Texture Studio Manual

Introduction

Texture Studio is a professional quality tool designed primarily for game development, although it can be used to create tiling backgrounds for web pages, etc. Texture Studio includes a set of integrated tools, all extremely useful for creating high-quality seamless textures. Texture Studio is so easy to use, a photograph can be converted to a smoothly tiling, seamless texture with a single click.

Basics

The user interface of Texture Studio is very simple. A large square section to the right displays the image you are editing. To scroll the picture, simply drag it around with the mouse. To zoom in/out, hold the right mouse button down over the picture while you slide the mouse up and down. Note: The image display shows a tiled version of the image, so that any seams are apparent when zoomed out slightly.

The bar at the bottom of the screen has two buttons; Back, and Next. These buttons may be used to step through each process stage. Alternately, you can jump directly to a certain stage using the Tools. When the stage is changed, the controls in the panel on the left side of the window also change. Each set of controls and their actions are described below in detail. Note: When you make adjustments to controls, the changes will not take effect immediately. This is because processing a large image may take several seconds, and this delay allows for you to adjust multiple settings before the processing begins. When Texture Studio is currently processing an image, the bottom bar will display red text specifying what the computer is doing, along with a progress bar.

Perspective Correction

The perspective correction stage is a very important feature of Texture Studio. Perspective correction allows you to fix the perspective of objects at an angle from the camera so that they directly face the camera. For example, if you took a picture of the side of a tall building, the perspective you used would most likely be near the base, looking up slightly. This would create the effect of the building being larger at the bottom (closer) and smaller at the top (farther). This is not good for a tiling texture, and perspective correction is the solution to this problem.

Using Texture Studio's perspective correction is quite simple. If you are editing the perspective correction stage, and an image is loaded (Tools -> Perspective Correction), the

preview window should show a flashing square with a yellow dot at each corner (if you don't see the square, try scrolling the picture around or zooming out). Each dot can be moved around by dragging it with the mouse. Notice how the repositioning a dot warps the square. Using the dots to manipulate the square, you can "select" an area in the photo to "extract". With the same example as above, you would move the bottom left dot to the building's bottom left corner, the top left dot to the building's top left corner, and so on. When the dots are properly positioned, click "Next" or skip to any other stage to see the results. If positioned properly, the results will show the building as if you were looking directly at it.

Additionally on the perspective correction control panel are two text-boxes located under the text "Texture Dimension". These adjust the size of the texture after the perspective correction has been performed, and will eventually be the dimension of the final texture. You may put any value in these text boxes, although any number you put in will be rounded off to the nearest power-of-two value (128, 256, 512, 1024, and 2048 are all power-of-two values). The reason for this is that many video cards do not support textures that are not sized based on power-of-two values, and Texture Studio's image display would cause issues with these cards, since Texture Studio takes advantage of hardware graphics acceleration.

At the bottom of the perspective correction control panel is a button which can be used to load an image into Texture Studio for processing, although the same thing can be done using the File -> Open menu item.

Shadow / Highlight Correction

Shadow and highlight correction darkens and lightens sections of an image to equalize the level of brightness. This helps to eliminate noticeable patterns which appear when even seamless textures are tiled. The shadow and highlight correction stage's controls consist of two sliders. One, labeled "Correction Level" adjusts the intensity of the correction. The other slider, labeled "Light Variance" adjusts the fineness of the effect. Setting this value very low may turn the image into a gray blob, since all the changes in lighting that make the texture of the image will be gone. Inversely, setting this very high will leave most shadows and highlights. Various settings should be experimented with for best results.

Sharpness / Contrast

The sharpness and contrast stage is useful to enhance the visual quality of an image. Two sliders found in this control panel, once for sharpness, one for contrast. While the sharpness adjustment can greatly some images, others may not look at nice. Sharpness

also adds specular highlights to an image, giving it a crisp, un-blurry look. Sharpness adjustment can even be used to adjust an image so it looks almost identical to a higher resolution version of the same image.

Texture Studio's contrast adjustment is no different than standard image contrast effects. Moving the slider to the right will increase the range of colors in the image, while sliding it to the left will decrease the range, usually making the image dull and gray.

Seamless Tiling

Texture Studio's main feature is it's ability to make a texture seamless. When an image is tiled (repeated over and over as if it were tile), seams will appear along the edge of the image. This is because one edge of the tile (texture, in this case) does not smoothly match up with the opposite edge. The seamless tiling control panel contains three sliders and two check boxes. The purpose of the two check boxes is simple; checking and un-checking them sets which direction you would like the texture to be tile-able.

The first slider on the seamless tiling control panel is labeled "Seam Gradation". This slider adjusts the length of the color transition between seams. For example, if an image has more of one color on the left side than the other side, this will smoothly correct that. If this value is too low, the color transition may be too evident.

The second slider controls the seam blending. Seam blending is performed after the seam gradation, to ensure no seams are left. The third and final slider is labeled "Gradation Variance (Advanced)". This slider controls the variance of the gradation effect, and should be used mainly for fine-tuning the results. You may also need to move this slider farther to the right if the texture's resolution is very small. All of these sliders should be experimented with to achieve best results.

Preview / Save

The last "stage" of texture studio is the preview and save stage. This is not actually a stage, as it does not perform any image processing. The intent of this stage is so you can easily switch between "before" and "after" stages, and compare the results with the original image. When you like the results, this page additionally provides a "Save Texture As.." button to save the image (File -> Save As.. could be used as well).

About Texture Studio

Texture Studio Ver. 1.0 was designed and programmed by John Judnich. Texture Studio utilizes the BlitzUI user interface library for Blitz3D (the programming language used to develop this application). Texture Studio is Copyright © 2005 John Judnich.