

# **UVUtil** Plugin ver.1.0 for Shade 3D

## User Manual

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## Installation Note

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### For Windows users:

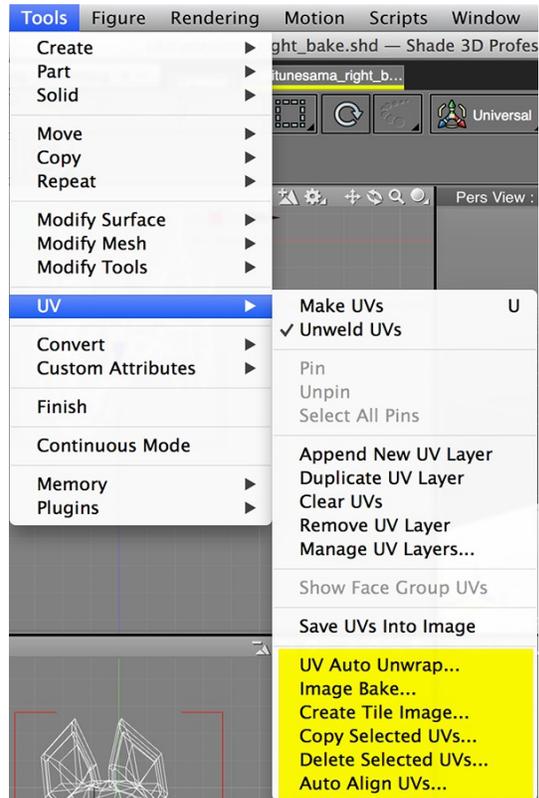
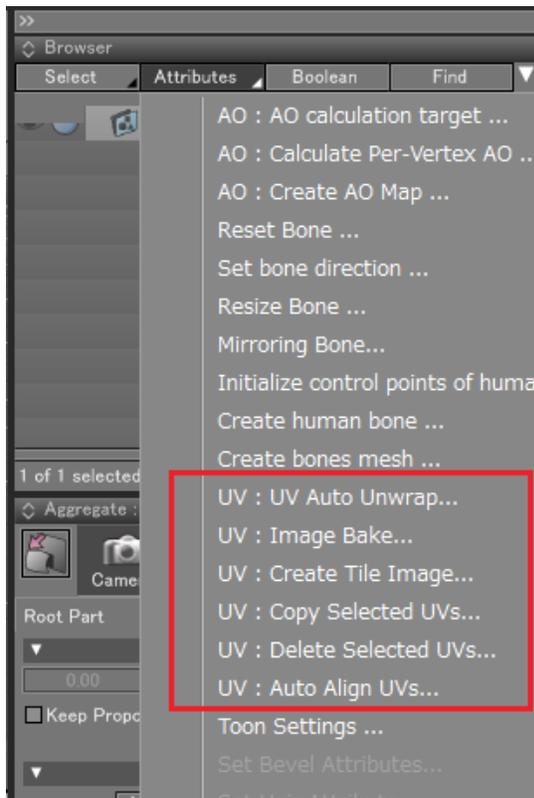
Copy the UVUtil.dll (64bit version UVUtil64.dll) file to the "C:\Users\username\Documents\Shade 3D ver.14\plugins" folder\* and start Shade 3D.

*\*Note that depending on your OS environment, the folder "my Document" might be in a different location*

### For Mac OS users:

Copy the "UVUtil.shdplugin" to the "/Users/username/Documents/Shade 3D ver.14/plugins" folder and start Shade 3D.

Once Shade 3D is started, in the "Attributes" menu of the **Browser**, make sure you can see the followings: "**UV Auto Unwrap**" and "**UV: Image Bake**".



Note: In Shade 3D ver.15 or later, you can access this plugin's contents from the "Tools > UV" menu in the navigation bar.

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## Supported Operating Systems

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- Windows 7/ 8/ 8.1
  - Mac OS X 10.9.x / 10.10.x
- Shade 3D Standard / Professional ver.14 or later
- \* Not compatible with Shade 3D Basic.
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## Functions

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**Note: Each function does not support the UNDO action.**

### UV Auto Unwrap

The UV layer of the selected polygon mesh will automatically be expanded to non-overlapping faces.

### **Image Bake**

For a texture using various values/channels such as Reflection/Transparency etc... assigned to the selected polygon mesh, the image is going to be synthesized. Sometimes various "channels" of a material can be consolidated into a single image. This is the "Image Bake" function.

### **Create Tile Image**

A checked pattern confirmation image will be generated.

### **Copy Selected UVs**

The UV layers of the selected polygon mesh will be copied.

### **Delete Selected UVs**

The UV layers of the selected polygon mesh will be deleted.

### **Auto Align UVs**

The UV layer of the selected polygon mesh will be re-arranged in a way of avoiding any overlapping issue and maintain a continuous UV surface.

