

Created by Daitomodachi
Code Review By Lateasusual

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Introduction

The Auto IK Rigger V2 is an addon which allows you to quickly rig humanoid characters.

Features:

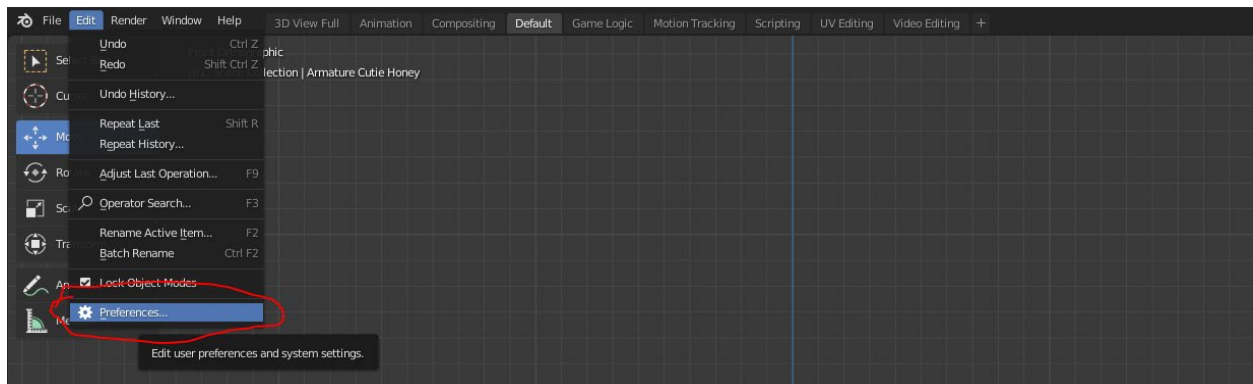
- The ability to create rigs with IK limbs for humanoid models
- Able to save Rig files as JSON files allowing you to rig models quickly
- Moves “unnecessary” bones to bone layer 8
- Application of custom bones to key bones
 - The custom bones can be rescaled with the addon’s built in Custom Bone Rescaler tool.
- Able to create FK to IK sliders for the rig

Limitations:

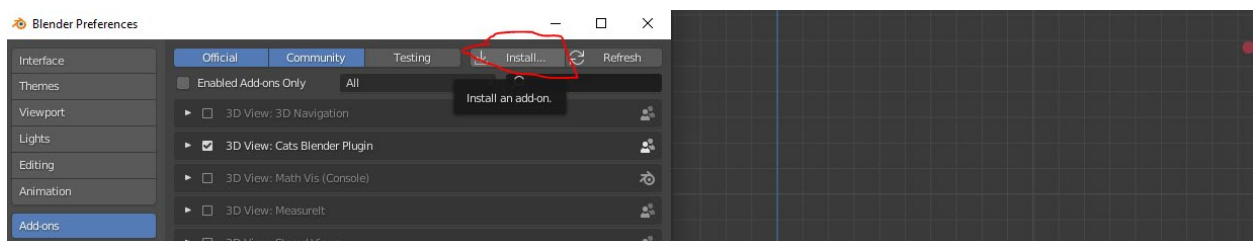
- The model **MUST HAVE** an armature already attached for this addon to work
 - If you’re trying to rig a model with no prior armature, see Auto Rigs, or Rigify
- Custom bones may not be displayed correctly and might require moving the bones in Edit mode or edit the custom bone mesh
- This is only for humanoid models. It is not for rigging non-humanoid characters
- It can only support up to 4 spine bones
- Intended for Blender 2.8x and up. No plans for a 2.79 version is planned

Installation

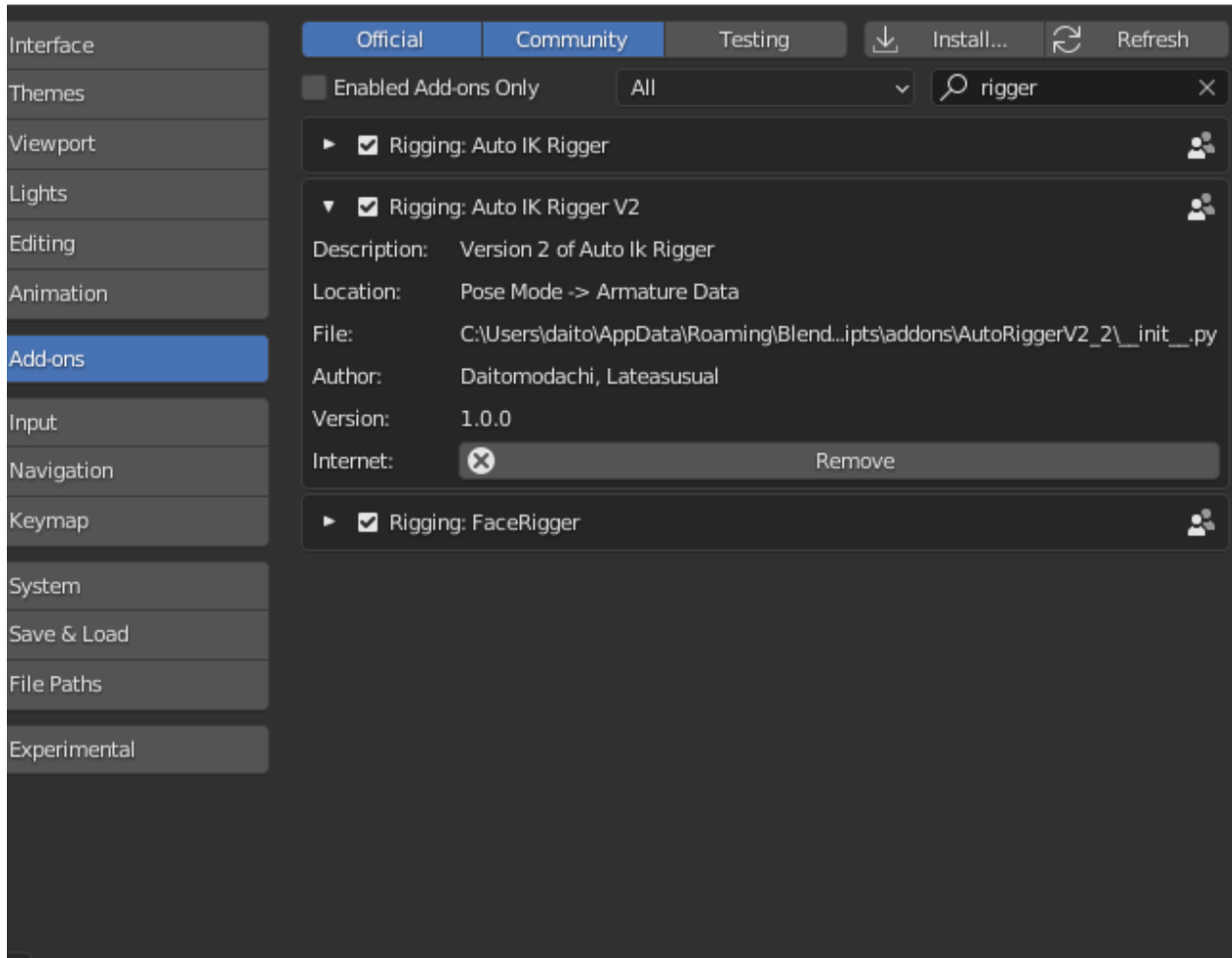
After downloading the addon’s zip file. Open Blender and navigate to **Edit->Preferences**



Then navigate to **Addons->Install**



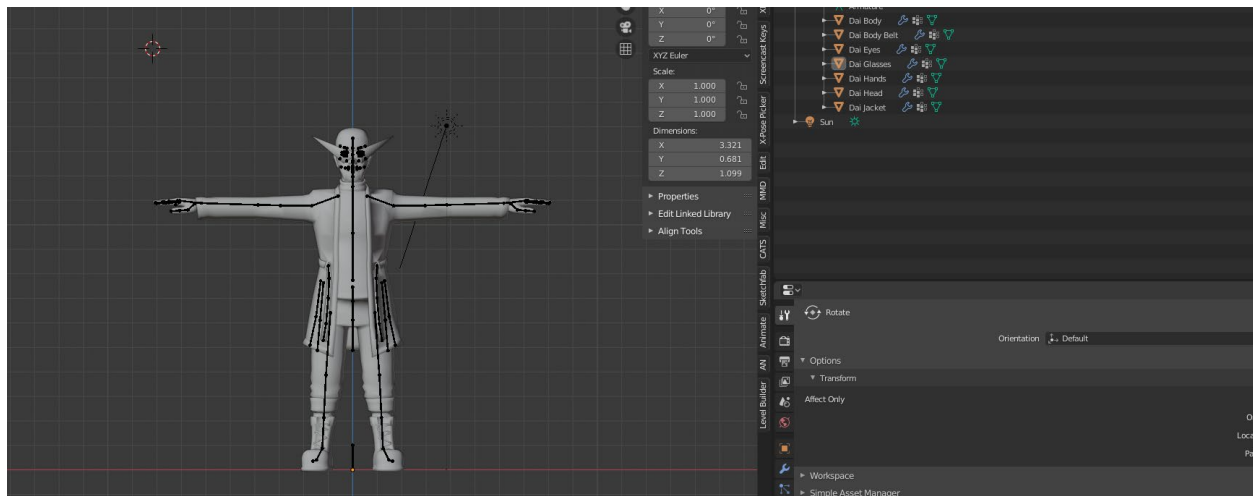
Find the addon’s zip file and select it. Activate it by clicking on the check mark.



