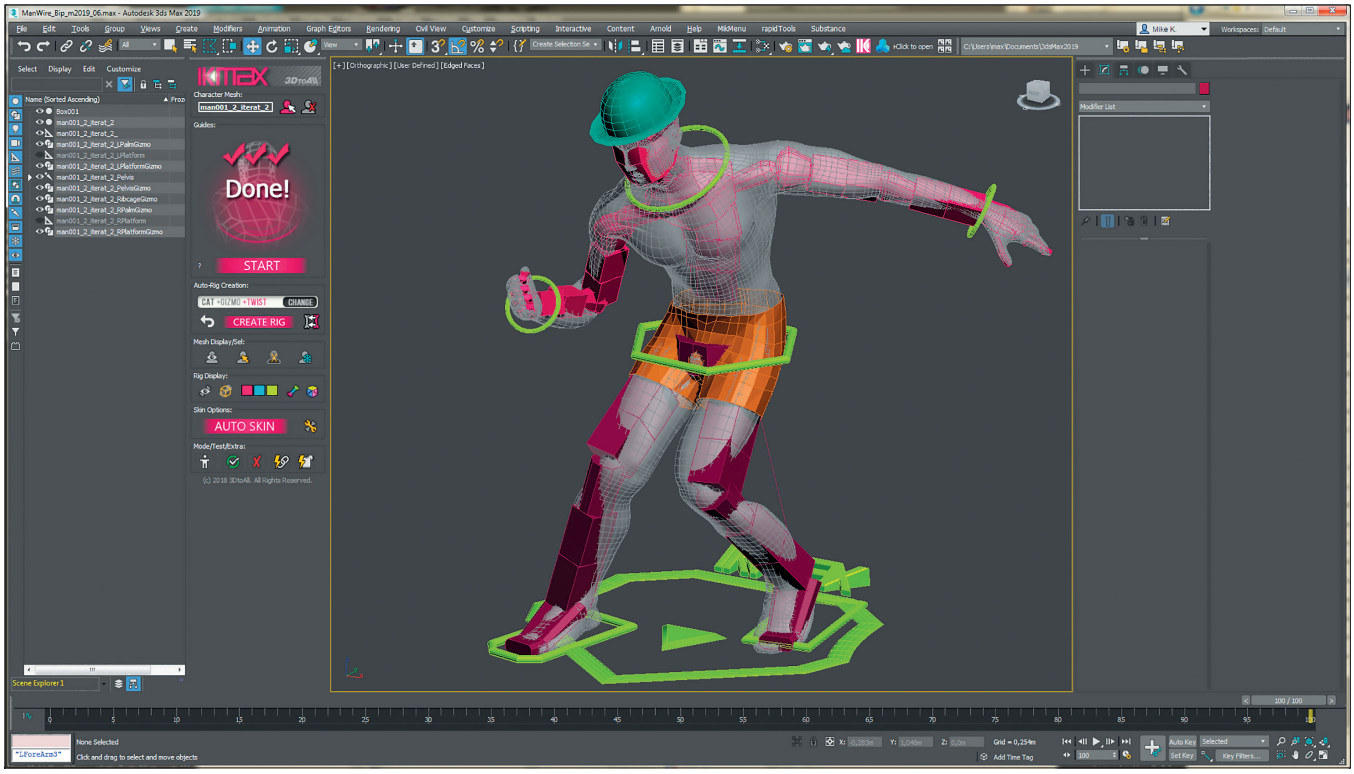


IKMAX

Fifteen years ago, there was a script called Autorigger in which you placed self-made helpers in strategically important positions on the body and a rig was automatically created. Recently, I found a new script, which follows a similar approach. This is IKMAX from 3DtoAll (www.3dtoall.com/products/ikmax). Again, the rig and the helpers are semi-automatically created plus a handful of new features.

by Mike Kuhn

Installation is easy: Start the IKMAX installer or manually copy the appropriate folders into the 3ds Max installation directory following the attached instructions. This is followed by the usual procedure, in which the button for the script is inserted in the user interface via „Customize User Interface". With a click on our new button, the script opens and automatically docks on the left side.