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## **Changelog**

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First version: 2015/01/06

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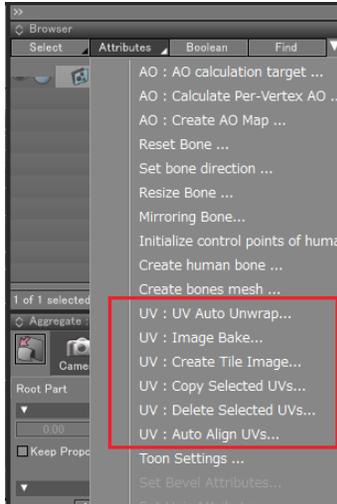
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## UV Auto Align

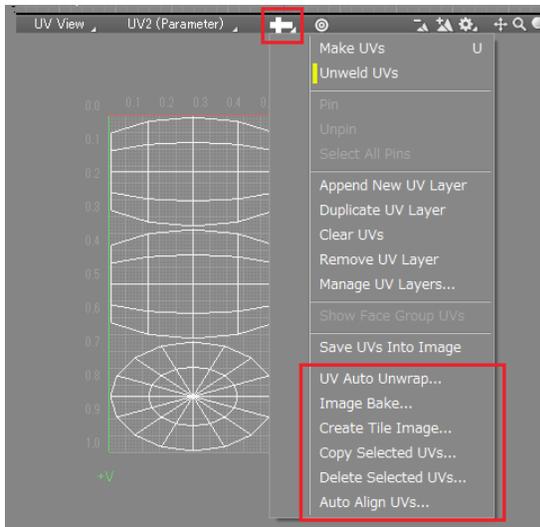
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The UV layer of the selected polygon mesh will be re-arranged in a way of avoiding any overlapping issue and maintain a continuous UV surface.

- In Shade 3D ver.14, you can perform this operation from the "Attributes" menu of the browser and select the "**UV: Auto Align UVs**" option.



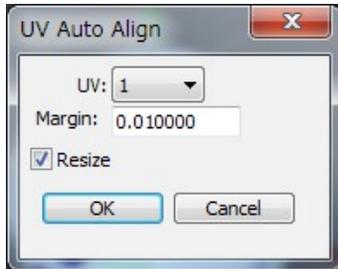
- In Shade 3D ver.15 or later, you can access this plugin's contents from the "Tools > UV > Auto Align UVs" menu in the navigation bar or in the "UV: Edit" mode next to the "cross" looking icon.



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## Usage

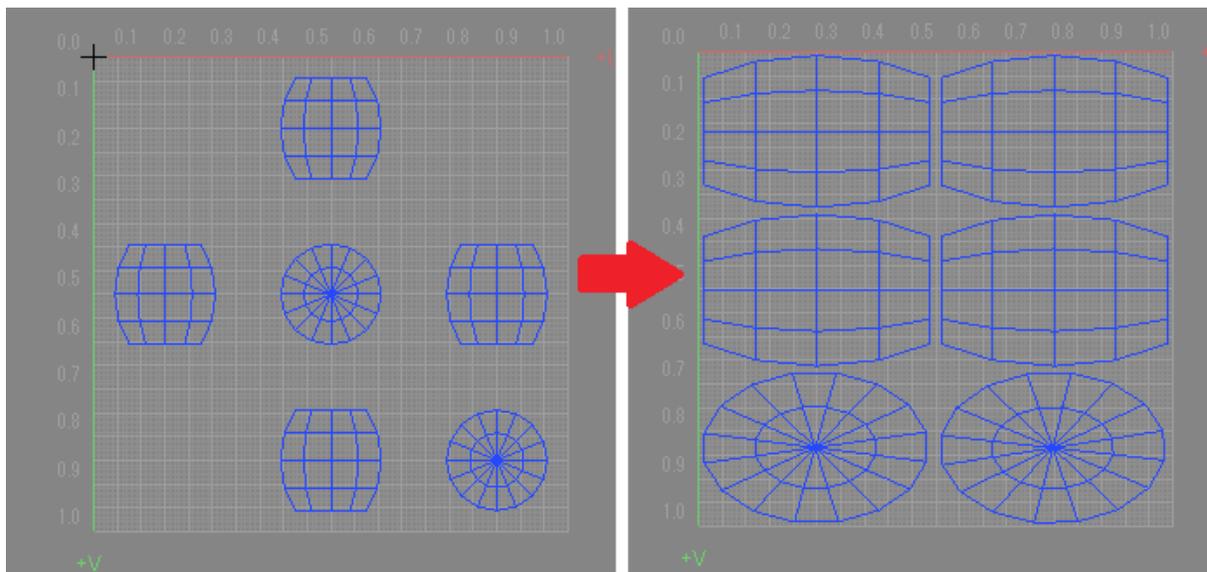
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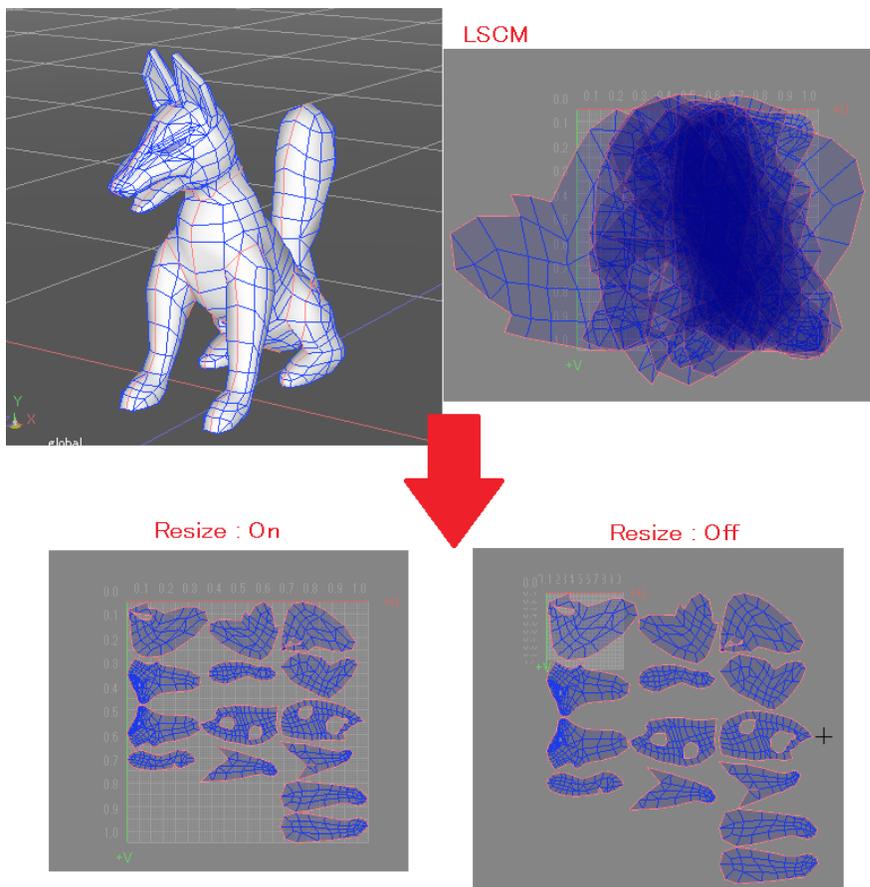
Once the UV Layer is selected, you can define your "Margin" UV coordinates by inputting a value between 0.0 and 1.0.