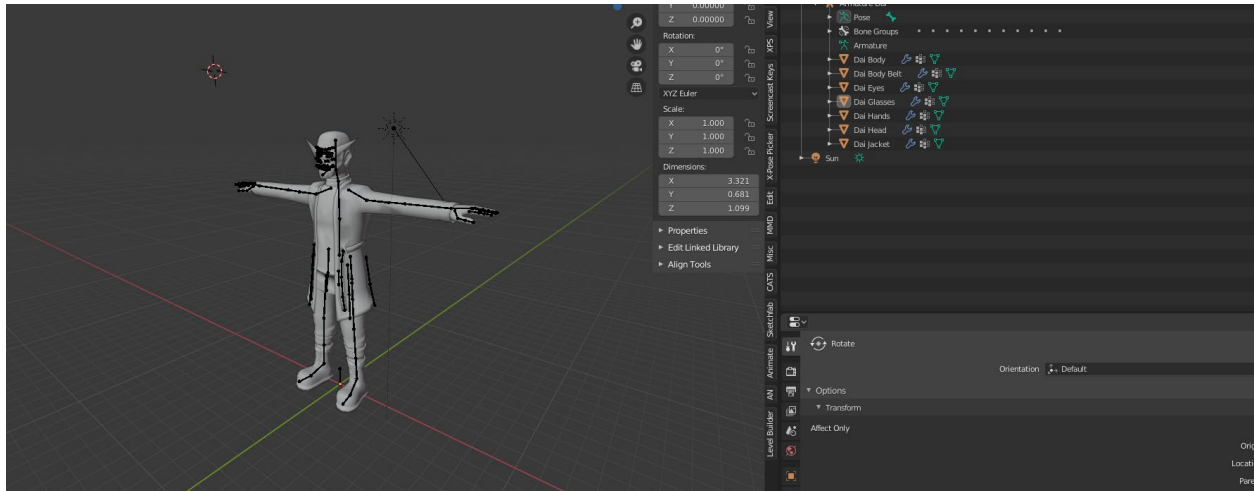
If it doesn't show up immediately, use the add-on's search feature to look for the add-on.

Preparation

Before using the add-on, it is recommended to do the following steps. We'll be using Daitomodachi's Avatar model as an example

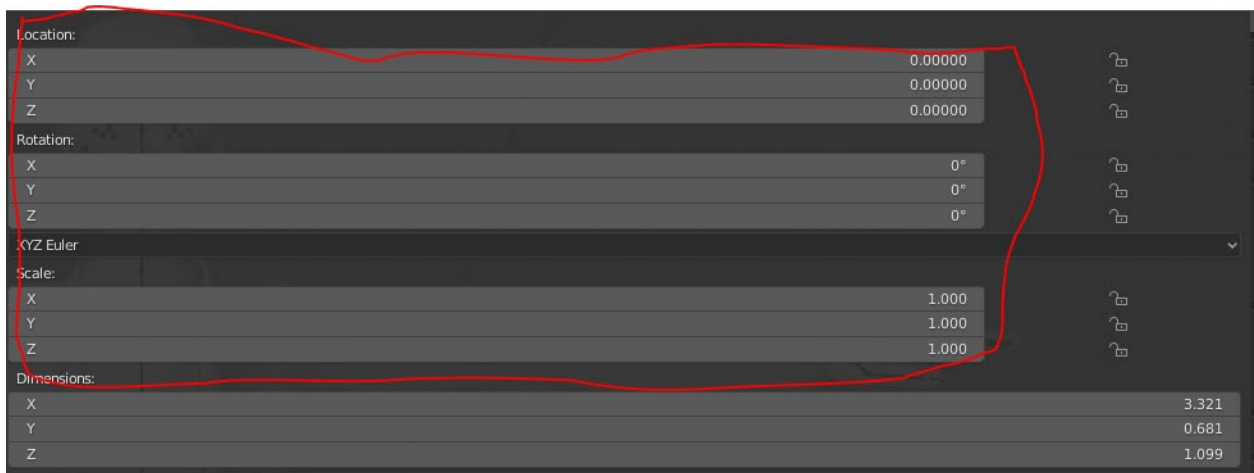


Apply Transforms

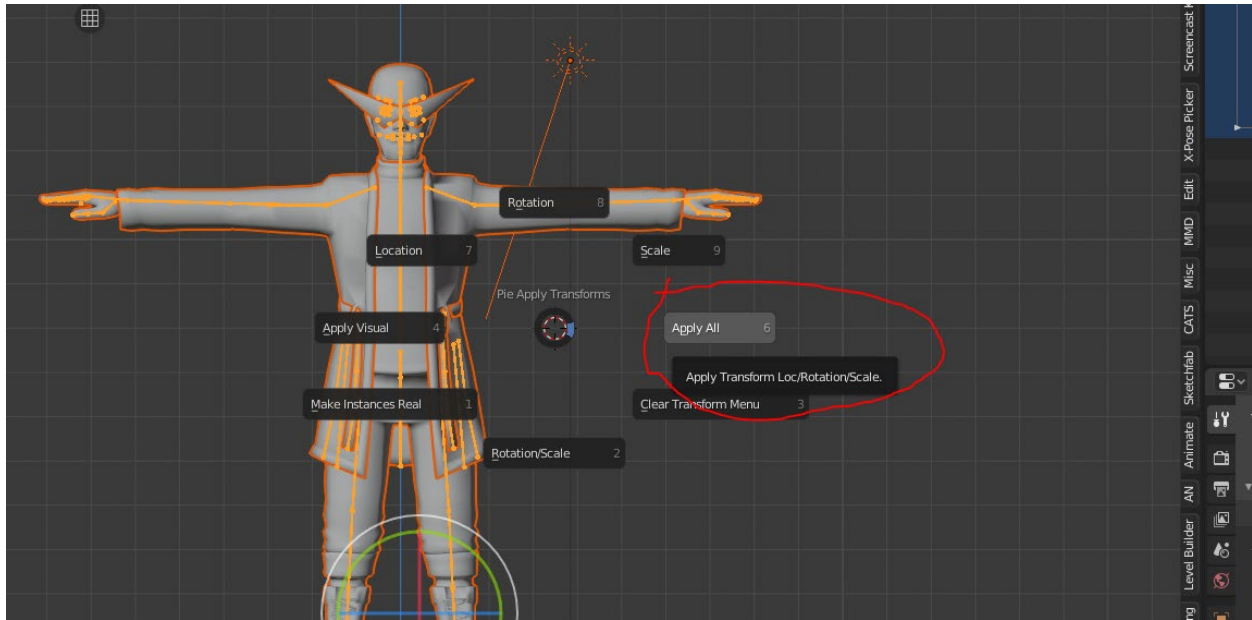


While in object mode, make sure the model has all transforms already applied at this location. The transforms should be applied if

- The location along the x,y,z axes are zero
- The rotation along the x,y, and z axes are at 0 degrees (having one setting at -0 degrees does not count!). For Quaternion, the W value should be 1.
- The scale along the x,y,z axes are 1

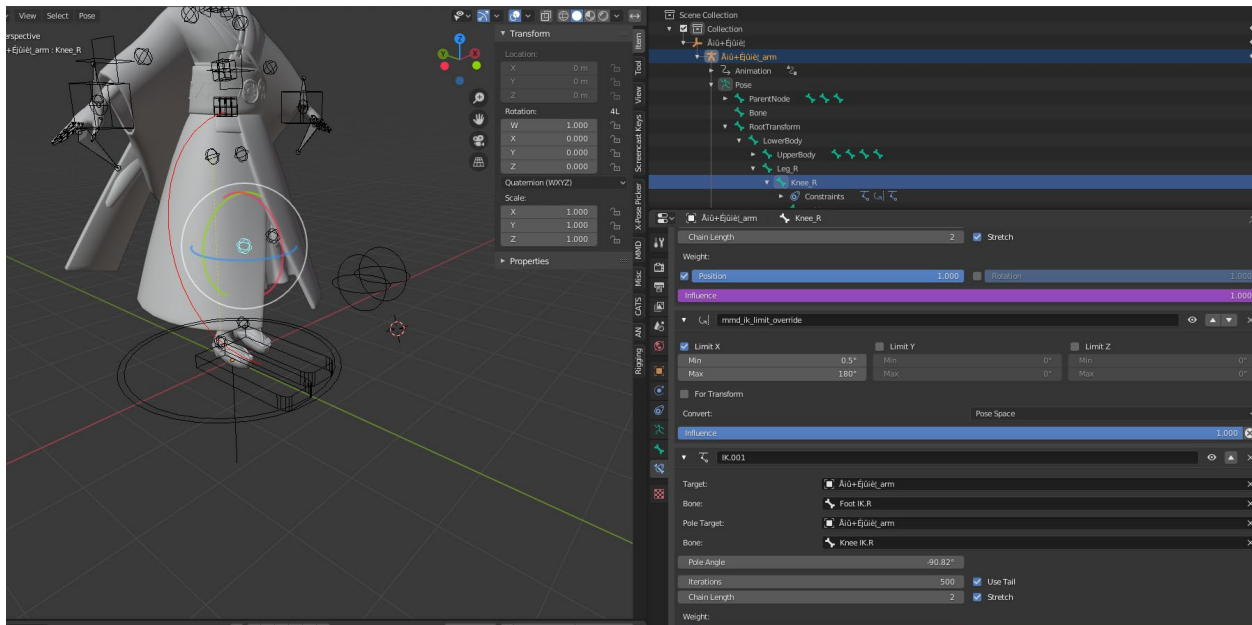


If any of these transforms are not like the ones shown in the figure above, make sure to select the meshes and the armature, and apply all transforms (**CTRL-A**)