Workflow

The workflow is also pretty straightforward. You start at the top of the menu and work your way down. So I select my mesh and define it as a character mesh by clicking on the top middle button. This automatically freezes the model and pops up a window with the message that no guides have been found and you want to place them now. As soon as I confirm this with „Yes", the IKMAX menu displays images with one green dot each, where I should position the guides. On my mesh, I see a narrow cylinder that aligns with the surface and penetrates the mesh. So I not only see at which point I hit the surface, but also the angle. Because this cylinder also penetrates the mesh, I can very well estimate whether I am nicely centered. I also find the use of a temporary light during the placement of the Controll Guides pretty cool. This not only looks stylish, but also makes it clearer where you are right now. Especially with the fingers, all this together is very helpful.

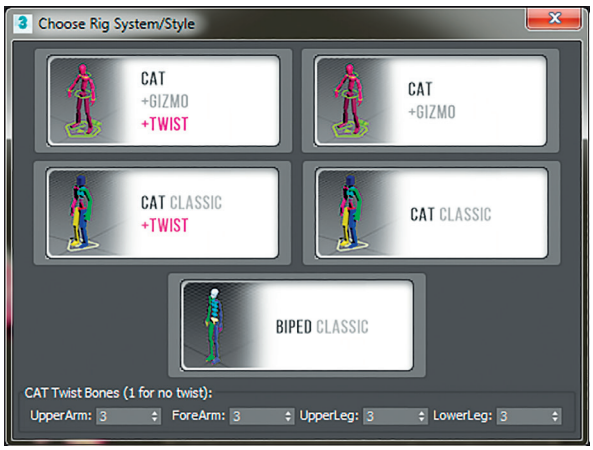
After placing all given control points on the left leg, the left arm and all the finger segments, a new window appears with pictures where the automatically pre-placed control objects should be best. These are box helper objects for the pelvis, rib beginning, chest area, neck beginning and end and at the top tip of the head. These were, as already said, automatically placed by the script and can be positioned by me at my discretion. Now I should also check the positions of the control points and adjust if necessary.

If everything seems appropriate, we could press the „Create Rig" button. But before that we can choose what kind of rig to create. By default, the CAT rig is set with gizmos and twist bones. Alternatively, a CAT rig with gizmos without Twist Bones can be set, both variants also as Classic CAT rig and as a character studio biped. But now I push the button „Create Rig", and the script builds me a nice, symmetrical rig, which is already equipped with all logical IK solvers.

Adjustments

If the Rig of the Bones does not quite fit what you want, you can adjust the Bones on the left side of the rig until they have the desired position and length. Since the script is based on the CAT system by default, we are currently in customization mode. For the normal 3ds Max Bones, this would be Bone Edit Mode from the Bone Tools. So now we

The user interface of IKMAX explains itself for the most part already.



Depending on for which use the figure is processed, you can define in advance what kind of rig will be created.

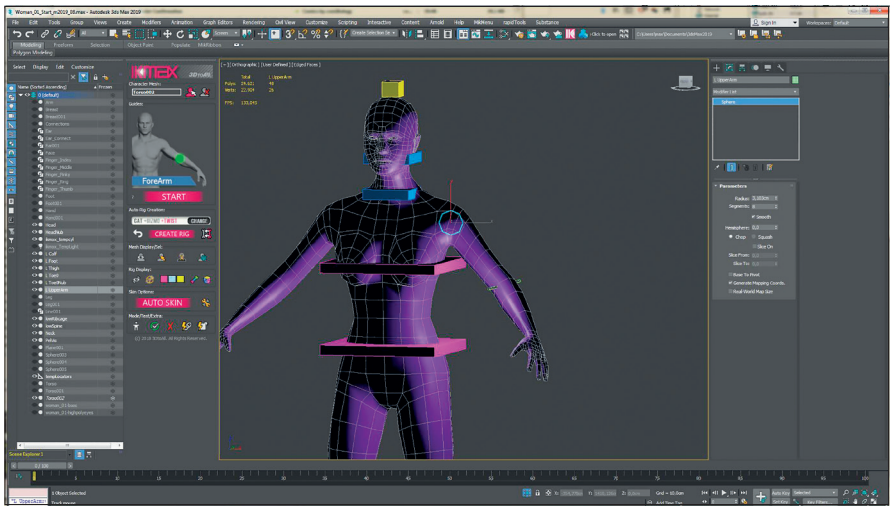
can position each bone, and the parent bone will stretch to leave its pivot in the same position and still be connected to the hierarchically subordinate bone being moved. Now that everything on the left side looks like I like it, I now press the button to the right of the „Create Rig" button, mirroring the changes made to the right side as well.

