

## Reallusion iClone, 3DXchange, and Mocap Plugin

Sometimes innovation catches you off-guard. One day, you suddenly realize that you've been turning more and more to a solution that you never originally expected to be so useful or important to you. That's what happened to me with Reallusion's incredibly useful software tools.

I first came across Reallusion's software while teaching a course on pre-viz for movies. To refresh, *pre-viz*, *post-viz*, and *pitch-viz* (covered in Chapter 1) are all terms for *pre-visualizations* done at different stages of a motion picture's development. They are extraordinarily useful in the efficient production of a movie. Pitch-viz is done to pre-visualize VFX shots before a movie is in production to "pitch" or sell the movie. Pre-viz is done before a movie is filmed to plan how to shoot complex VFX sequences most efficiently. And post-viz is done after the initial filming of scenes to most efficiently complete the VFX shots using the footage that was actually shot.

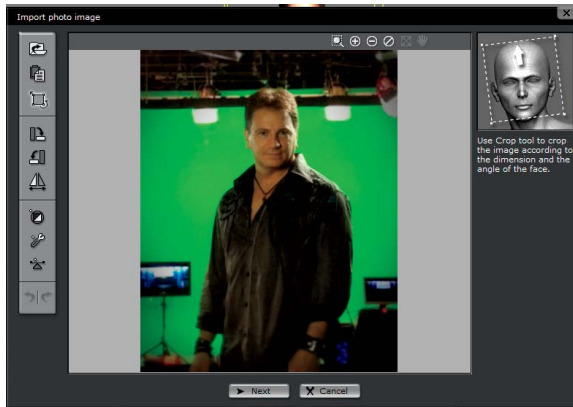
Creating digital doubles for characters was always the realm of character modelers, who required great amounts of time to model, rig, and animate the likenesses of an actor or character. Looking for a way to speed up this process for my own crew, I came across Reallusion's iClone Pro ([www.reallusion.com](http://www.reallusion.com)). With iClone Pro, you don't have to be a character modeler to get a decent-looking likeness of your actor. In fact, you don't really need to know how to model at all, or rig, or perhaps even animate.



**[Figure 15.74]** You start in iClone Pro with a premade character.

To create a digital double, start in iClone Pro with a premade character, as shown in Figure 15.74. Import a photo of the actor or character you want to create (in this case, myself) into the face modification interface (Figure 15.75). You can then set the boundaries of the facial region, as shown in Figure 15.76, and use various tools to move, scale, and rotate the head's perspective (Figure 15.77). You can see the progress of your character in the 3D Preview window on the left as you continue to adjust facial features (Figure 15.78). You have the ability to zoom in to adjust individual facial features in great detail, as shown in Figure 15.79. After adjusting a comprehensive set of position, scaling, rotation, and proportion settings, a likeness is surprisingly easy to achieve (Figure 15.80).

How to get this model into any other 3D application was my next concern. Again, to my surprise, Reallusion confidently stepped up to the plate with another amazing tool: 3DXchange (Figure 15.81). 3DXchange allows you to take models and animations and convert them to formats usable by almost



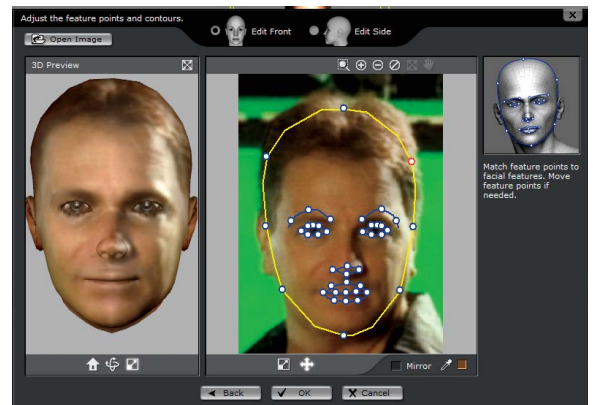
**[Figure 15.75]** Import an image of the character or actor you want to create.