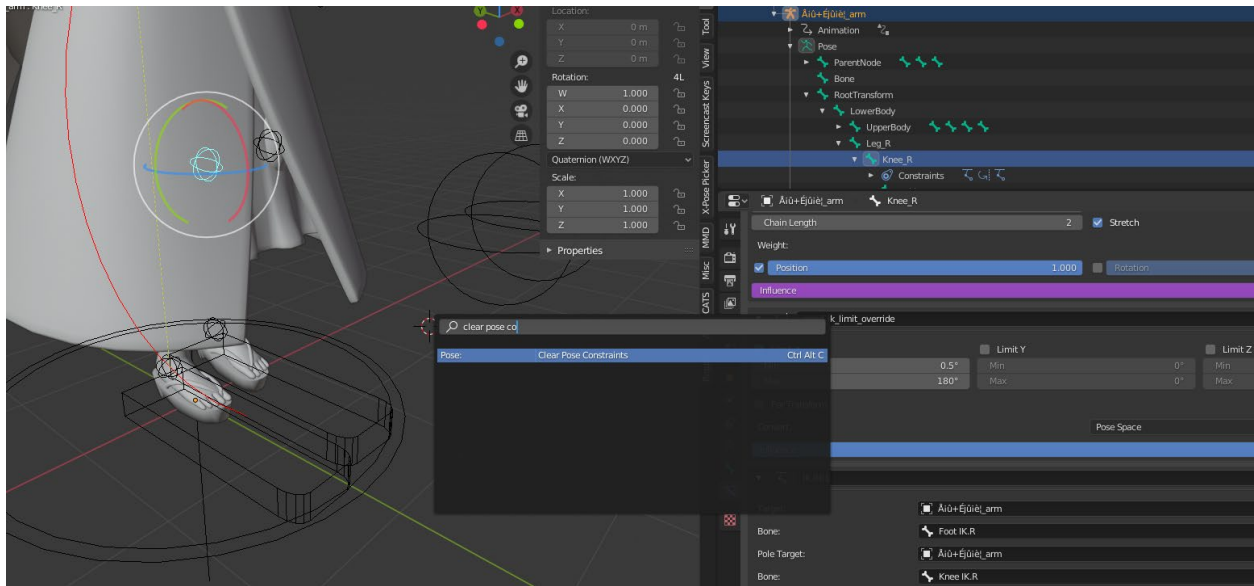


Get Rid of Prior Bone Constraints

Another thing to check is to make sure there are no existing bone constraints on your armature's limbs. If there are any bone constraints present, clear them as they can cause unexpected issues for the rig. For example, the CAT's addon likes to add limit location constraints to their models which can cause the leg IK to not work at all.



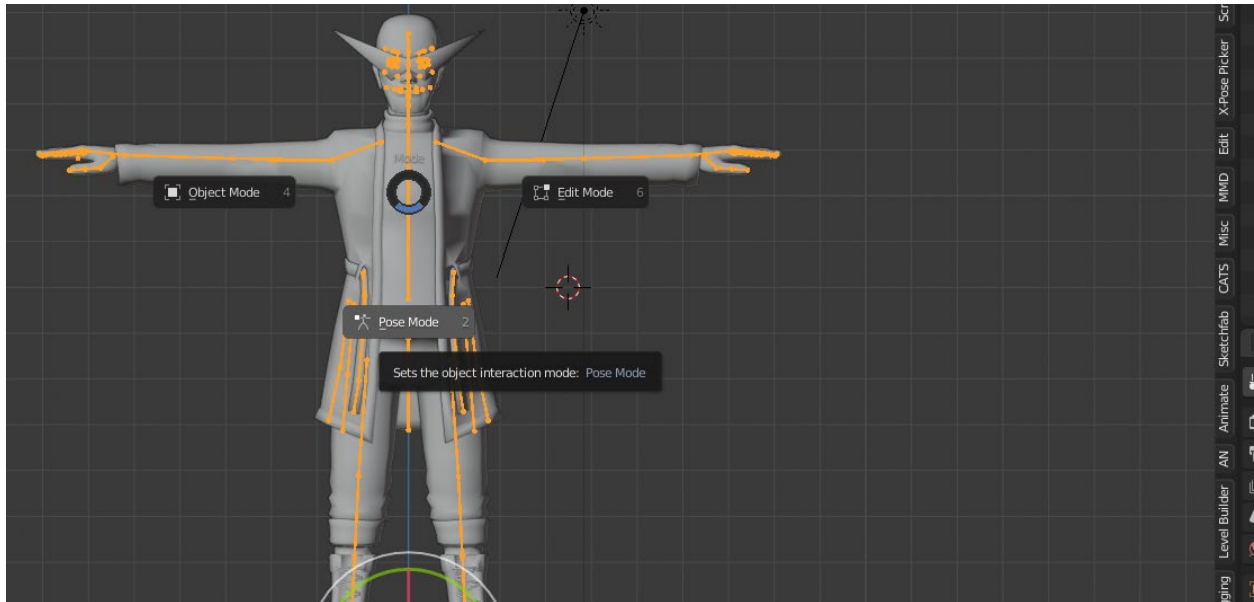
You can quickly clear bone constraints by selecting the affected bone; hit F3 and using the "Clear Pose Constraints" option.



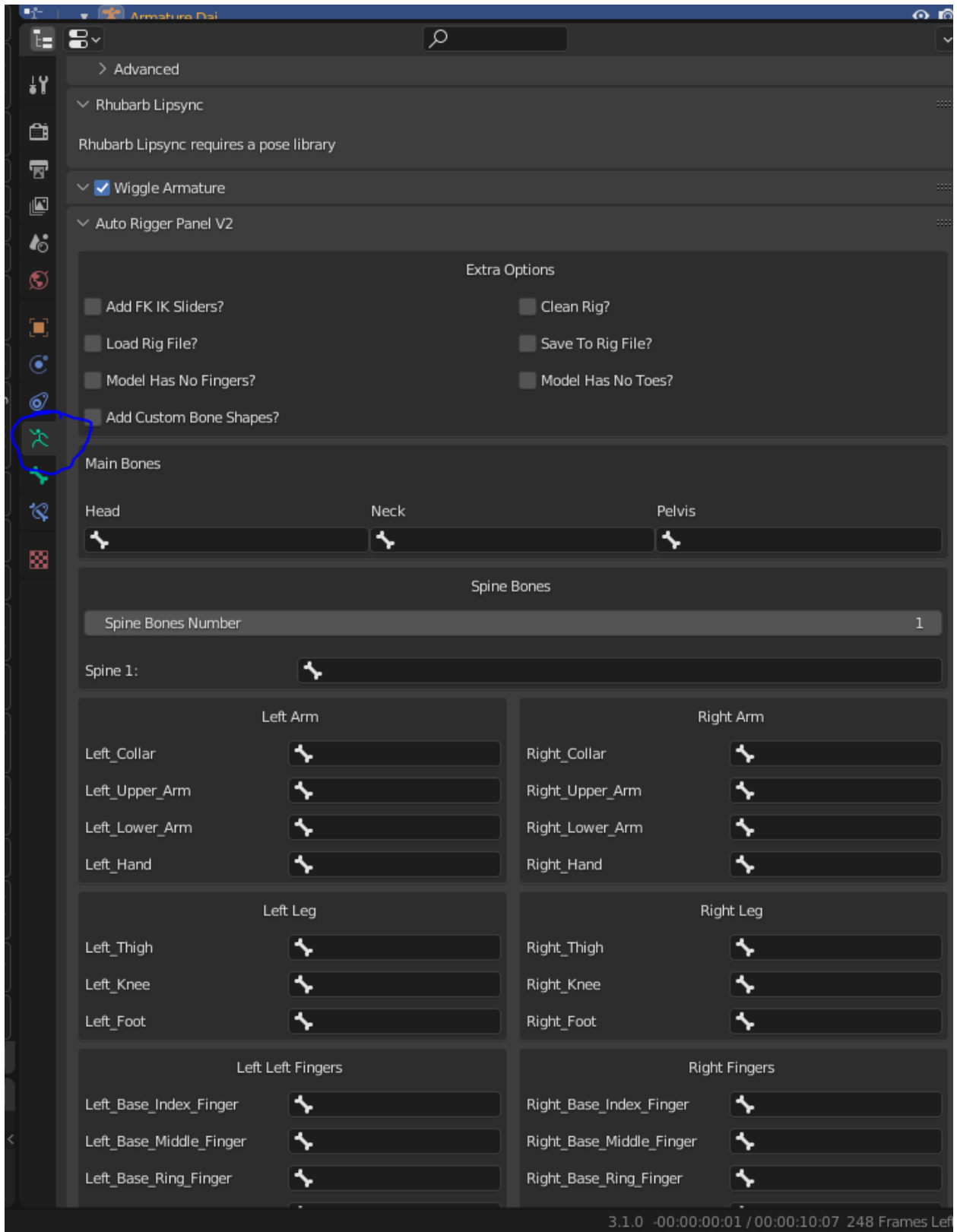
Finally, if you don't know which bones are which, it is recommended to figure out the model's bone hierarchy.

Using the Addon

After doing the necessary prep work, select your armature and go into pose mode



Once you're in pose mode, go to the Armature Data Tab to find the addon.



> Advanced

▼ Rhubarb Lipsync

Rhubarb Lipsync requires a pose library

▼ Wiggle Armature

▼ Auto Rigger Panel V2

Extra Options

- Add FK IK Sliders?
- Clean Rig?
- Load Rig File?
- Save To Rig File?
- Model Has No Fingers?
- Model Has No Toes?
- Add Custom Bone Shapes?