When the "Resize" checkbox is ON, the UV coordinates will be scaled to fit in the 0.0-1.0 values. Furthermore, this operation will be applied to all the faces of your polygon mesh.

Rearranging the UVs of a polygon mesh Sphere.



In the example below (samples/okitunesama\_right.shd), your model in its LCSM unwrapped version (Modify Mode) with the Resize option ON and OFF.



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## UV Auto Unwrap

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The UV layer of the selected polygon mesh will be automatically unwrapped to non overlapping faces.

- In Shade 3D ver.14, you can access the Auto Unwrap function from the "Attributes" menu of the **Browser**

- In Shade 3D ver.15 or later, you can access this plugin's contents from the "Tools > UV>Auto Align UVs" menu in the navigation bar or in the "UV: Edit" mode next to the "cross" looking icon.

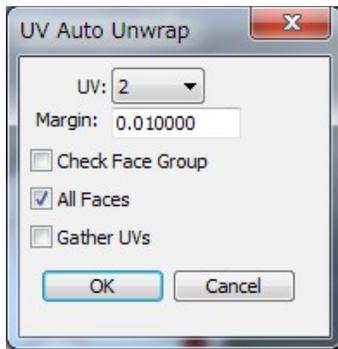
When the UV shape hasn't been assigned yet, this function is useful as a pre-treatment in the case of performing a 3D Paint and an AO map calculation.

This function can be applied to all selected polygons.

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## Usage

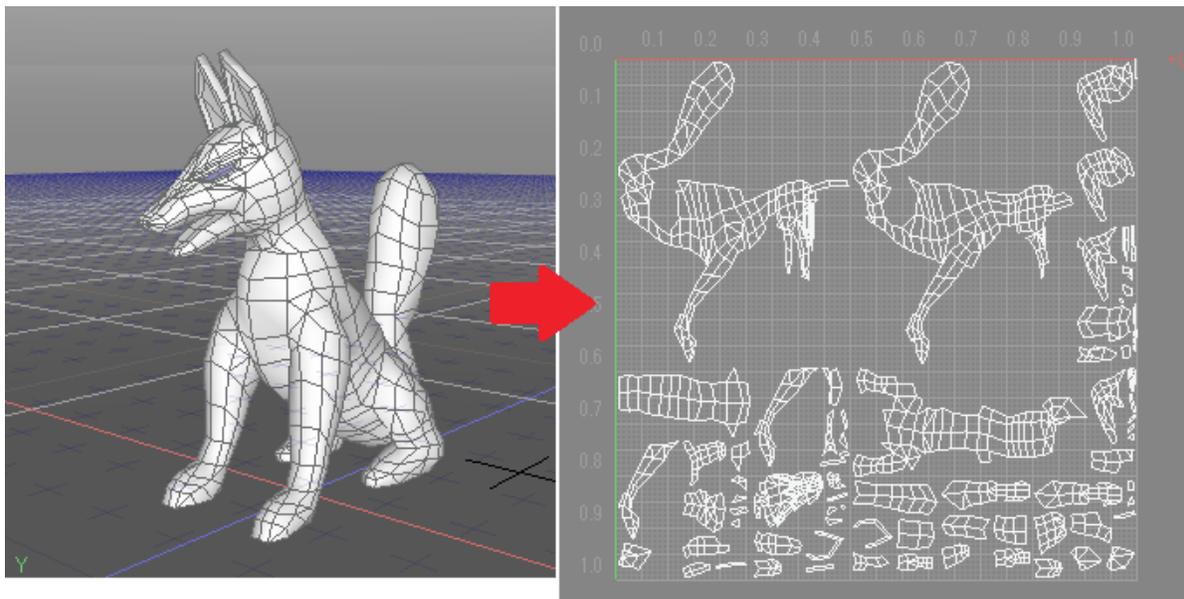
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When the UV layer is selected, it will automatically “UV Unwrap” the polygon mesh. Here, UV2 has been selected as the initial source. This is because UV2 is often used as non-overlapping UV (such as AO map and light-map) in real time tools like Unity.

