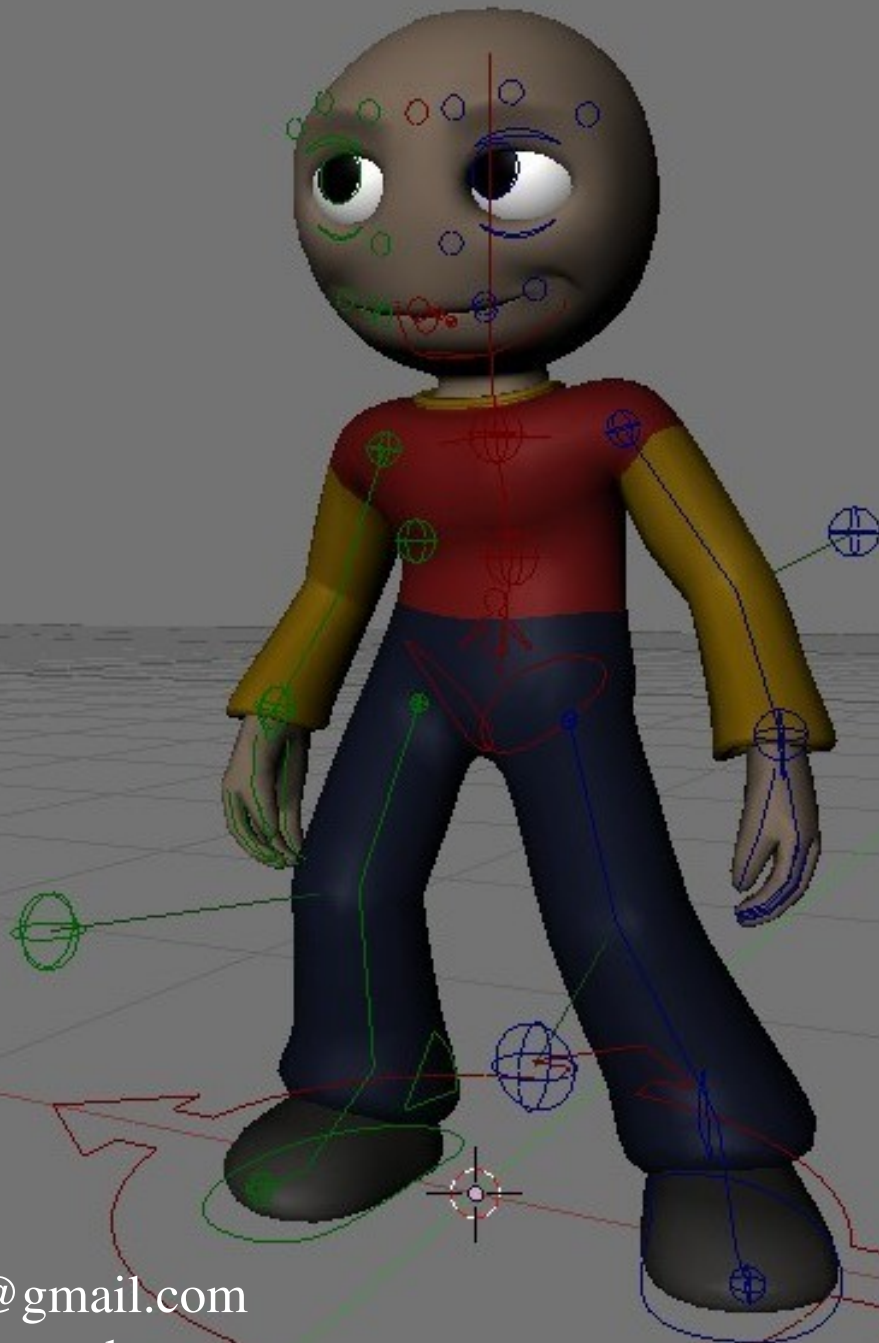


MTI Little Fella

For blender 2.49

Made by

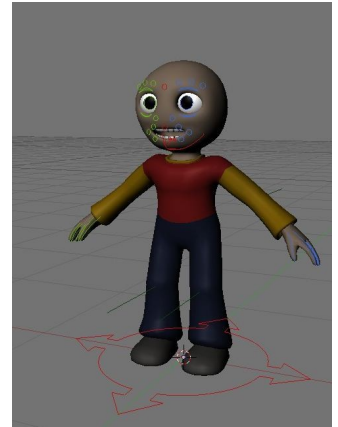
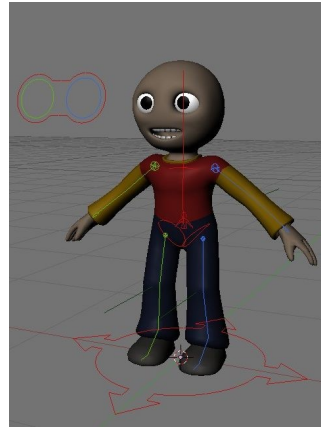
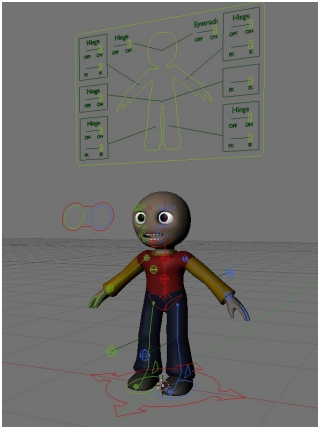


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thelowlander.wordpress.com
thelowlander.org

Thank you for downloading the MTI_littlefella rig!

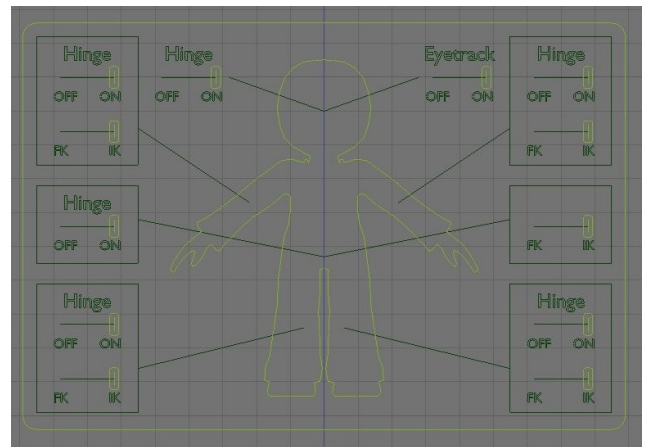
This manual will explain the basics on how to use the rig.

For commercial work, please read the license that is included in the .blend and as a .txt file.



These 5 images present the different bone layer setups.

1. All (layer 1-5)
2. IK controls (layer 1)
3. FK controls (layer 2)
4. Hand/finger and facial controls (layer 3/4)
5. Hinge and IK/FK switches (layer 5)



You can find the bone layers under:

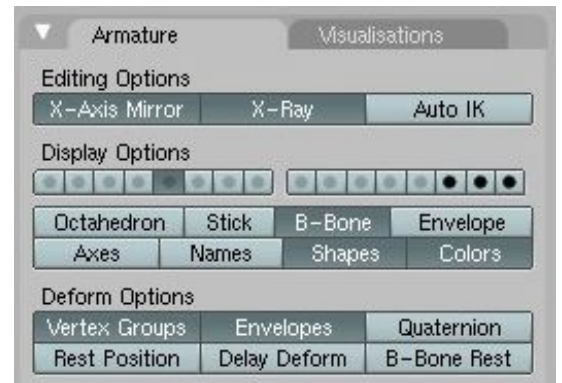
Buttons Window>Editing panel (F9), in the “Armature” tab.

The layers with the black dots on them are locked for linking.

They contain additional bones that are not meant for posing the rig.

Bones have the following colours:

- Green for right side
- Blue for left side
- Red for center



You should be familiar with terms like IK/FK, and hinge. A short explanation:

FK (forward kinematics) means that in a set hierarchy, the children move/rotate/scale along with their parent bone. Example: the upperarm moves, and the forearm moves along, which moves the hand along, to the last finger. IK (inverse kinematics) sometimes however, you’ll want a hand to stay fixed in a certain location.

Example: doing pull-ups on a bar, the hand must stay fixed to the bar while the body moves. The parent follows the child, hence the name INVERSE kinematics.

Hinge means that when using FK, a child bone will not rotate along with it’s parent. This is useful when fine-tuning the position of the shoulders and arms. You can rotate the torso without having to readjust the arms.