Main Bones

Head

Neck

Pelvis

Spine Bones

Spine Bones Number

Spine 1:

Left Arm

Left_Collar

Left_Upper_Arm

Left_Lower_Arm

Left_Hand

Right Arm

Right_Collar

Right_Upper_Arm

Right_Lower_Arm

Right_Hand

Left Leg

Left_Thigh

Left_Knee

Left_Foot

Right Leg

Right_Thigh

Right_Knee

Right_Foot

Left Left Fingers

Left_Base_Index_Finger

Left_Base_Middle_Finger

Left_Base_Ring_Finger

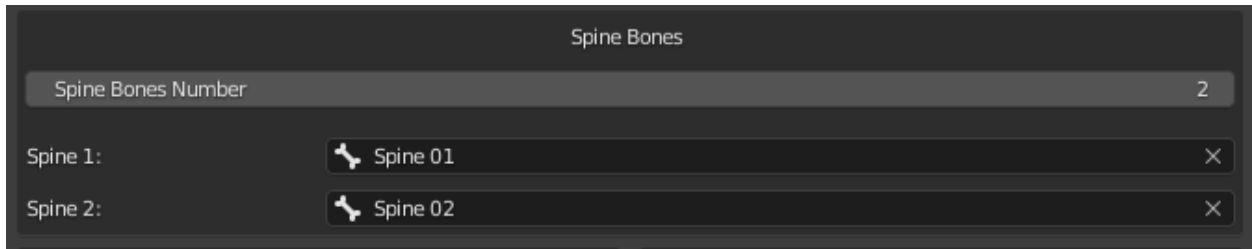
Right Fingers

Right_Base_Index_Finger

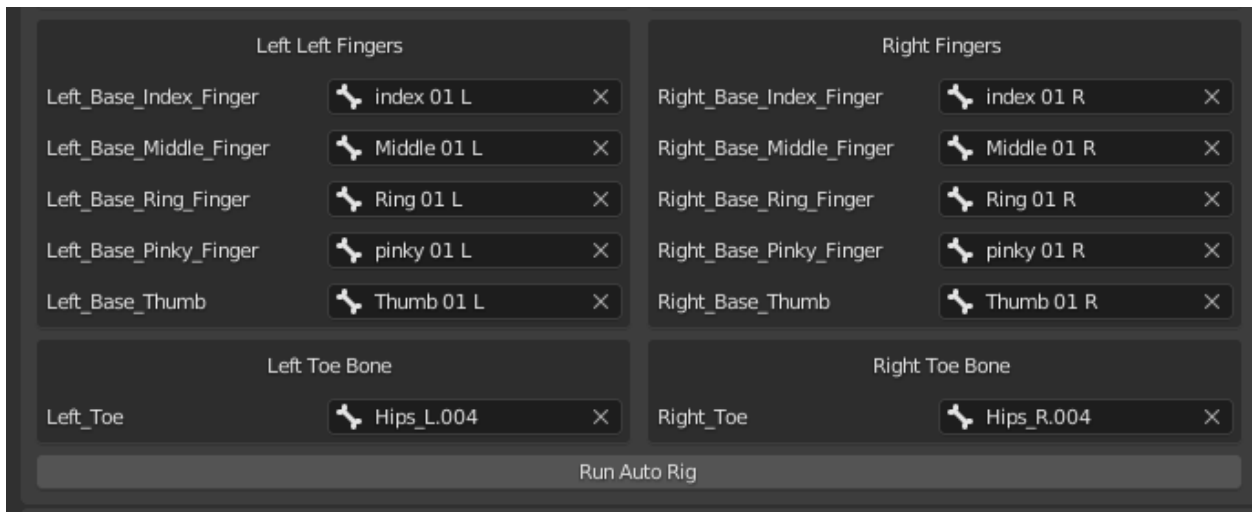
Right_Base_Middle_Finger

Right_Base_Ring_Finger

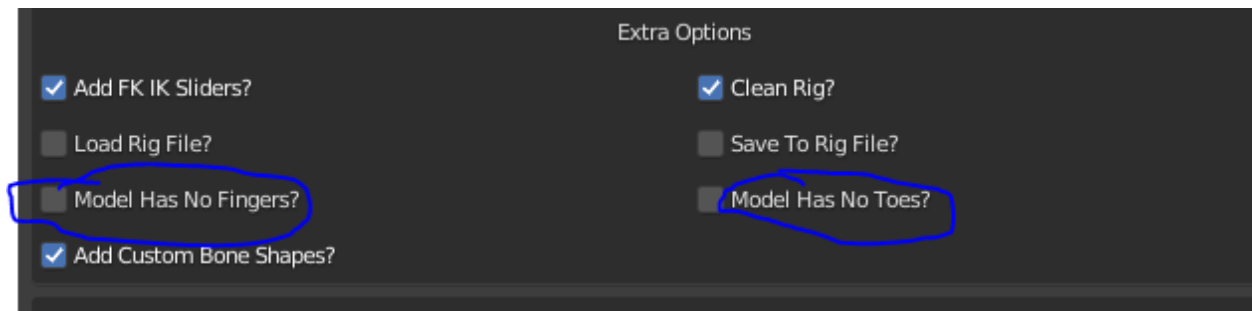
Fill in the menu with the appropriate settings. For the spine bones, just set the number of spine bones your model has (currently supports up to 6 spine bones). Please note that Spine 1 is the only spine setting that MUST be filled in. Spine 2 – 6 could be left blank if your model doesn't have them. Also, *Spine 1 is the spine bone that's parented to the pelvis/hip bone.*



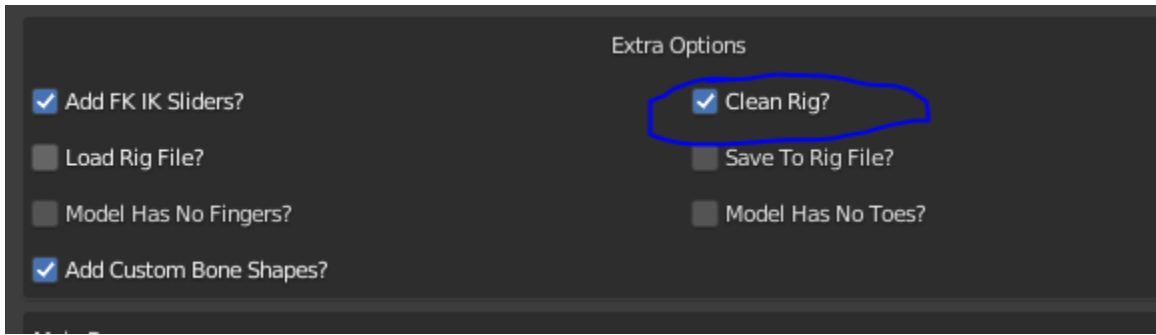
Also, if your model has finger and toe bones, input their fields at the bottom. The base finger bone is the bone closest to the main hand bone.



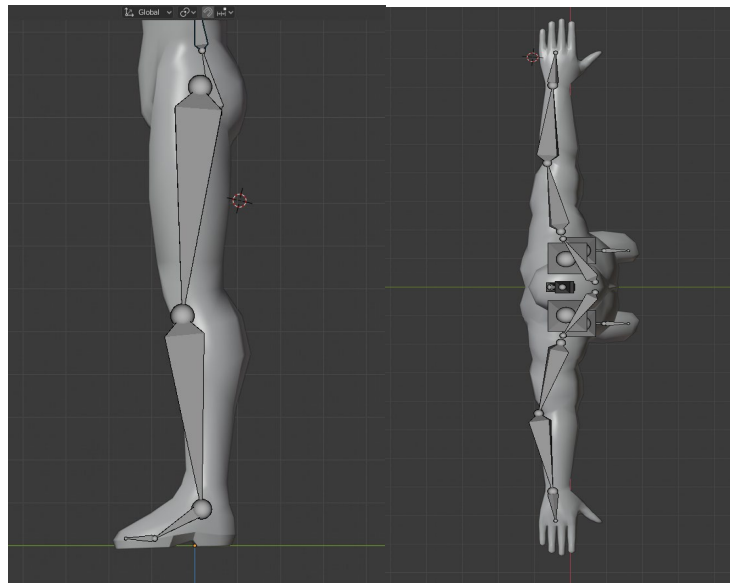
If your model doesn't have one or both these things, check off the appropriate boxes above.



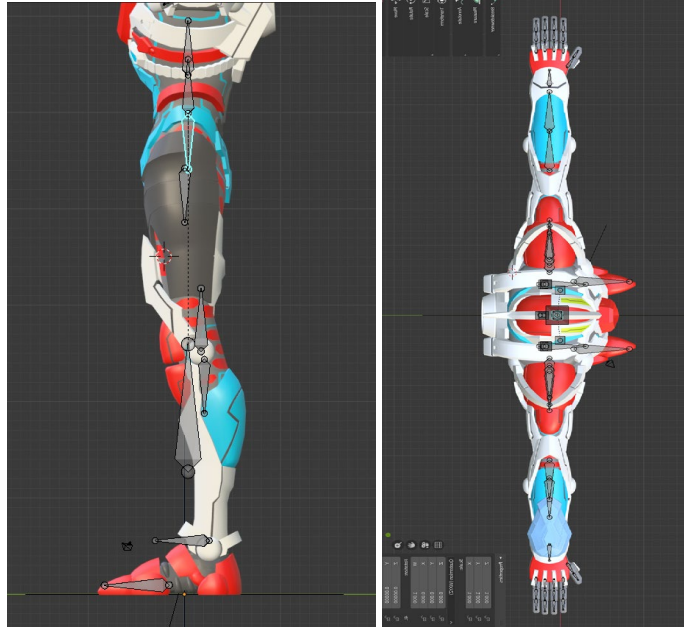
Clean Checkbox



This option should not be checked if you know the model's arm and leg bones are connected and there's a slight bend in the arm/leg bones. The figures below show an example of a model from Royal Skies LLC in which the clean option is not necessary.