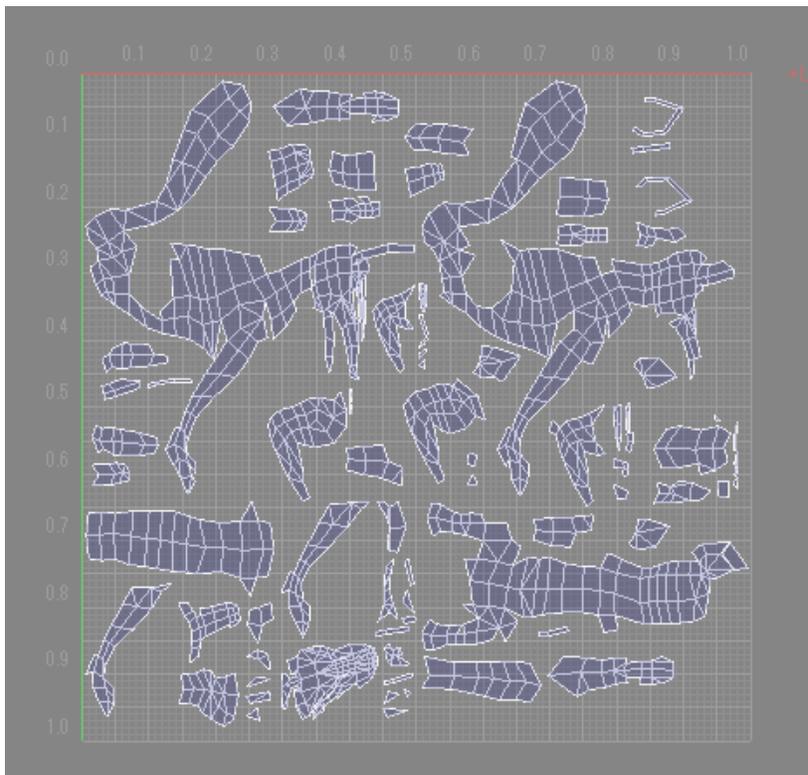
Even if a face is not connected to the polygon mesh, it will get automatically unwrapped. The unwrapping process is done as follow: the largest faces will be displayed on the upper left side going gradually to the smallest faces on the lower right side (see the picture below).

In the example below (samples/okitunesama\_right.shd) the model is automatically unwrapped:



After this “Auto Unwrap”, you will need to manually adjust, resize and optimize the UV surface.

However, it is better to use LSCM first in order to get a clean layout.