For those new to Blender:

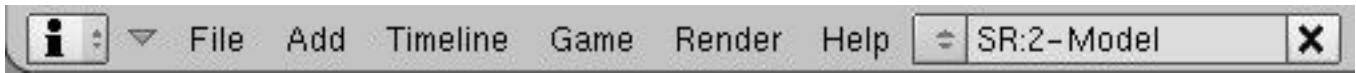
One of the first things you'd likely want to know about blender is how to navigate the 3D window.

- MMB rotates the screen by default in trackball mode (can be changed to “pan view”, and/or turntable mode)
- SHIFT+MMB pans the screen by default (can be changed to rotate view)
- CTRL+MMB or scrolling the mousewheel zooms the view in and out.

Change the 3D view controls in the “User preferences” window. (“I” icon, top left, pull the window down).

By default the “View & Controls” tab is active.

When you want to save your default settings, press CTRL+U.



Some people like manipulators to move stuff around, I don't but I'll cover them here.

In the MTI_littlefella rig file, manipulators are off by default.

To bring them up, go to the 3D window's header and choose your manipulator CTRL+SPACE) (CTRL+ALT+G/R/S) of choice.

You can press shift to combine manipulators. By default, the manipulator works in “world orientation”. You can change this to various other modes, by going to the header, and choosing your orientation (ALT+SPACE).

Posing the rig with these manipulators, or gizmo's as I like to call them is straightforward enough, You can move/rotate/scale by grabbing the icon on the desired axis.

You can exclude an axis by selecting it with shift while doing the transformation.

For example: pressing SHIFT+Z in grab mode makes your object move along the XY axis.

I like to use hotkeys and gestures though...

Selecting and hotkeys:

- Lasso select something with CTRL+drag LMB, press G+X to move along the X axis.
- Select something with RMB or SHIFT+RMB to add another object/bone to the selection, press R+Y+Y+(-45) to rotate -45° around the LOCAL Y axis. Enter or LMB to confirm.
- Select something with RMB, press R+R to rotate in turntable mode.
Try turntable rotating the shoulders, hips and hands.
- Select something with RMB, press S+10 to scale up with a factor of 10.
- Select something with RMB, keep pressing RMB to start grabbing/moving the selected object or bone.

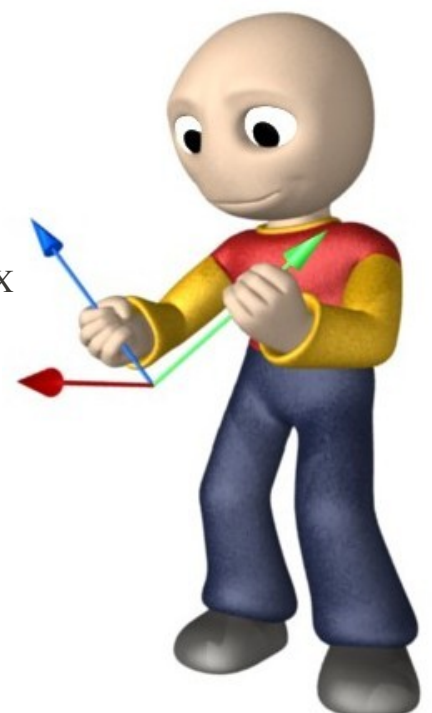
Gestures:

- Drag a line with LMB to activate the gesture “grab” (same as pressing G) +20X moves the object 20 Blender units (BU) along the X axis.
- Drag a circle with LMB to activate the gesture “rotate”
- Drag a “V” with LMB to activate the gesture “scale”

To reset the pose, press W>Clear user transforms.

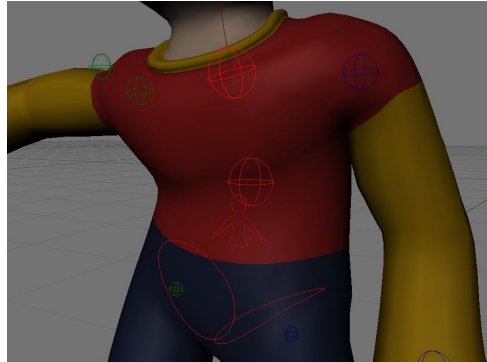
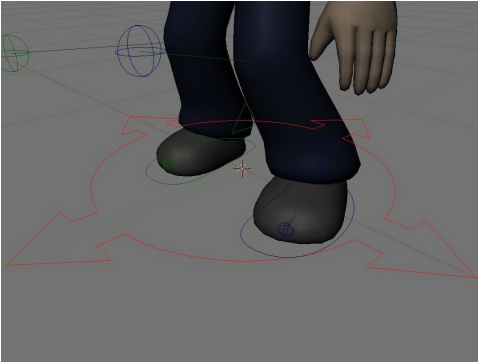
Alternatively you can use ALT+G, ALT+R, ALT+S to clear the location, rotation and scale respectively.