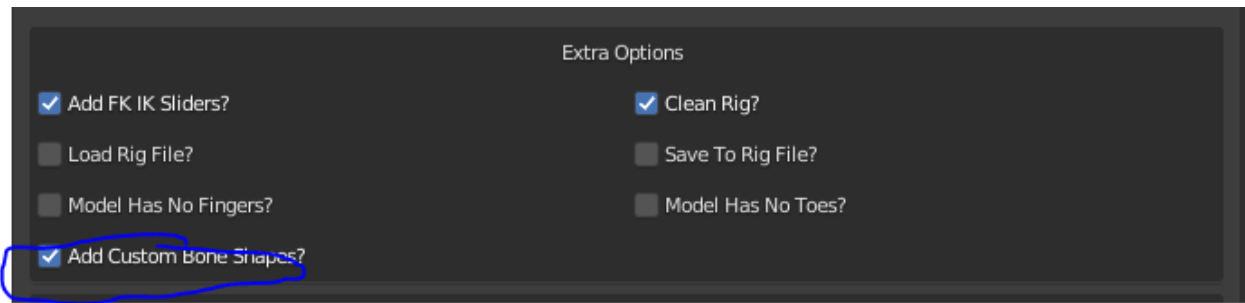


Also, look at the figures below if you want to know when you should check the clean option

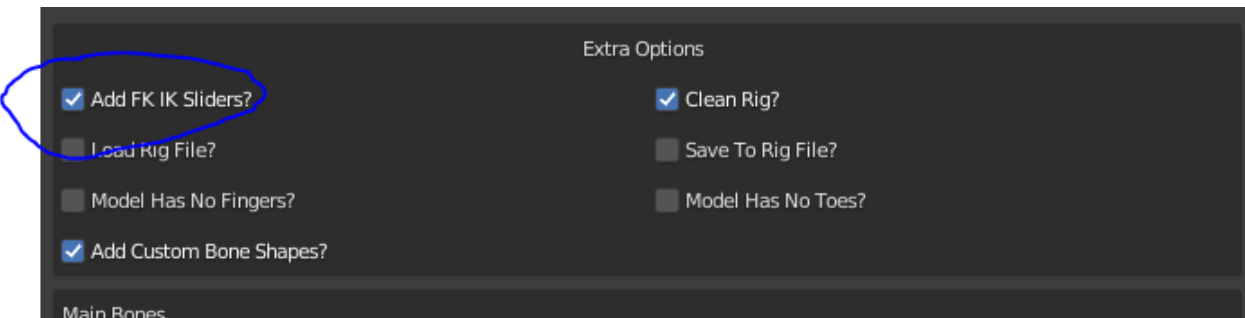


Custom Bones Checkbox

As the name implies, by checking this box, custom bones will be applied to all the key armature bones. If you don't want custom bones to be applied to the model and want to apply your own, un-check this button.



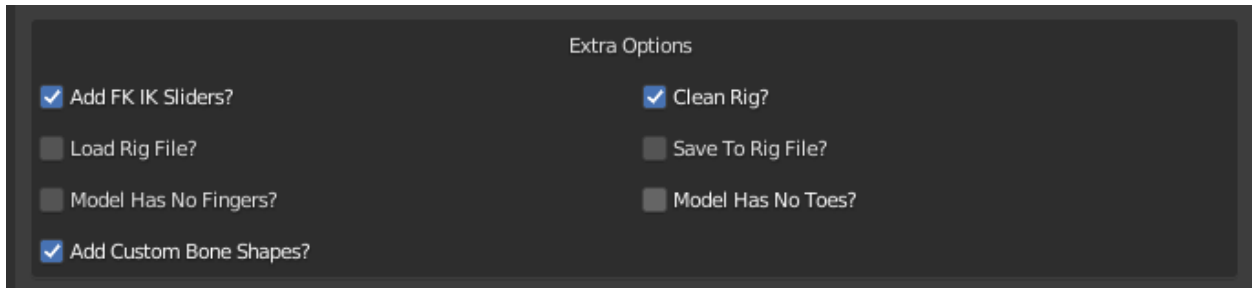
FK to IK Sliders Checkboxes



Finally, the Auto IK Rigger can apply FK to IK sliders to the arms and the legs. **When you select arms to have FK to IK sliders, the arms will be in FK pose by default. When you select the legs, the legs in be in the IK pose by default.**

The FK to IK sliders will be places in Bone Layer 2 by default.

For this guide, the FK IK Sliders, Clean Rig, and Add Custom Bone Shapes will be selected.

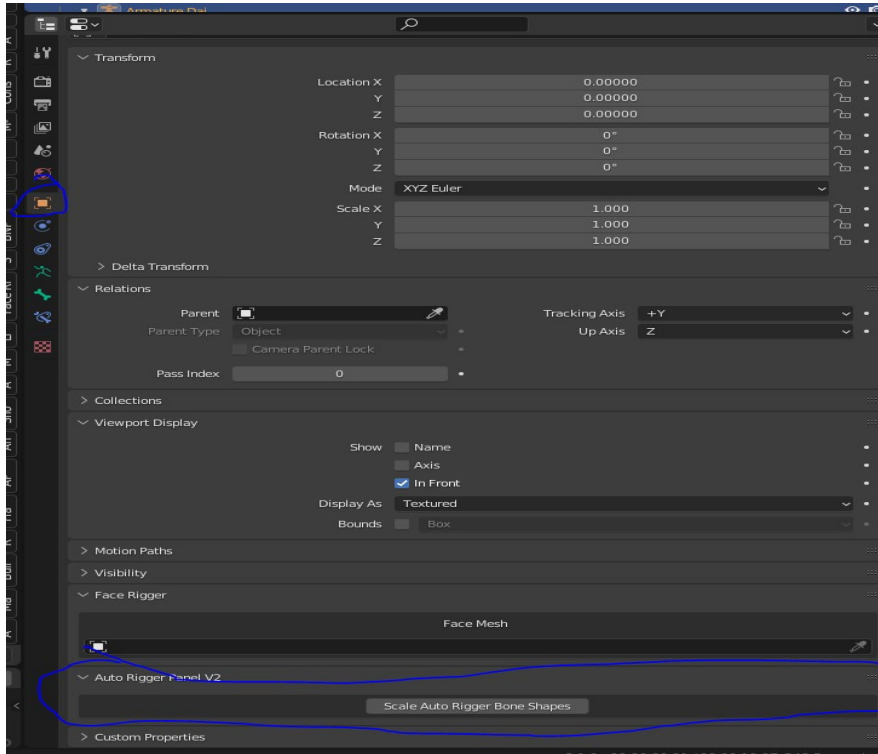


Once you're satisfied with your settings, hit "OK". Once the addon successfully creates the rig, you'll be taken to object mode.