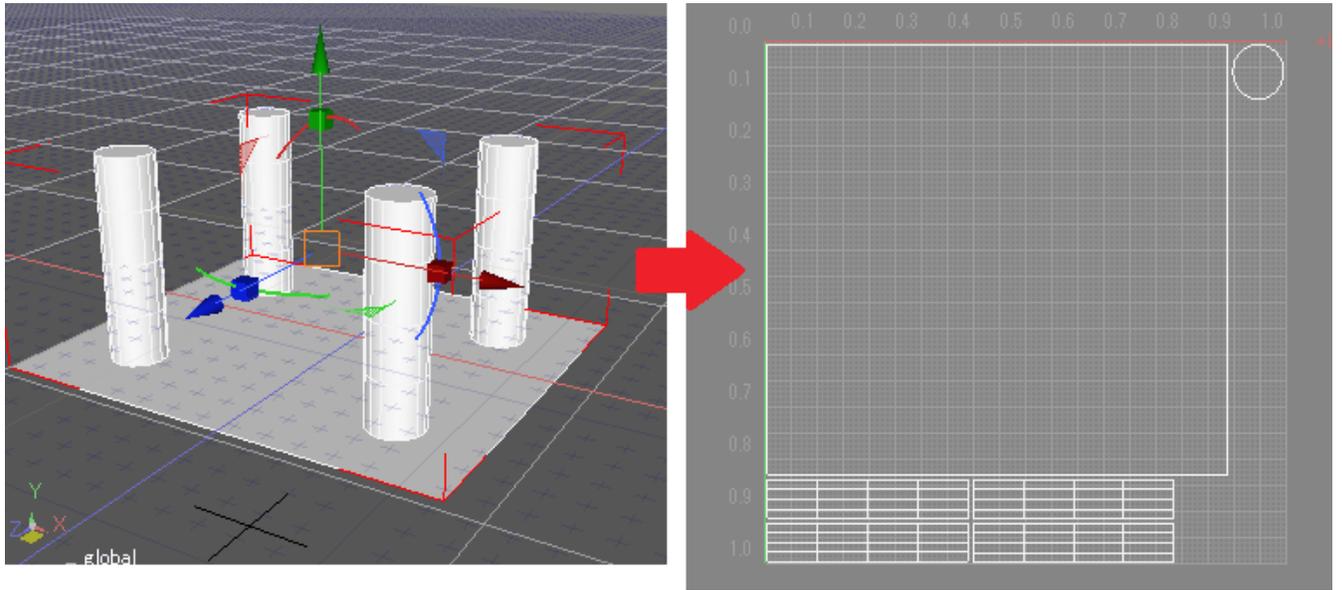
UV coordinate's "Margin" and re-spaced specified interval:

When the "**Check Face Group**" checkbox is turned ON, every "Face Group" of the polygon mesh will be separately rearranged using **one UV coordinate**.

When the "**All Faces**" checkbox is turned ON, the "Auto Unwrap" will affect all faces, regardless of the selection, when it's turned OFF, it will only affect the selection.

When the "**Gather UVs**" checkbox is turned ON, UV Util will try to assign the same UV to a group of same geometries of one polygon mesh.

However, this system is not flawless. If some vertices are misaligned or are in an incorrect position, the geometries won't be considered as the same.



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## Create a Tile Image

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The purpose is to generate a “check pattern” confirmation image.

In the "Attributes" section of the Browser, select "**UV: Create Tile Image**" and then press the "OK" button of the "Create Tile Image" dialog box to confirm the selected settings and create the corresponding “check pattern”.

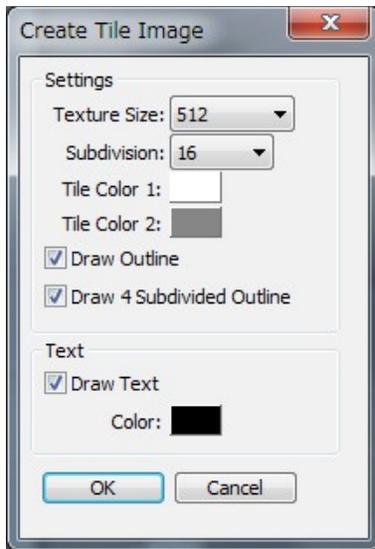
*In Shade 3D ver.15 or later, you can access this plugin's contents from the “Tools > UV > Create Tile Image” menu in the navigation bar or in the “UV: Edit” mode next to the “cross” looking icon. This is very useful to check the UV mapping.*

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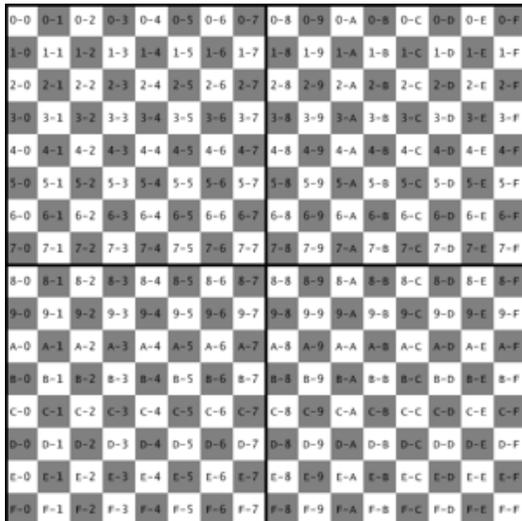
## Usage

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In the "Attributes" menu of the Browser, select "**UV: Create Tile Image**"



In this example, a 512X512 image is will be generated, such as the picture below.



- Specify the size of the texture with "**Texture Size**" (available sizes: 256/512/1024/2048/4096).
- Specify "Subdivision" of the Checked Pattern (available subdivisions: 2/4/8/16/32/64).
- Specify the colors of the Checked Pattern with "Tile Color 1" and "Tile Color 2".

When the "Draw Outline" checkbox is checked, a texture's outline will be generated and when the "Draw 4 Subdivided Outlines" checkbox is checked, a cross will separate the texture in four equal squares.

If the "Draw Text" checkbox is checked, a numerical value will appear in each tile of the texture (you can also specify the color).

## UVUtil: UV layer Select and Copy

With the UV layer of a selected polygon mesh, the UV of the selected surface will be copied.