That's about it. Use those shortcuts! They're fast!

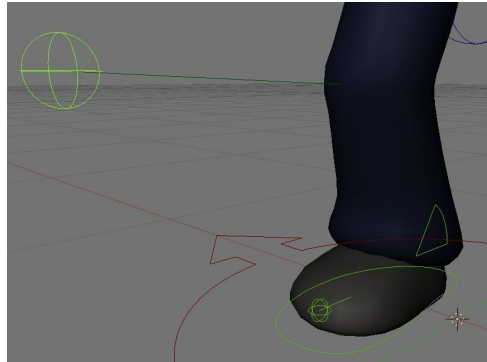
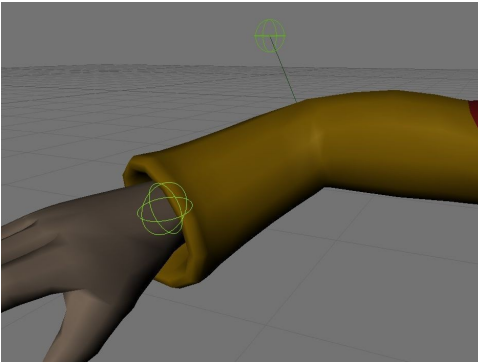


On the first bone layer are the IK controls. They are shaped like spheres. Eye controls are also on this layer, but I'll cover them on the next page.

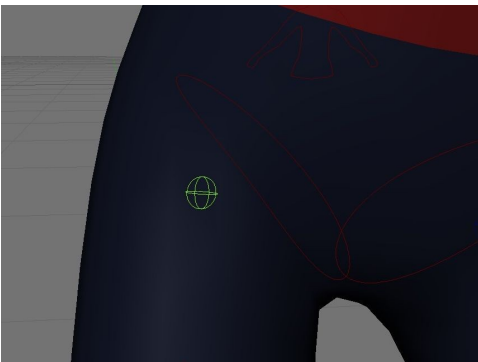
Moving the circle with the arrows at the ground will move the entire rig. This is the root bone. The upper-body shaped bone moves the upper-body. The waist bone consists of two circles and moves the waist. The spheres in the stomach and torso position the torso. You can also rotate them to twist the waist, spine and chest.



You can grab and pull the sphere at the “wrist” to move the arm, and the corresponding sphere with a black line running to the elbow to point, guess what, the elbow. Try to rotate the hands by pressing R+Y+Y. You can grab the flat feet to move the feet, and the corresponding sphere with a black line going to the knee to position the knees. Also try to rotate a foot, press R+Z(+Z) to rotate around the Z axis. There are pie-shaped bones behind the ankles that make the foot roll, there is a line in the toe that rotates the toe, and at the tip of the toe is a small sphere to rotate the foot around the toe.



You can grab the spheres at the hips and shoulders to rotate the hips and the shoulders. Press R+Y+Y to “roll” them. This hotkey combination will rotate the bone around it's local Y axis. Very useful for the shoulders.



On the second bone layer are the IK controls.

They work pretty self-explanatory. They are shaped like lines and run through the body like a skeleton.

Select a bone (for example, with RMB or CTRL+drag LMB) and start to grab/rotate a bone. You cannot pull a bone loose so it will always rotate.

In reality, with real humans/biped creatures, the forearm can only rotate along one axis (in this case, the local X axis). But to keep a bit of freedom for the animator, and because it might be useful to tweak how an arm deforms, the rotation of the forearm and lowerleg is unlocked. You can rotate them in any way.

To rotate them like a real arm, press R+X+X to rotate along the local X axis. To twist them, press R+Y+Y to rotate along the local Y axis. Rotating along the local Z axis is not something a healthy arm does, so better leave that alone.