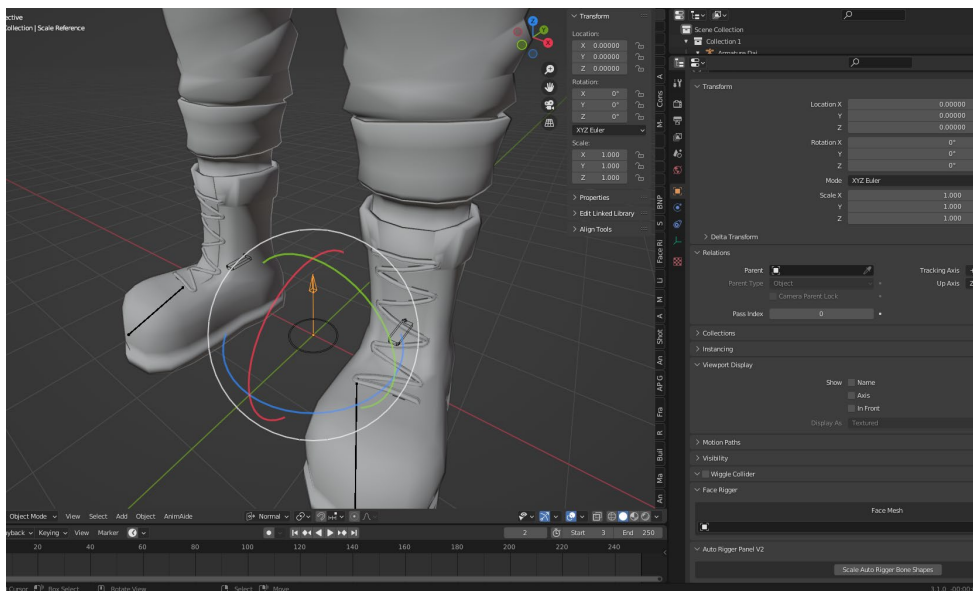


Custom Bones Rescaler

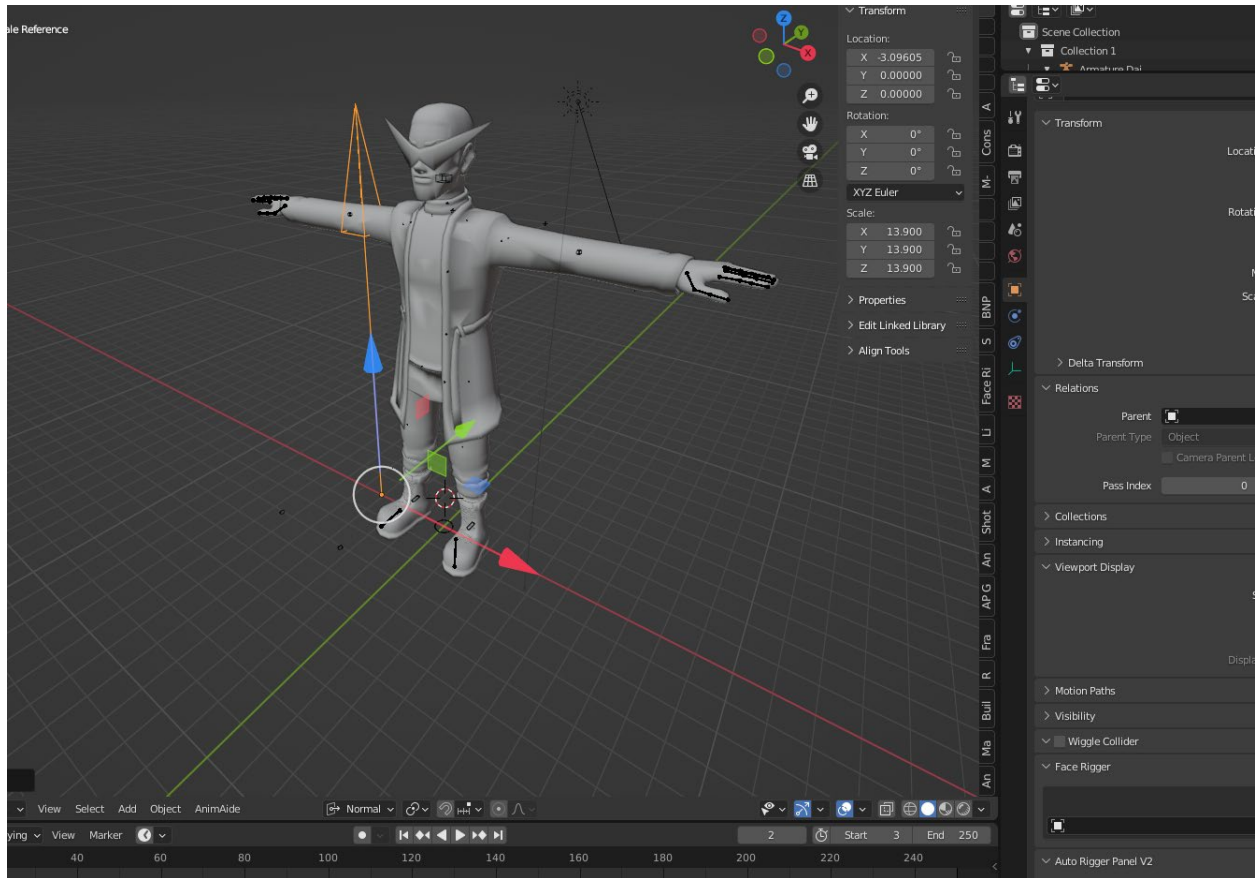
As shown in the figure above, if your rig's too small or too big, the custom bones may need to be rescaled. To rescale the custom bones, select the armature and go to the Object Data tab, and select "Scale Auto Rigger Bone Shapes."



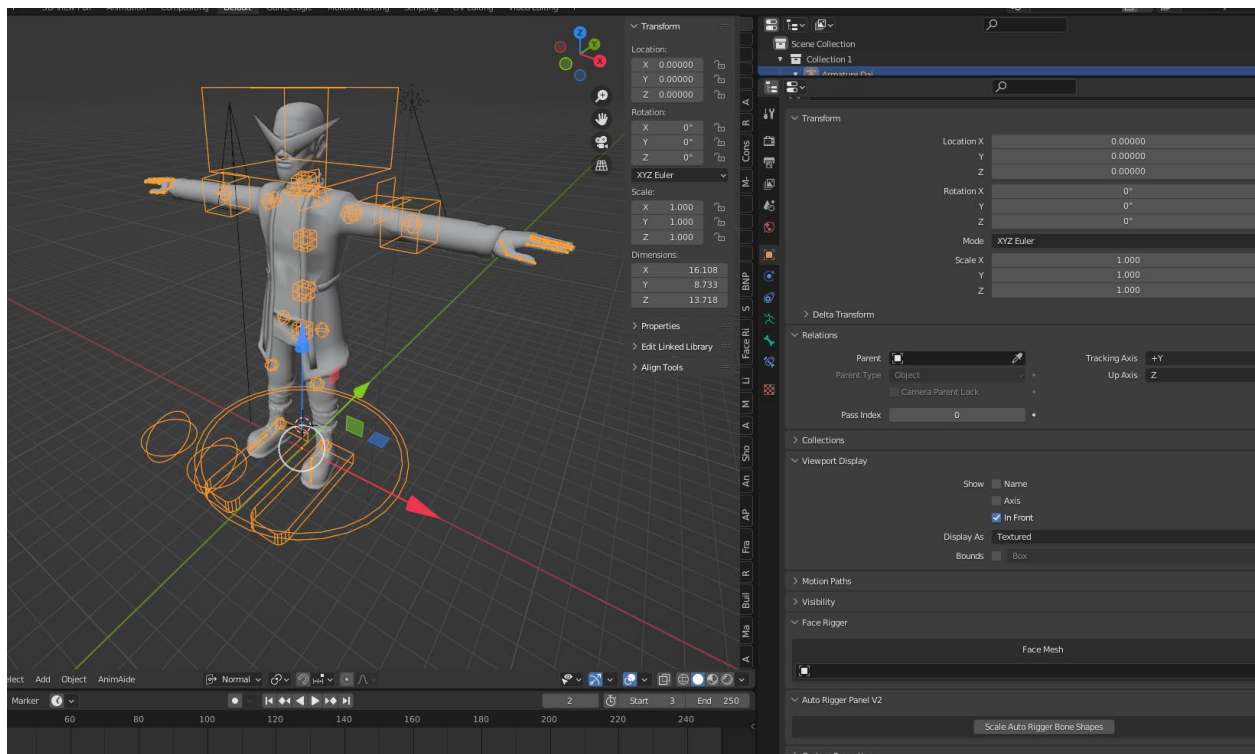
When you initially run the operator, an empty named "Scale Reference" should appear.



Scale the empty up so it'll be the same height



Press the button again to scale the bone shapes.

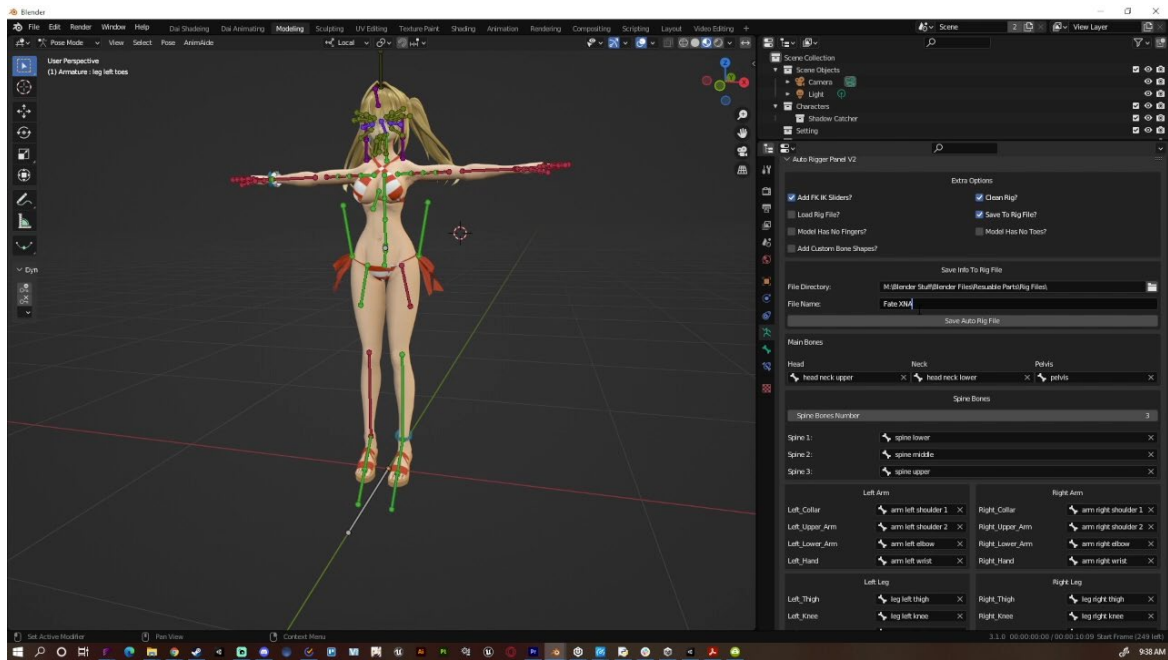


Congratulations! Your model is ready to be animated!