Once in the Modify mode (Face Selection method), select **"UV: Copy Selected UVs"** from the Attributes menu of the Browser.

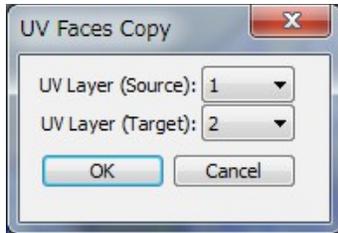
*In Shade 3D ver.15 or later, you can access this plugin's contents from the "Tools > UV>Create Tile Image" menu in the navigation bar or in the "UV: Edit" mode next to the "cross" looking icon.*

This function can be applied to all selected polygons.

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## Usage

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Specify the source UV Layer in "UV Layer (Source)" menu and the target UV Layer in "UV Layer (Target)" menu and then click OK to confirm the transfer.

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## UVUtil: Delete selected UV

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When a specified UV layer of a polygon mesh is selected, this command will remove the selected UV from the surface.

Enter the Modify mode (Face selection), and in the "Attributes" menu of the Browser, chose the "UV: Delete Selected UVs" function.

*In Shade 3D ver.15 or later, you can access this plugin's contents from the "Tools > UV>Delete Selected UVs" menu in the navigation bar or in the "UV: Edit" mode next to the "cross" looking icon.*

This function can be applied to all selected polygons.

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## Usage

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The selected UV of the designated face will be deleted.

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## UVUtil: Image Bake

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For a texture using various values/channels such as Reflection/Transparency and more, assigned to the selected polygon mesh, the image is going to be synthesized. Sometimes various "channels" of a material can be consolidated into a single image. This is the "Image Bake" function.

In the "Attributes" menu of the Browser, choose "**UV: Image Bake**".

*In Shade 3D ver. 15 or later, you can access this plugin's contents from the "Tools > UV>Image Bake" menu in the navigation bar or in the "UV: Edit" mode next to the "cross" looking icon.*

This function can be applied to all selected polygons.

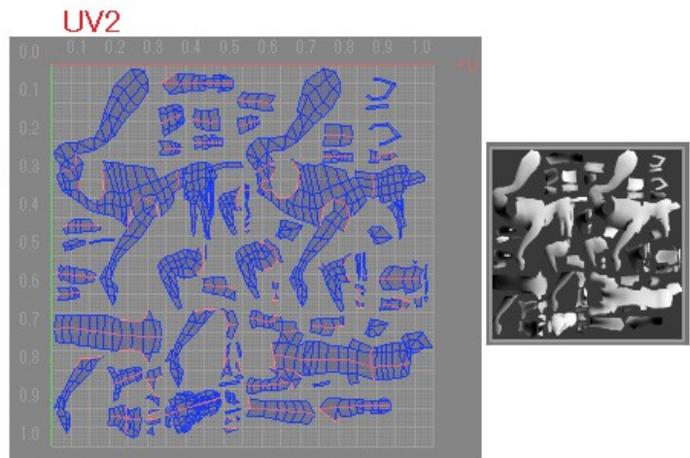
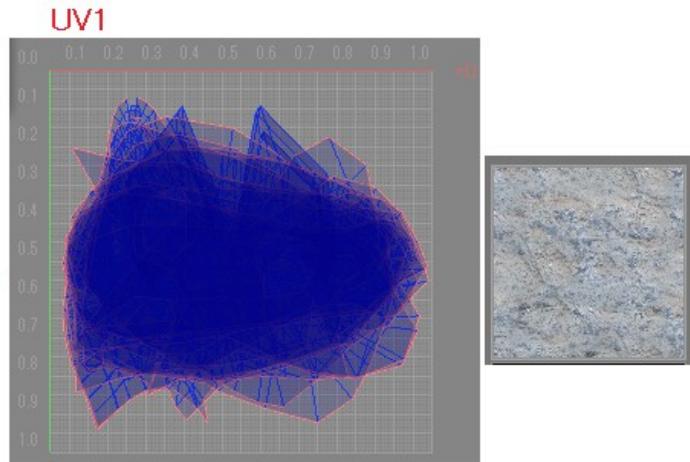
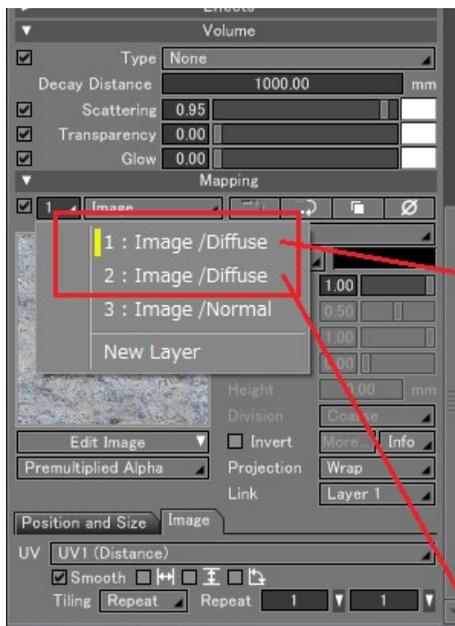
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## Usage

