

3D Artist ⁵⁵™

Practical inspiration for the 3D community

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ESTIMATED
TIME TO
COMPLETE THE
TUTORIAL

1 HOUR



With the Disc

Tutorial files:

• Tutorial screenshots

3ds Max, After Effects

Stereoscopic 3D animation

“How can I quickly create a convincing 3D scene within a production?”



During the production of my new short film, 'Selfillumination' (watch it on www.ak3d.de), I discovered a very helpful stereo

3D workflow. Here I'll reveal this workflow and show you how to get a high-quality 3D effect in the most intuitive way.

In essence, stereographic 3D content is two complete movies viewed from two different perspectives. This produces one film for the right eye and one for the left, which may sound easy to achieve in 3D, but there are some rules that we need to follow to accurately achieve the effect.

Firstly, we need to think about the target point of our camera while creating the scene. This is because, in reality, both of our eyes are constantly focusing on the same point in space. If an object is near to us, our eyes are rolling towards each other, but on distant objects they're rolling on a parallel level. You can test this by moving your finger from far away up to the tip of your nose. By focusing your eyes on the finger, you'll see how its background is dividing more and more. In stereo 3D we need to achieve this focus properly, as we

also need to consider the space before and behind the screen. The depth point where both images are the same is the convergence point or plane. All objects in that depth are easily watchable, so this is where our story should occur.

We also have to think about the scene's scale and the final screen sizes. Louis Marcoux has produced some very good tutorials about this and I would highly recommend that you watch these as they explain a lot about stereoscopy and how to achieve the effect in 3ds Max. He also wrote the StereoCam modifier that we'll be using here, but with some additional tricks. Follow this link to discover more: www.tinyurl.com/LouisMarcoux3DA.

Please watch these video guides, as they'll help you understand the basics of a good stereo 3D scene. We'll use the StereoCam plug-in as it is, but with some small scripts to make the keyframing phase easier and even more intuitive.

To finish off this project, I'll present you with a short insight into working in After Effects and how you can go about testing your 3D output.