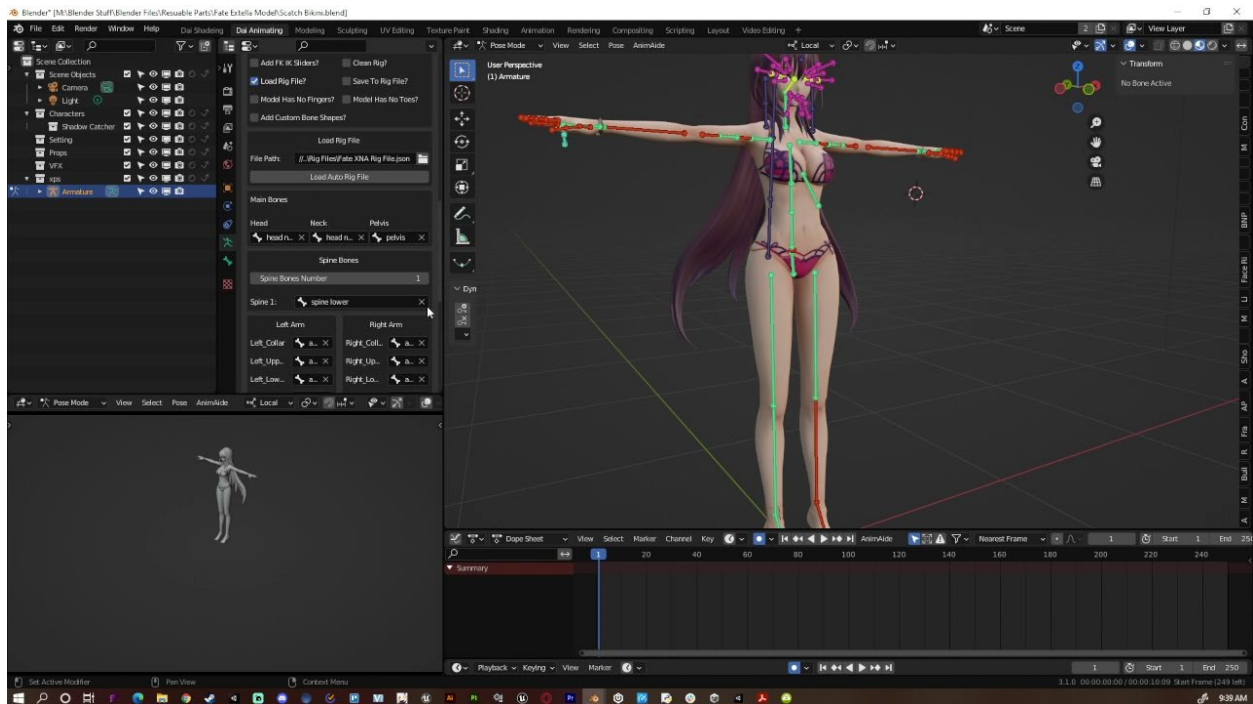
Using Rig Files

In the previous version of Auto Rigger, the addon had an internal json file to try to predict the bones of the model. That was removed in favor of letting the user create their own Rig files. This part will show how to create and use these files. For this example, we will be using two models: Nero's Bikini model and Scatach's Bikini model.





To load a rig file, simply select Load Rig file, the desired rig, and press Load Auto Rig file. If you selected the right rig, then all of the fields should be filled. Please note you may need to increase the number of visible spine bones to see them prefilled.



FAQ / Troubleshooting

Q: Can this addon work for models in A-Pose?

A: Yes! Your model can be in an A pose and the addon can still rig it

Q: I messed up with my rig. Can I undo it?

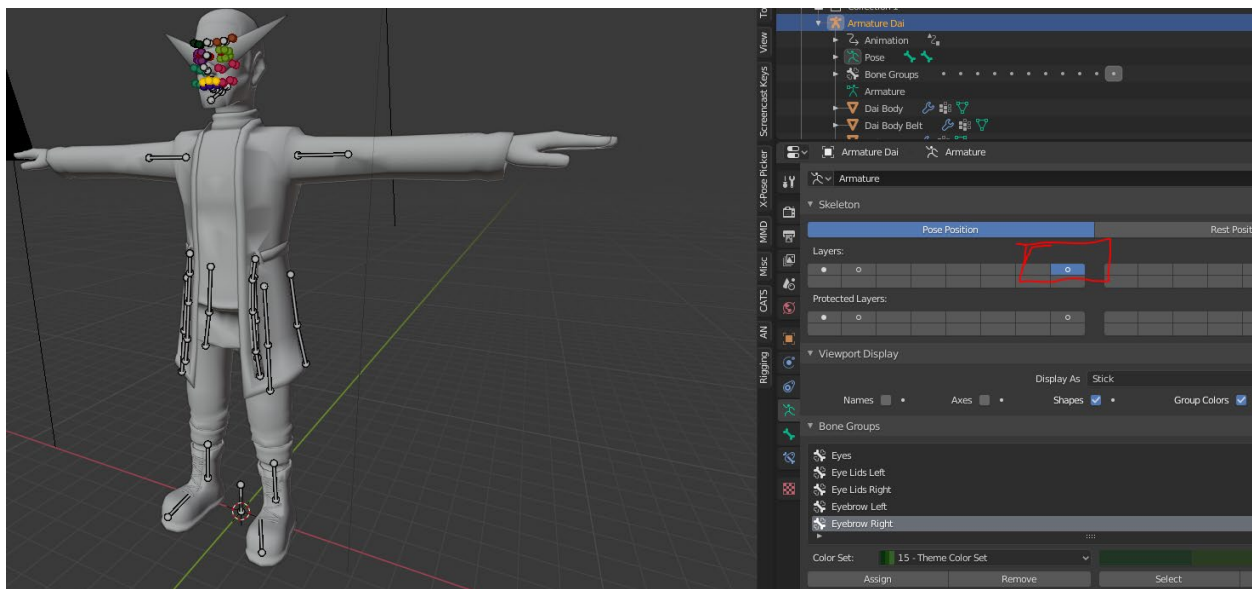
A: The only way to undo a rig is by control z. Otherwise, there is no way of undoing a rig. It is recommended to have a backup of your model unriggered.

Q: Can the addon rig models with no Armature?

A: No. The model MUST have an armature attached for it to work. Also, the armature must not have any IK constraints on the arm and/or leg bones.

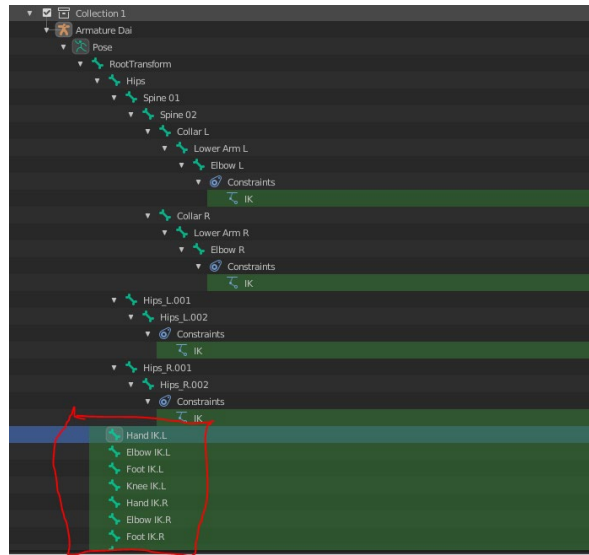
Q: I cannot find my original bones! Where are they?

A: All bones that aren't used in the Auto IK Rigger are placed in Bone Layer 8 if not kept in their original layer. You can find it here



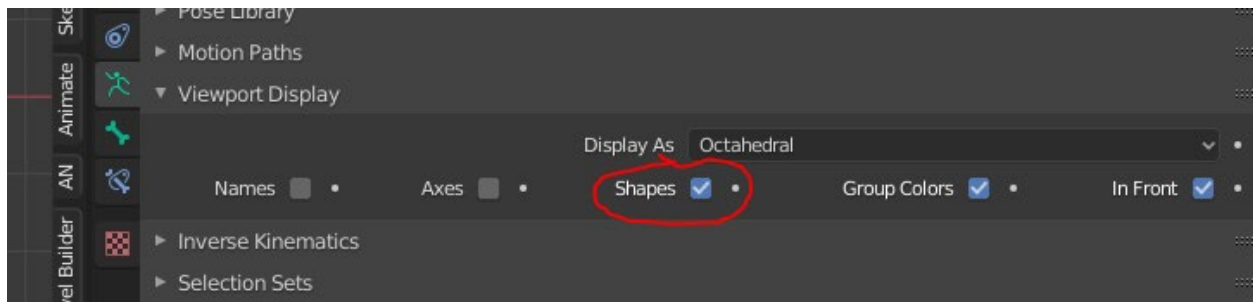
Q: What are my IK bones and where are they?

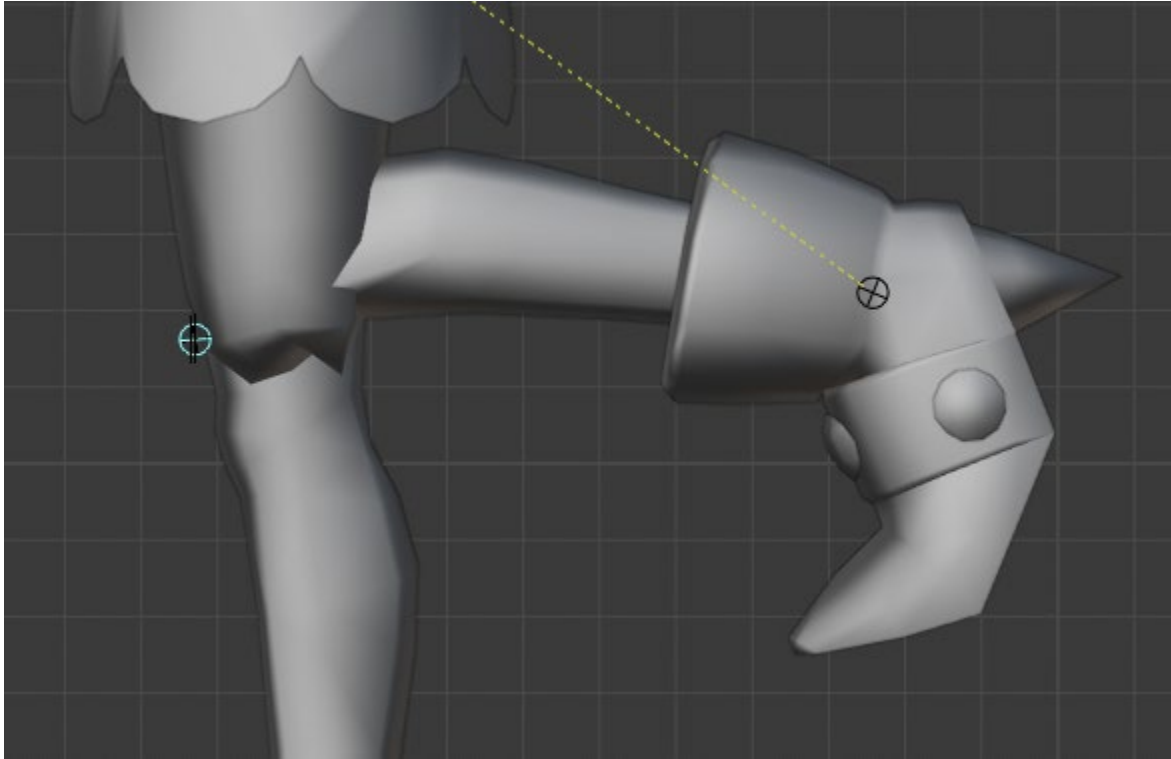
A: The IK bones are always named Hand IK.L/R and Foot IK.L/R. The pole bones are Elbow IK.L/R and Knee IK.L/R. The IK bones are usually in Bone layer 1 or 2. If you still cannot find them, you can find them using the outliner. Select them and their location will be shown in the viewport. They might also be in a different bone layer so examine each individual layer.