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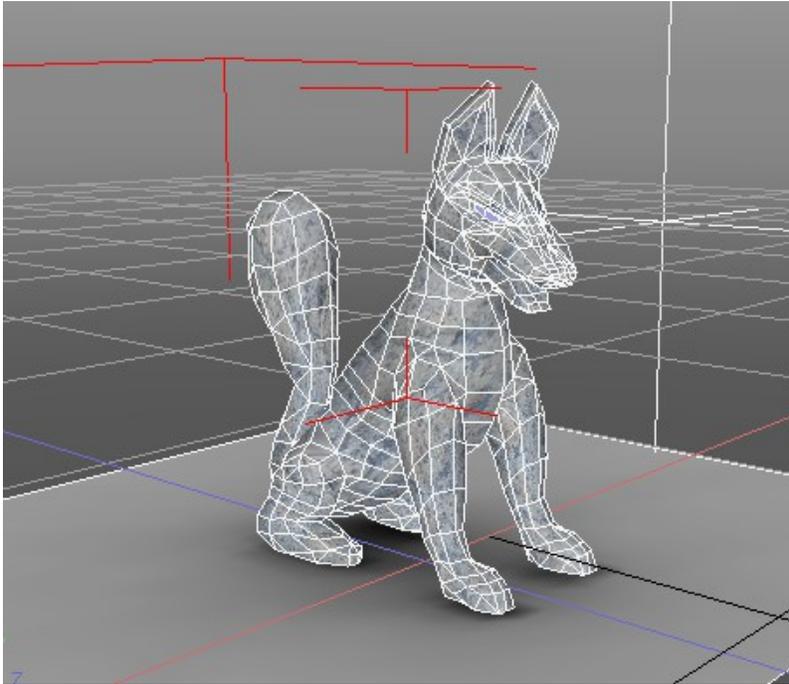
In the following demonstration, the "Image Bake" function is going to be explained using the "samples/okitunesama\_right\_bake.shd" file provided with UVUtil, this model has a 2 UVs texture using several channels/values (Diffuse).





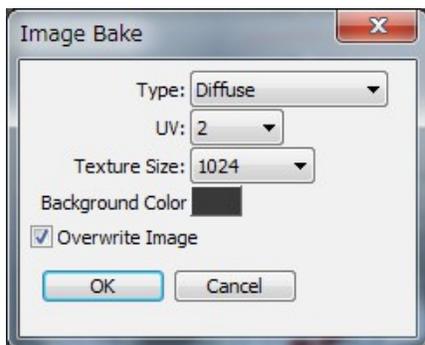
This model uses a texture composed of a Diffused Reflection image (Stone texture, UV1) and an AO Map (UV2). Furthermore, the AO Map texture Mapping Method is set to "Diffuse > Multiply". Once the rendering is done, a dimmed shadow appears, this is the AO Map effect.

In the perspective view, only the Stone texture or the AO Map are visible.



Here, the "Image Bake" process will be applied to the 2 textures in a Diffuse mode.

Select the Polygon mesh and then in the "Attributes" menu of the Browser, select "**UV: Image Bake**".



In the "Image Bake" dialog box, the Type is set as "Diffuse" (the available types are Diffuse/Reflection/Transparency/Roughness/Bump/Normal), specify the UV layer to be baked in "UV" option.

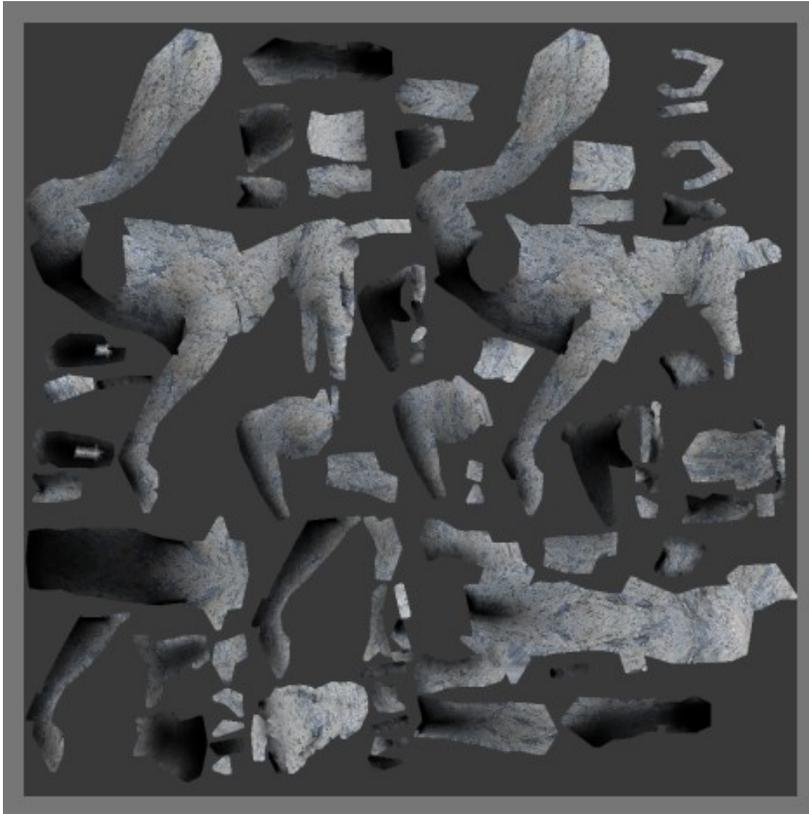
Make sure that the specified UV layer has no overlapping faces.