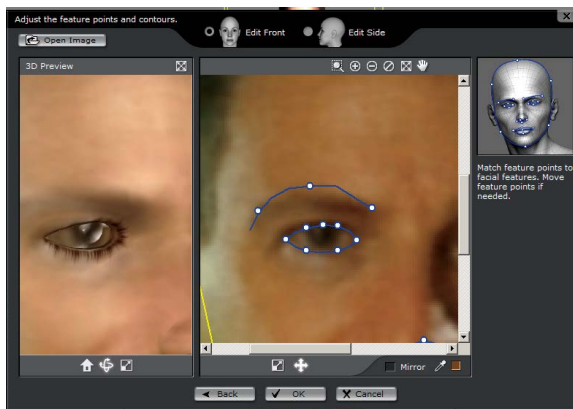
**[Figure 15.76]** Set the boundaries of the facial region.



**[Figure 15.77]** Move, scale, and rotate the head's perspective.



**[Figure 15.78]** You can see the progress of your character in the 3D Preview window.

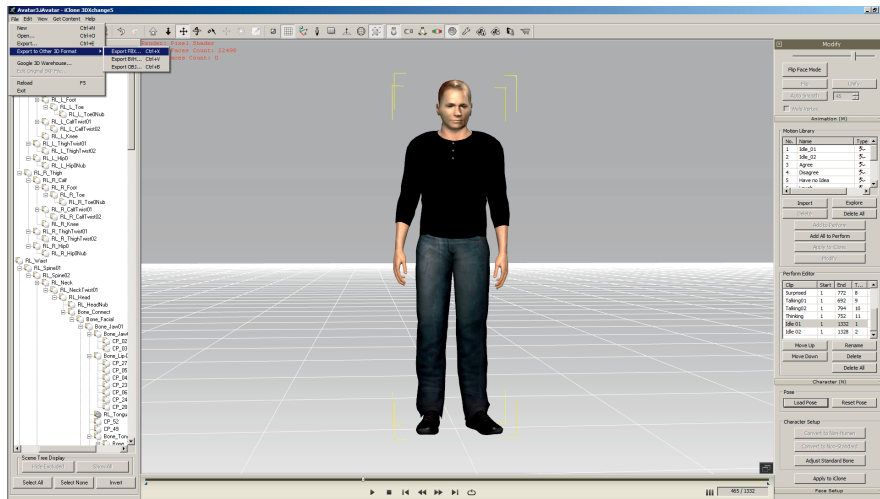


**[Figure 15.79]** Zoom in to adjust individual facial features with high precision.



**[Figure 15.80]** After adjusting position, scaling, rotation, and proportion settings, you can easily create a likeness.

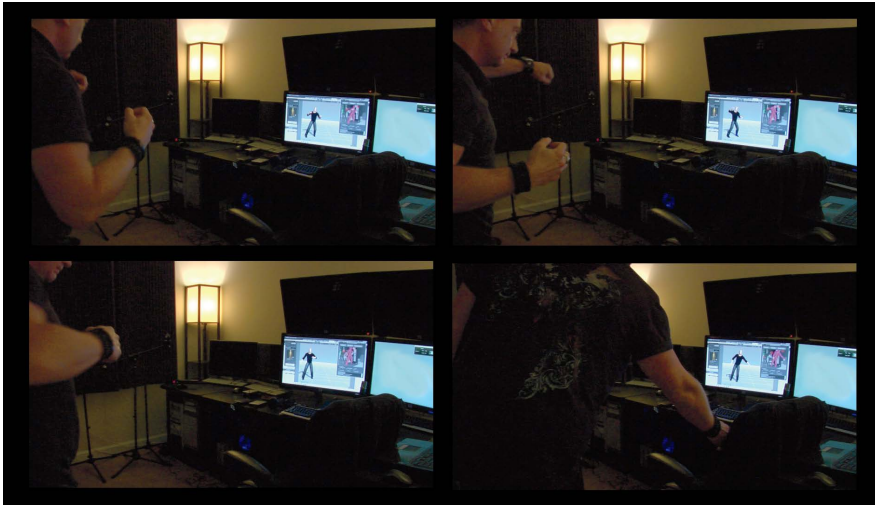
**[Figure 15.81]**  
The 3DXchange interface