If I am not satisfied, I can still press the button to the left of the „Create Rig" button to remove the whole rig, better position the control points and then create a new rig.

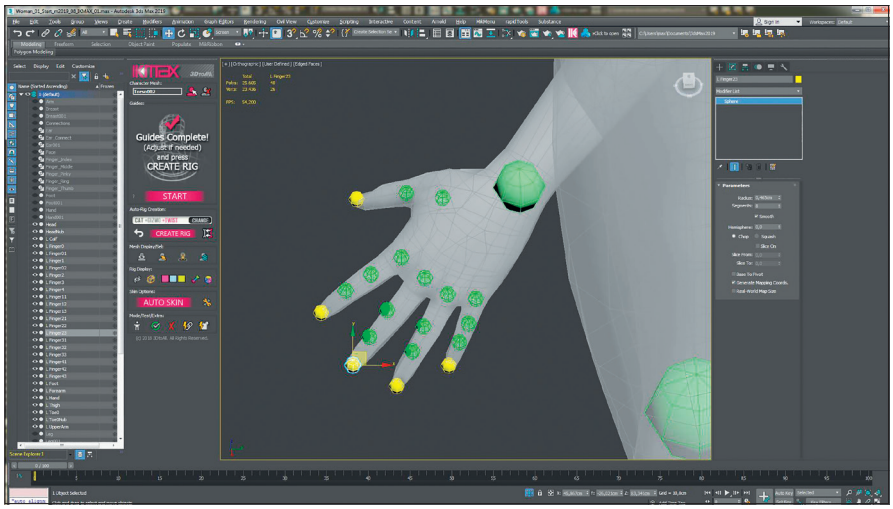
Tools

In the next two sections, we find various tools to freeze, clear, hide or select the mesh, as well as tools to hide the rig, display as boxes, or change the rig's colors. In the area underneath is the big „Auto Skin" button, which does exactly what it says. Next to it we have a button that opens a new window where we can do a fine tuning for skinning. As soon as the window opens, the mesh is also automatically selected and the skin modifier sub-object mode is activated. Here, the areas of influence for individual body areas can be adapted very quickly. On the one hand, we can globally set the falloff, that is, the soft transitions of the weights between the bones, but also specifically for the arms, the legs and so on. Here I hope that we can influence even smaller areas such as upper and lower arms in the future. In this window we also have quick access to the voxel solver. This is a very handy tool, which was added to 3ds Max just a few versions ago and allows a very good automatic adjustment of the weighting of skinning.

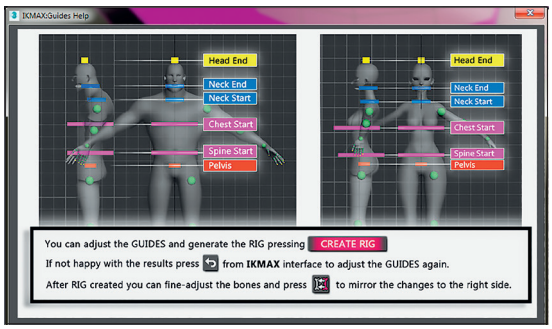
There are two more tool groups in the row below the skinning area. In the left panel, we can switch to animation mode to animate the character and adjust the shape and position of the bones. Next to it is a button for a ready-made animation to see if the positions of the bones and joints as well as the weighting of the skinning fit. This is followed by a button to delete all animations. The other two buttons are there to add more objects to the rigging construct.After a character has been rigged and the mesh has been applied skinning, it may happen that additional objects must be hung on the construct. If it's a crown, I'd just need to link it to the head bone. In the case of swimming trunks first a skin-wrap modifier would have to be placed on the geometry of the trunks before it could be linked to the geometry of the character itself. Skin Wrap is very similar to the Skin Modifier, except that it is controlled not by bones, but by the faces or vertices of an underlying mesh. In IKMAX, I would select the crown and press the button for fast-attach,



