture otherwise the texture will appear to be one solid colour

My textured 3D model is one colour, why can't I see the texture?

Please ensure that your 3D model has been UV unwrapped correctly, you will need to generate another texture with the uploaded 3D model that has been unwrapped.

Which pipelines are supported?

HDRP, URP and default pipeline are supported. This will use the default material of the selected pipeline to load the textures into.

What textures are downloaded?

The Leonardo.ai API for 3D models currently supports:

1. Albedo
2. Roughness
3. Displacement
4. Normal

Which are mapped onto

1. MainTex
2. MetallicGlossMap
3. ParallaxMap
4. BumpMap

Can I change the material?

When clicking the **Download & Apply Textures** button a material of the selected pipeline is created that will load in the textures. By default the Parallax (or strength of the parallax map)

is set to a default of 0.02 and glossiness set to 1. These are intended to be changed to match the needs of your project.