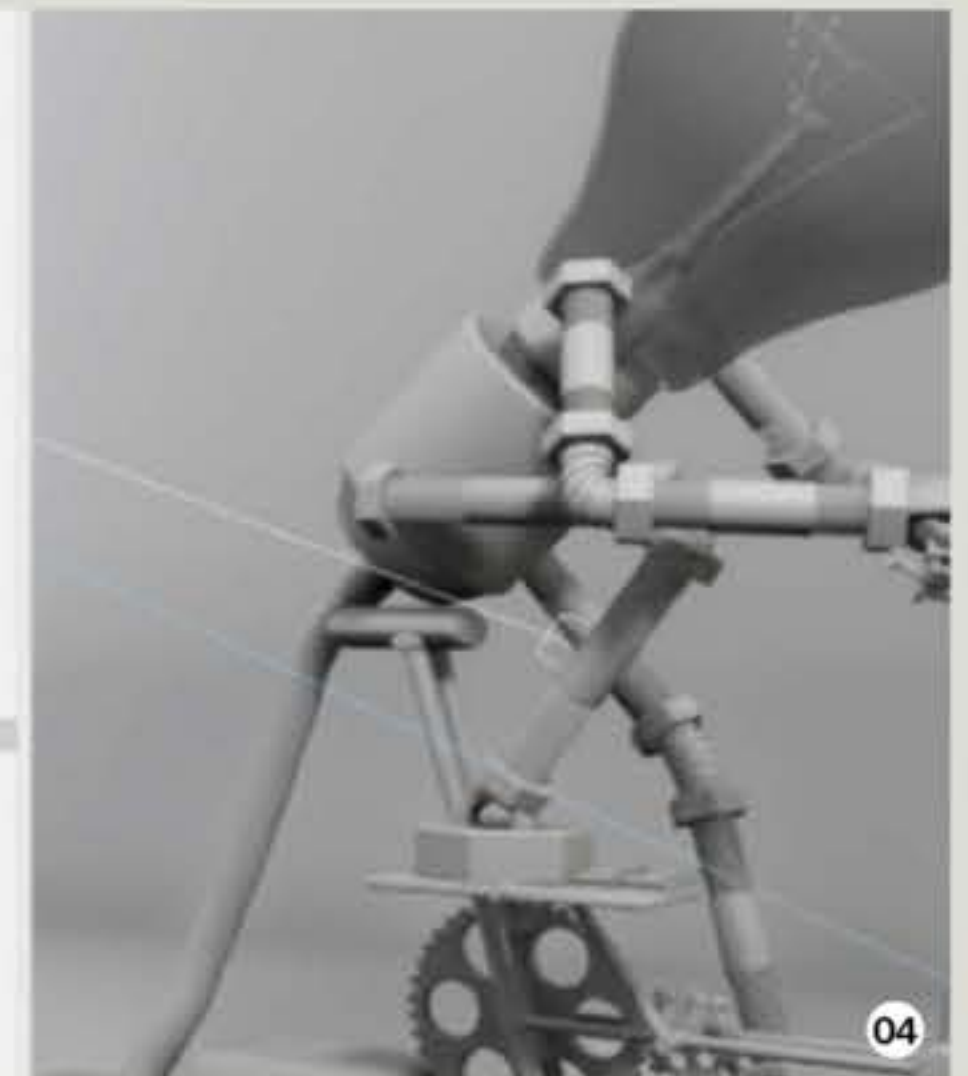


01 The StereoCam modifier

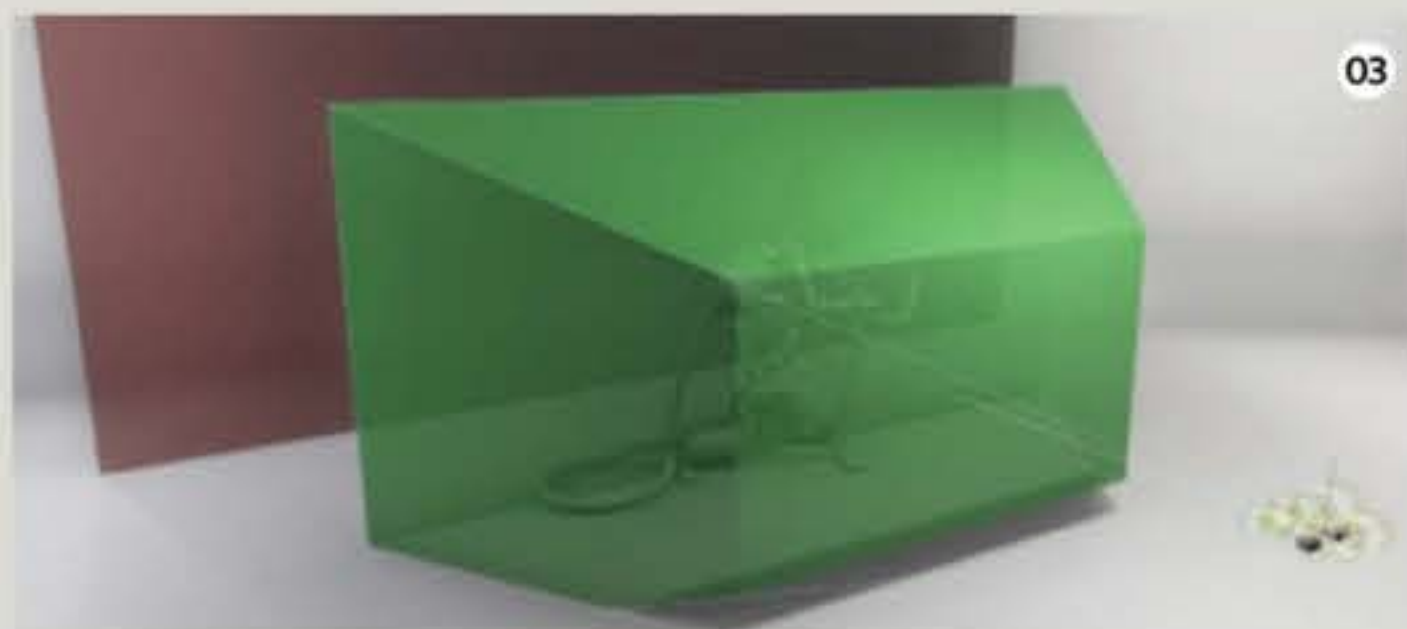
To begin we'll download and install the StereoCam script. The best way to do this is to download the script and copy it to your `\3dsmax\scripts\startup` folder. This tool makes a lot of steps easier, as it makes the 3D convergence plane visible in the viewport. In the modifier's settings we can set up the final screen size, the eye distance and a lot of other features.



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02 Set up a free camera

The StereoCam modifier is created for use on a Free Camera. However, as most of us are more accustomed with animating a Target Camera, I'll describe how to set up a scene for creating an easy workflow using a Target Camera. Firstly, create a new Free Camera and name it 'S3D_Camera'. With this selected, go to the Modifier panel and choose the StereoCam modifier. This will create two new cameras that we'll use for the rendering stage later.

03 Advanced camera settings

For easier camera animation, add a new Target Camera and name this 'Mastercam'. This camera is the only one we'll be animating. The aim of the workflow is that we only animate this camera and camera target, while any 3D camera follows it properly and gets the correct values for the important Target Distance and Field of View. For this, we have to link the S3D_Camera to the Mastercam and align both cameras to the same position.

04 The first script

For forwarding the correct values from the Target Camera Mastercam to the Free S3D_Camera, we have to set up three little scripted controllers. Select the S3D_Camera and open the Graph Editors menu. Unfold all the values of the S3D_Camera, right-click on Projection Distance, choose Assign Controller and then the Float Script controller. In the next screen, insert the script: 'Cam.Target_distance/(Cam.modifiers[#StereoCamera].StereoScale/100.0)'.

05 Add more scripts

Now repeat these previous steps for two further values. For the Field of View, enter: 'DegToRad \$Mastercam.CurFOV'. For the Target Distance, enter: '\$Mastercam.targetdistance'. These three little scripts force the Free Camera to take all values from the Target Camera. We are now able to completely hide the S3D_Camera and only work with the Mastercam. This can now be animated like any normal camera, but keep in mind that the convergence plane (the screen) is always on the depth of the camera target. This way we can easily decide which parts of the scene should be in front of or inside the screen.

06 Achieve a stereo effect

Finally we can create an animation using the Mastercam and its target. When it comes to rendering, we have to remember to render out only the S3D_Camera_StereoLeft and S3D_Camera_StereoRight cameras that were created by the StereoCam modifier. In After Effects, we can import these two animations into one composition, with the left movie above the right movie. Place an adjustment layer onto these two movies and add the effect 3D Glasses onto that. After setting up this effect correctly, we can choose which 3D format we would like to render out.



06

The best 3D viewing experience

For checking the 3D stereo effect, it's best to have a 3D monitor that's compatible with NVIDIA 3D Vision. If you don't have this, simple red/cyan glasses also work. For the final output on a 3D flat TV with shutter glasses, the format side-by-side is good. For the best quality, encode two full-HD streams onto a 3D Blu-ray. Studios use Sony Vegas Pro for encoding the frame, packing full-HD streams onto a 24p 3D Blu-rays. Stereo 3D may be a hyped technology at the moment, but as soon as 3D screens without glasses are available at lower prices, it could become a new standard for 3D production, just like HD.