Specify the texture size in "Texture Size" (the available sizes are:256/512/1024/2048/4096), in "Background Color", select the background color of the layout of your unwrapped model.

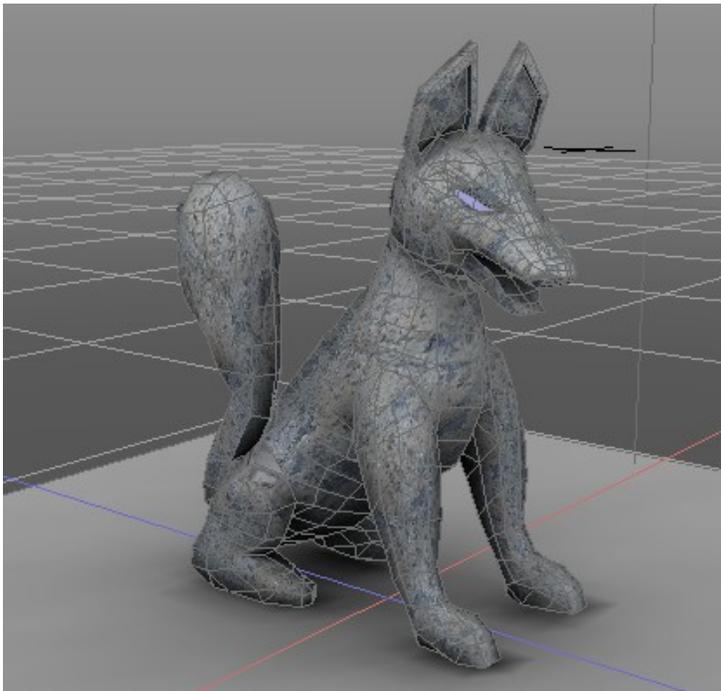
When the "Overwrite Image" option is turned ON, you will re-update the texture in the case of this texture being generated many times. Then, "Bake" the Texture associated to the selected polygon mesh.

When it is turned OFF, a new texture will be formed each time of the "Image Bake" process.

In this example, the "Type" is "Diffuse" and the UV number 2 is selected, press the "OK" button. From 2 Diffuse Mappings referring to "UV2", only one image is going to be generated:

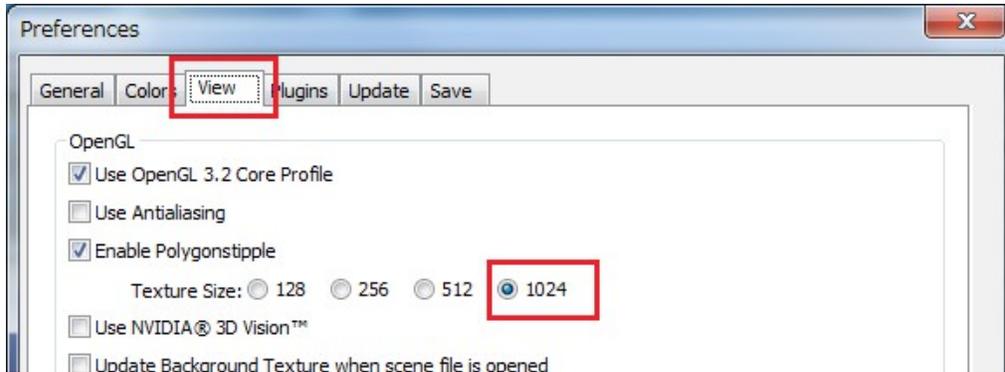


A new Master Surface is created, the "baked" image, designated as a Diffuse reflection texture (referring to UV2) will replace the original Master Surface and the object's material.



The two combined textures are now visible as only one in the perspective view.

Note that the default visible Texture Size in the Preferences of Shade 3D is set to 256, you can change it to 1024 in the "View" tab of the **Preferences** menu.



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## Restrictions

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- "Wrap" Projection mode only is supported for the Mapping Layer of UV Map.
- Mapping Layer synthesis is compatible with "Normal", "Alpha" and "Multiply" blending modes.
- Mapping Layer's image works with "Premultiplied Alpha" and "Transparent Alpha".
- Mapping Layer's image works with the "Invert" option ON.
- Only the "Repeat" Tiling mode is supported for the Mapping Layer's image.
- The "Horizontal Flip" and the "Vertical Flip" of the Mapping Layer's image are not supported.

Only Mapping Layers listed above are supported.