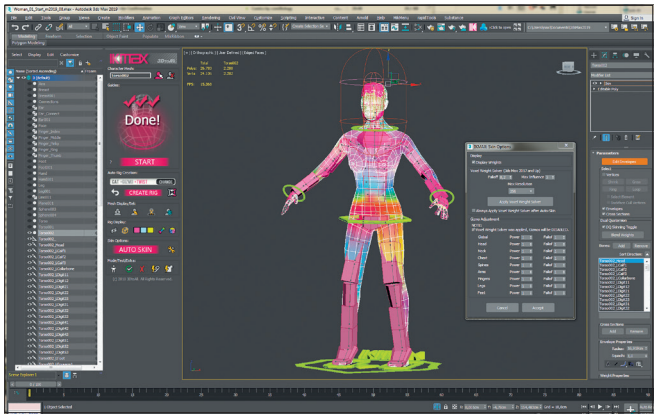
The guides are placed by placing the helper objects on the surface.



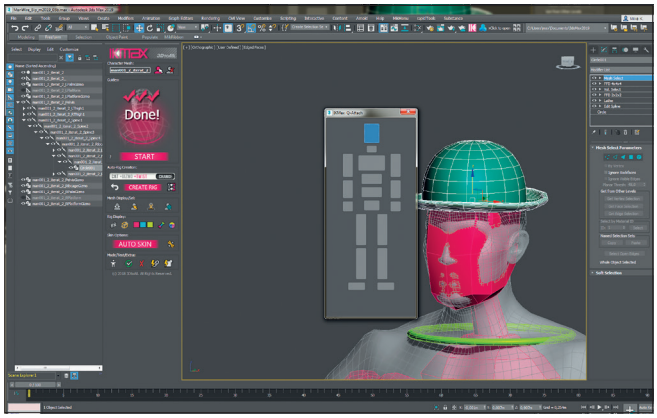
After the control points have been finished, they can still be adjusted, if necessary.



The in-screen help shows where the initial control objects should be placed best.



In Skin Options, you can fine-tune how much the bones affect the mesh's areas.



Additional objects can be quickly and accurately attached to the rig.

then select the part of the body I want to link to in the displayed graph. In the case of the swimming trunks, I select these and press the button „Auto SkinWrap" - and it's done. Well, linking objects to the characters' bones only saves a little bit of time, but swimming trunks cannot put on faster.

Need for improvements?

When setting up the control points for the rig, I personally do not have the option to define in advance how many fingers the character will have, or a skip if the default asks for the next few fingers, if the character was modeled with hands like simple mittens. Let's see what kind of updates there will be. In the C4D version you can just press „Create Rig" if you think you have enough finger control points. In the 3ds Max version, I just delete the bones I do not need before skinning.

On some of my models, the helper splines for the feet floated somewhere at the hips. After a bit of thinking and analyzing the scene, it quickly turned out that the mistake was in front of the screen. These were scenes in which the figure was not standing with his feet on the zero level, but rather hanging with his hip in the zero level. As soon as I placed the figure clean on the floor everything looked fine.

Am I left alone?

When I bought the script and tried it for the first time, I looked through the user interface to get an overview of what I had to do. Next to the start button, I found a question mark and the tooltip said „Help". So I pressed on it and it appeared a pop-up, with a friendly „Hello" written in it. As encouraging as that was, it did not help me much at this point. There was also a button in this window that should lead to online help. However, by doing so I only got to the website 3DtoAll.com. It was late at night, so I just tried the rest of the script and intuitively came to a conclusion. In the end, the UI is not too complicated to understand. However, Marcelo L. Bruno, the creator of this script, also offers support via e-mail, teamviewer or Skype on his website. So I wrote him on the day with a long list of questions and a short time later received an answer and a new IKMAX.mse, with which I should exchange my previous one. The friendly, but lonely „Hello" remained for the time being, but the link to the online help worked already. In the end it turned out that with the installation exactly one picture, namely the picture, which should be indicated in the help, was not copied. Even though this was just a minimalist problem, 3DtoAll took care of it very quickly. Shortly thereafter, an update for all was published.

