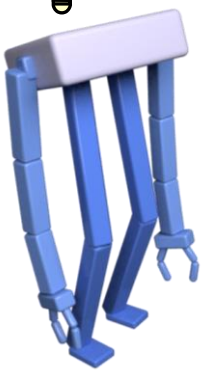
3D Animation Project Report



My idea for the 3D animation project is a friendly robot which collects forgotten USB sticks automatically and brings them back to their owners when they log onto a university computer the next time. With this story in mind, an appropriate scenario to implement for this task was the robot collecting an USB stick. This action might include climbing on a chair to reach the computer, interacting with the USB stick by collecting it and then jumping down to the floor again.

After using the same rig in a task for M. Ternan's Visual Effects module, the biggest problem wasn't creating the rig or getting all technical aspects right. Interestingly, the first version of my animation turned out to be good in its idea and structure but quite dry in its overall movement. This was probably related to my attempt to do the animation with a structured workflow, as well: There was far too less random behaviour in the way the robot was moving. At this point, the Key Mode Toggle turned out to be very useful: It allows the user to only step between key frames and leave any interpolated frames out. However, I followed Reuben's recommendation to apply some interesting offsets in all key poses. For example, this could consist of slightly increasing the space between the robot's feet during its jump down or delaying the leg moving forward during a weight shift, so the foot doesn't move in parallel with the pelvis. Small details, but after I spent some time on integrating those, the animation looked much more dynamic. Another quite important point seems to be a little bit of exaggeration - a piece of animation isn't meant to represent the reality. Only this way, the character gets a much sharper, own identity.

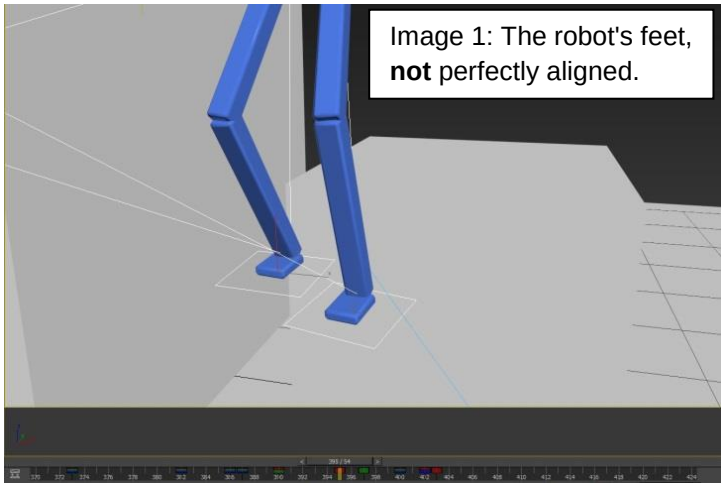


Image 1: The robot's feet, **not** perfectly aligned.

I tried to modify the rig a little bit, but even for this assessment, I couldn't do a complete new model. But one of my successes in this module was probably the use of V-Ray as a renderer. It was not only very easy to apply differently reflective materials to pelvis, arms and legs, but also to use the camera for telling a short story. Since the environment is kept very simple, the USB stick needs to be pointed out at the beginning. I also was glad to have a little USB symbol on the stick to show its relevance.

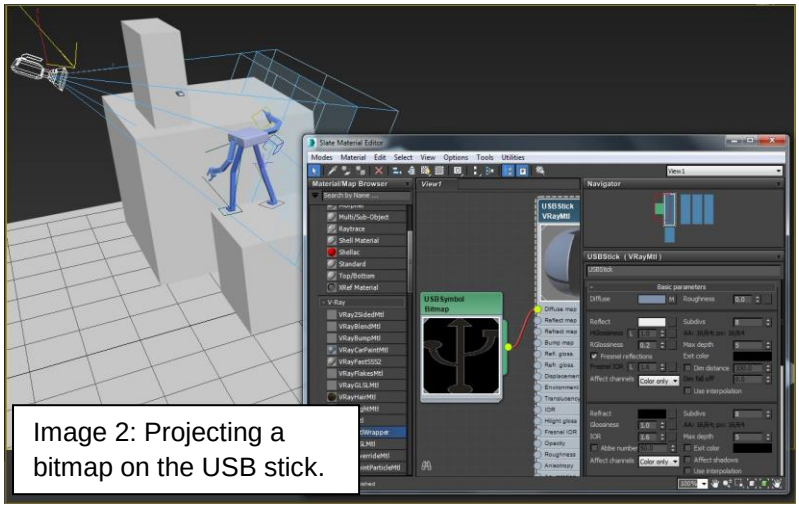


Image 2: Projecting a bitmap on the USB stick.