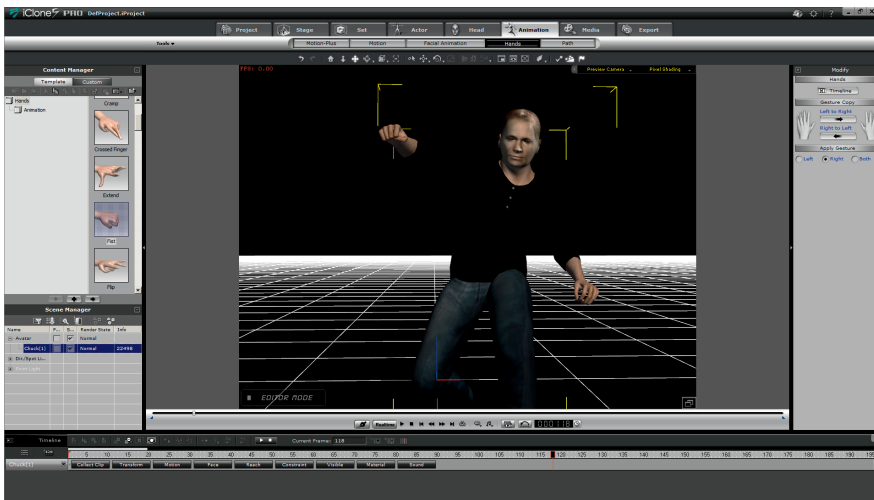
any 3D application or game engine. In fact, for a course on game development I found myself turning to 3DXchange as my main tool for “one-button-click model conversions” to use in game engines. Prior to finding 3DXchange, getting animated characters into some game engines was a giant hassle (and that’s putting it kindly).

Speaking of rigging and animation, Reallusion knocks it out of the park again with its amazing Mocap (short for motion capture) plugin for iClone. Unlike many huge, expensive, complicated even convoluted motion capture systems, iClone’s Mocap plugin allows you to do your motion capture yourself, in your own home or office, using nothing more than a Microsoft Kinect, which you can probably find used at a local gaming store for under \$50. Rather than being covered with optical tracking markers with a huge array of cameras, or being wired up with a set of wireless motion sensors, you simply stand in front of the Kinect and perform your motions (as shown in Figure 15.82). This motion is automatically applied to your (already fully rigged) character for instant playback (Figure 15.83), editing, or, if you want, layered animation refinement.

Although this Mocap solution has a few limitations, such as distance, lighting conditions, and exacting movements, I’ve found it excellent for many common applications. Once your animation is refined, simply go back to 3DXchange to effortlessly export both character and animation to your 3D application or game engine of choice.

**[Figure 15.82]**

A complete Mocap session right in my office (note the character is following along with my actions on-screen).

**[Figure 15.83]**

Recorded Mocap animation automatically applied to character with no rigging or retargeting of the character's skeleton necessary.

## 123D Catch

But what about, sets, locations, and props? Surely there has to be an easier way than modeling everything to get it into a 3D environment for your VFX. Well, out on the horizon... there it is! And one of the first to implement it is Autodesk ([www.autodesk.com](http://www.autodesk.com)) with 123D Catch ([www.123dapp.com/catch](http://www.123dapp.com/catch)).

123D Catch is one of the first in the industry to use cloud computing and computer vision technology to allow advanced 3D photogrammetry right from your smartphone. When you capture multiple images of a person, place,