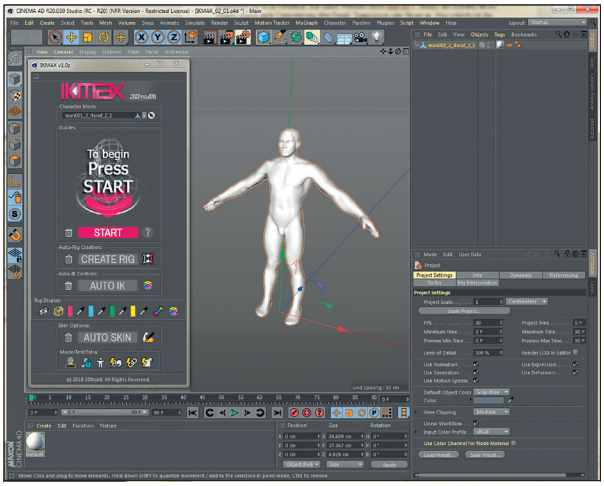
And Maya? And C4D?

The version of IKMAX for Maya is announced for January and could thus already be on the market when this issue of Digital Production appears. The version for C4D came out in early December of last year, and I could try it out already. There is hardly a simpler installation. Just copy the downloaded IKMAX folder to the plug-in folder in the C4D installation directory. If there is no plug-in folder, just create one. In C4D you will find the tool in the plug-in menu.

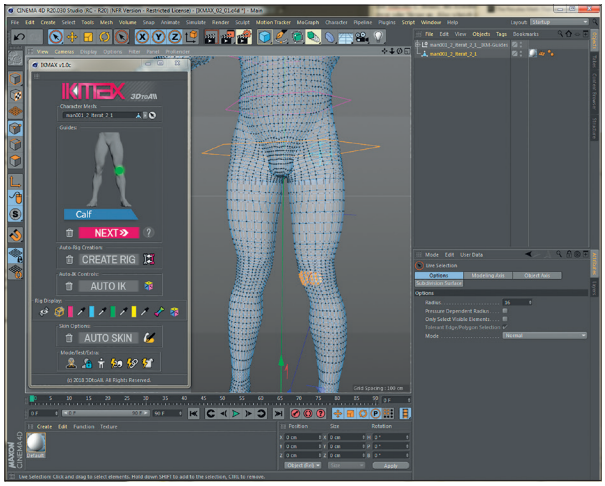
In principle, this version works relatively similar to the 3ds Max variant. Also, the interface looks almost identical. In C4D I first press the arrow for the character mesh and then select the geometry. Instead of touching the surface as in 3ds Max, in C4D I select a few vertices in the area where I want to place the corresponding guide ball, then jump to the next guide to place with the Next button. Here I would be glad if we did not have to constantly press this button, and hope that Marcelo let us define a shortcut for this purpose. In 3ds Max, the rig is also used to create the IK at the same time, in C4D we have a button for creating the rig and another for adding the IK. Also, the other features that I have discussed in this article, such as adjusting the left side of the rig and flipping it to the right, coloring the rig, quickly attaching objects or clothing, are available with slight modifications for C4D as well, including an additional option to create a rig for the eyes. Thus, the Maya version will probably be similar.

Conclusion

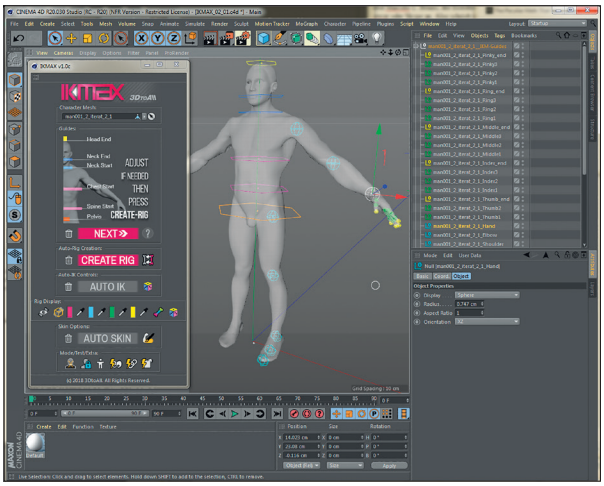
It certainly speeds up many steps for rigging and skinning. The script I will definitely use in these parts of the workflow, and the time saved by this already pays back the small purchase amount in a very short time. As a goody for all DP readers, Marcelo has sent us a special code (dp1902), which you, if you are interested in this script, can use to get a personal discount on the purchase of the script. ›ei