One of the most conspicuous things in my animation is probably the depth of field, which I always tried to use for pointing out important bits in the scenes. For this, the target of the physical V-Ray camera was very helpful! Hopefully, it's not too much but I like the look of this effect, why I decided to integrate it here. Sadly, I wasn't informed about some render parameters of V-Ray regarding the camera: If you want depth of field to be visible in the final render, you first have to configure it in the render settings! Great. And of course, I only noticed that after rendering out everything over three hours… But this still wasn't the solution. It seems that the V-Ray render engine gets some camera settings at the beginning and doesn't ask for changes during the render. As a result, my animated field of view wasn't animated in the final output because it is one of those 'constants'. Another great vexation: If you render only one frame, V-Ray will get the correct field of view value but if you want to render several frames successively, changes will be lost…

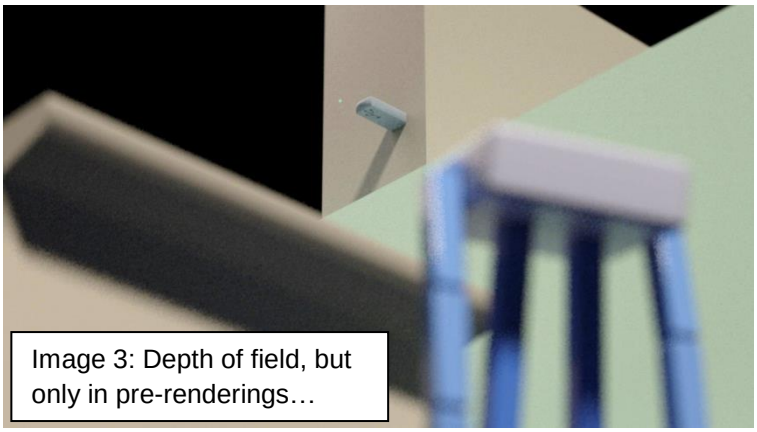


Image 3: Depth of field, but only in pre-renderings…

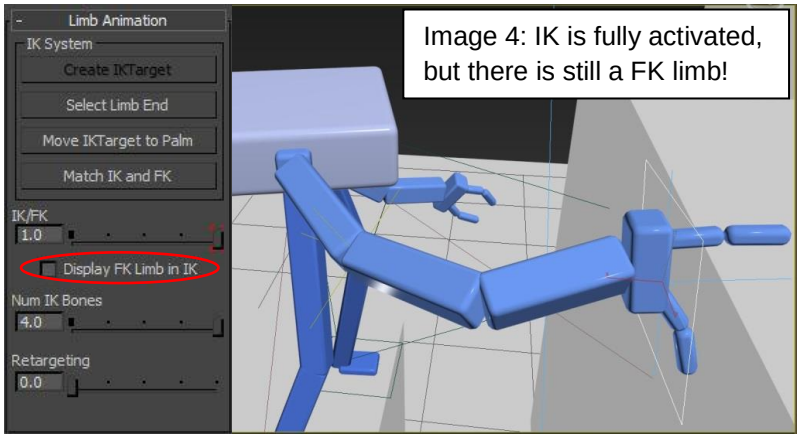


Image 4: IK is fully activated, but there is still a FK limb!

From the animation point of view, I was really appreciating the use of inverse kinematics controllers and link constraints. They make it easy to link parts of the rig to the environment or the other way around. A tricky part is probably to get an understanding for those two modes: When you're using inverse kinematics (IK), the forward kinematics 'version' (FK) of the limb can still move around and produce problems later, since you can't directly see an effect on the actual movement! This is only important if you're in full IK, but that's normally the case. It's easier to solve a problem with IK/FK by just activating 'Display FK Limb in IK', which shows the FK limb, as well.

During this module, I've learned so much - not only about 3dsMax. It surely would've been very interesting to improve the model of my little robot or spend some time with designing the environment by adding more detail in it. But it's been hard to give the best for every module, so I had to give preference to the animation and save the work on details for later. Nevertheless, I think it has developed to an entertaining animation. Three months ago, I hadn't done anything in 3dsMax before! And there is still much to learn. But I'm motivated to continue working on some character animations in 3dsMax because it has (mostly) been fun. And: From now on, I'll try to be as creative as possible with applying random behaviour on my characters to create an identity for them!