Q: The custom bones shapes aren't showing up!

A: Check to make sure you enabled Shapes for your armature. Some rigs don't have it enabled by default.



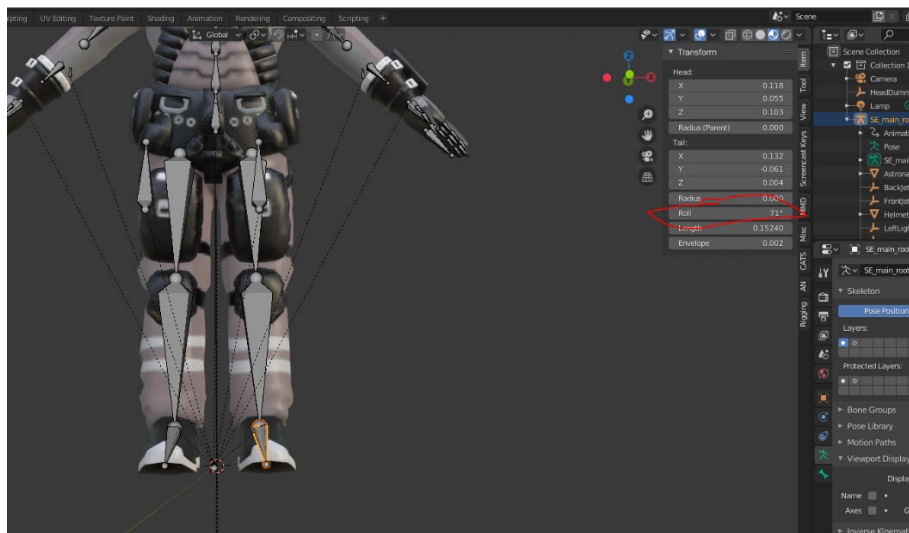
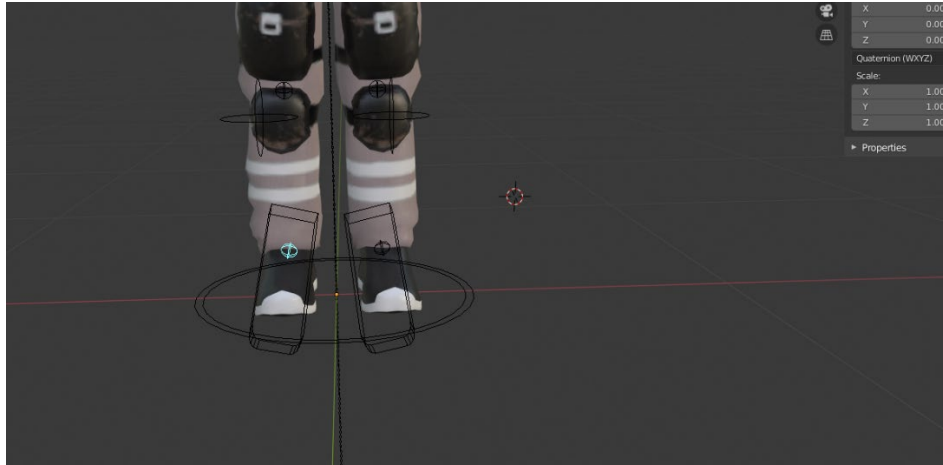


A: The addon may have bent the bones to the point where they're sticking out of the model. Simply select the armature, go into edit mode and bend the IK bones until they're no longer sticking out of the model. If the bending is still persistent, then check the weight painting for your model.

Q: The rotation of my IK bones are messed up!

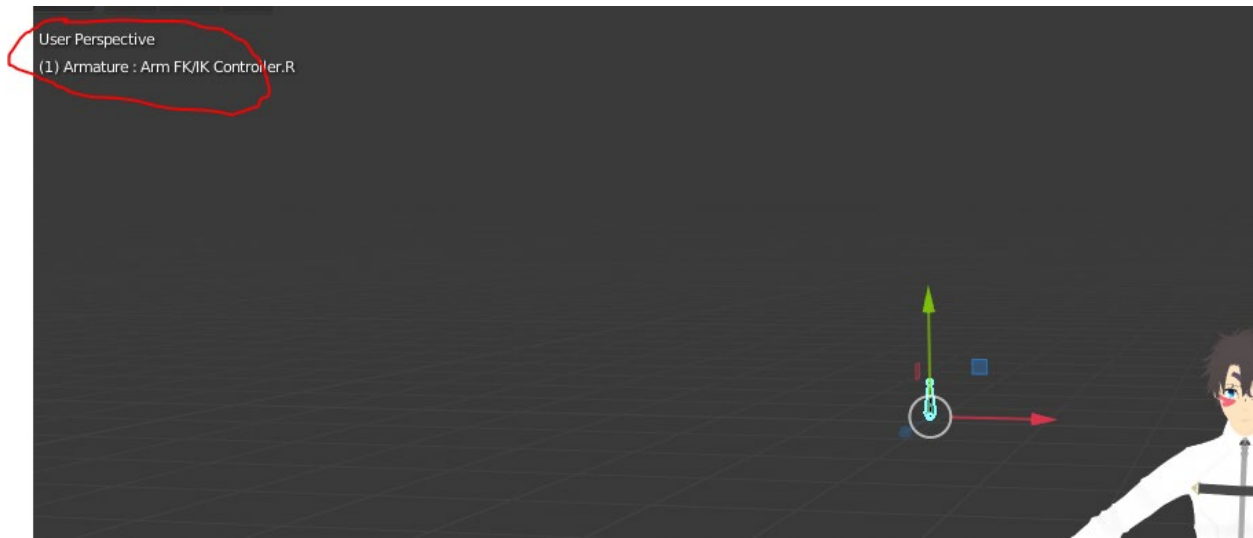


A: The foot and hand IK bones copy the rotation of their respective bones in the armature's rest pose. Check to see if the hand/foot bones roll values are not 0 degrees in edit mode. If they are, then set them to 0

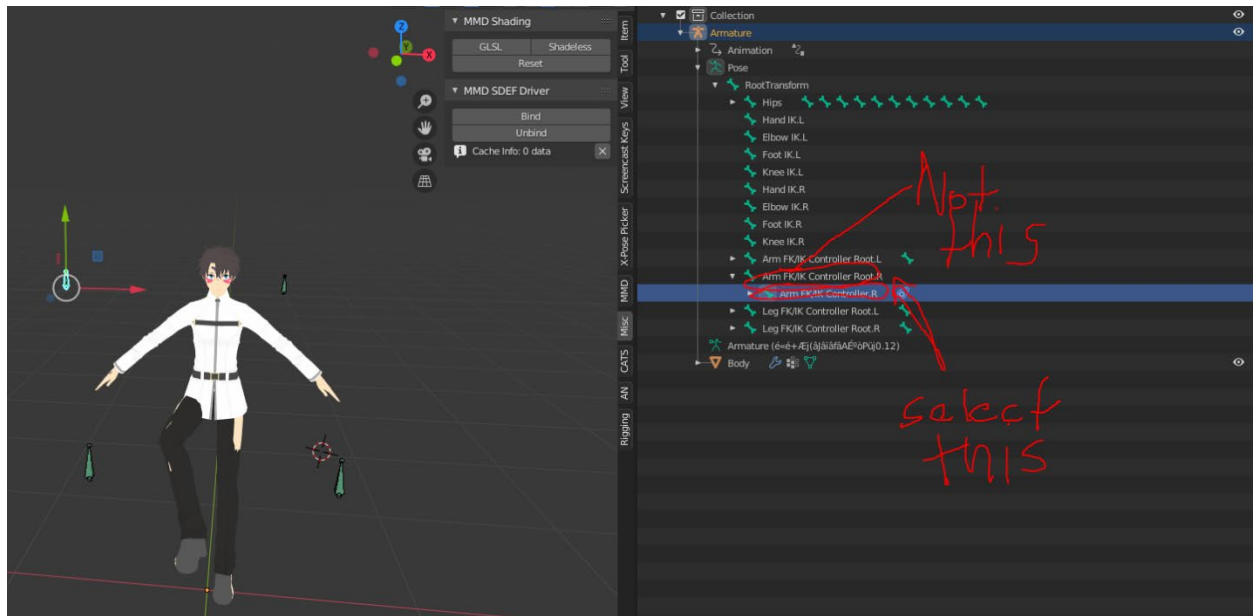


Q: When I select the FK to IK controllers when I don't have custom bones enabled, they don't switch from FK to IK or vice versa.

A: Make sure you're selecting the actual slider bones rather than the root bones. The two bones overlap with each other when you don't have custom bones enabled. To solve this, double click on the bone until you select the green bone or Blender shows you're selecting the controller bone.



Another way to make sure you're selecting the right bone is to use the outliner.



Q: My question cannot be found here. Is there a way to get help?

A: You can email us at Daitomodachichannel@gmail.com with any other issues you're experiencing with the rigger.

With that said, thank you for reading and I hope you have a wonderful day or night!