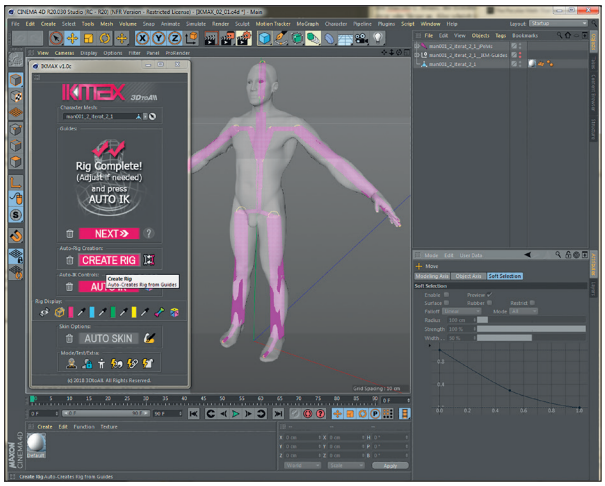
The user interface of IKMAX for C4D



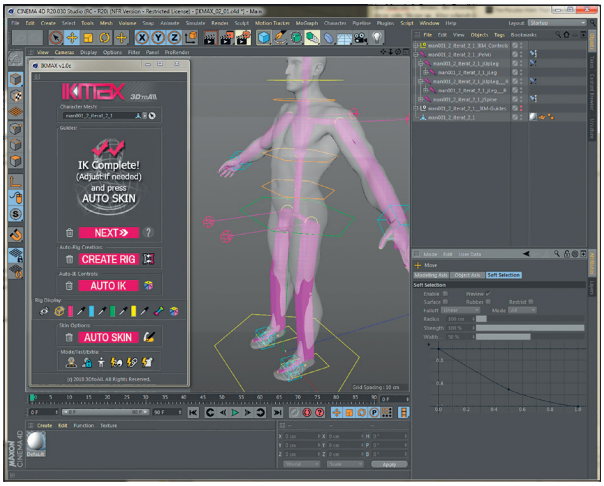
In C4D, the vertices are painted to define the position of the control points.



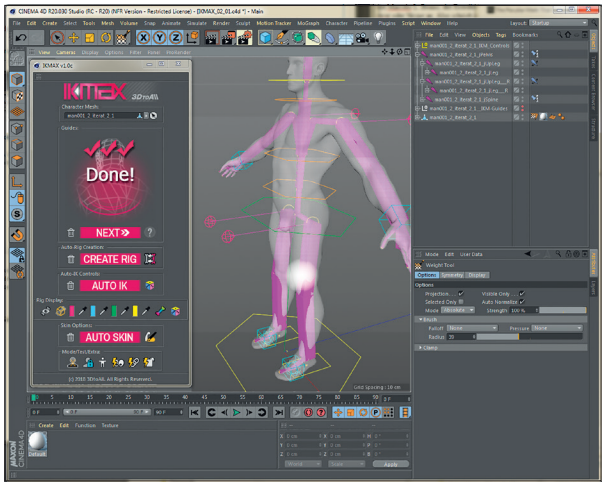
After all control points have been created in C4D, the bones can be created in the next step.



The automatically created in C4D Rig



In C4D, the IK is created by a separate button.



After the Auto Skin weighting can be refined by the Weight Painting.

Mike Kuhn is a 3ds Max Certified Trainer, author and developer with more than 20 years of experience in industrial visualization and various workflows. www.in3.de

Links

3ds Max
▷ https://gum.co/IKMAX/dp1902

C4D
▷ https://gum.co/ikmax-c4d/dp1902