The eye is easy to use as well. You grab and move the red “goggles” to point the eyes, and the blue and green circles can be moved individually to point the eyes individually.



On the third bone layer are the controls for the hands.
These controls are also shaped as lines.

In the first picture, the first bones in the fingers are selected.
When you rotate these bones along the local X axis (R+X+X)
you curl the fingers. You can rotate them in the other directions
as well, but only local X rotation will curl the fingers.



Want the fingers to rotate but not curl them? No problem.
You can select and independently rotate the other two bones in
a finger as well.



The bone at the side of the hand will allow you to curl the palm.
When you make a fist your hand rotates inwards a bit.
You can grab and move this bone a little bit, and you can also select
and rotate it a bit.

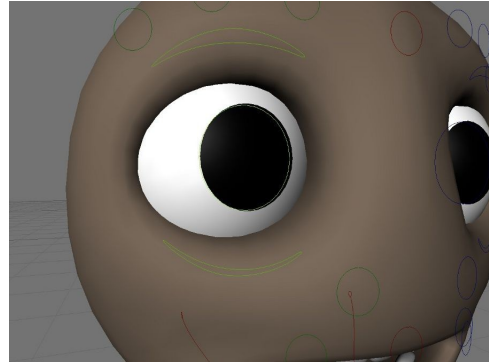
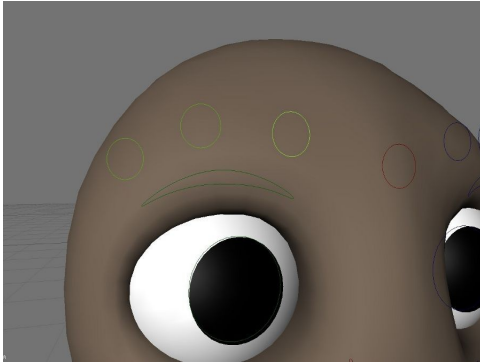


On the fourth bone layer are the controls for the face.
Most of these controls are shaped like circles, and are pretty straightforward.

Above the eyes are the eyebrow bones. You can grab, rotate and scale them. The red circle in the center is the frown bone. Likewise, you can grab, rotate or scale it (G/R/S).

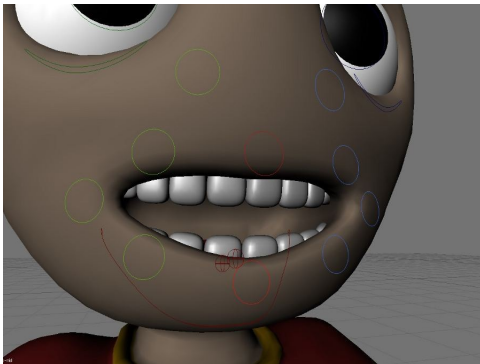
Below that are the control for the eye. If you grab the moon-shaped bones at the eyelids you will rotate them. Use a shortcut like R+X+X to rotate along the local X axis of the bone. This will close the selected eyelid.

Around the pupil is another circle which will rotate the eye individually. By default the eyes track to the eye-tracker bone, this extra circle just provides some extra control.

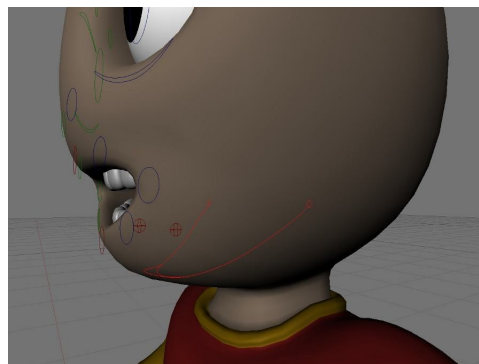


Around the mouth are little circles that control the lips. You can grab, rotate and scale these circles. Most of the time, you'll want to grab and maybe rotate them. There are 2 “nose crinkle” bones you can move for some extra control. Normally, your character would need a nose for this to be very useful :)

There are 2 spheres in the tongue that you can grab, rotate and scale to move the tongue as well.



Grabbing the jawbone rotates the jaw.



On the fifth bone layer is the slider frame.

The sliders in this frame are used to toggle properties like from IK to FK, and Hinge on and off.

Like mentioned earlier on page 2:

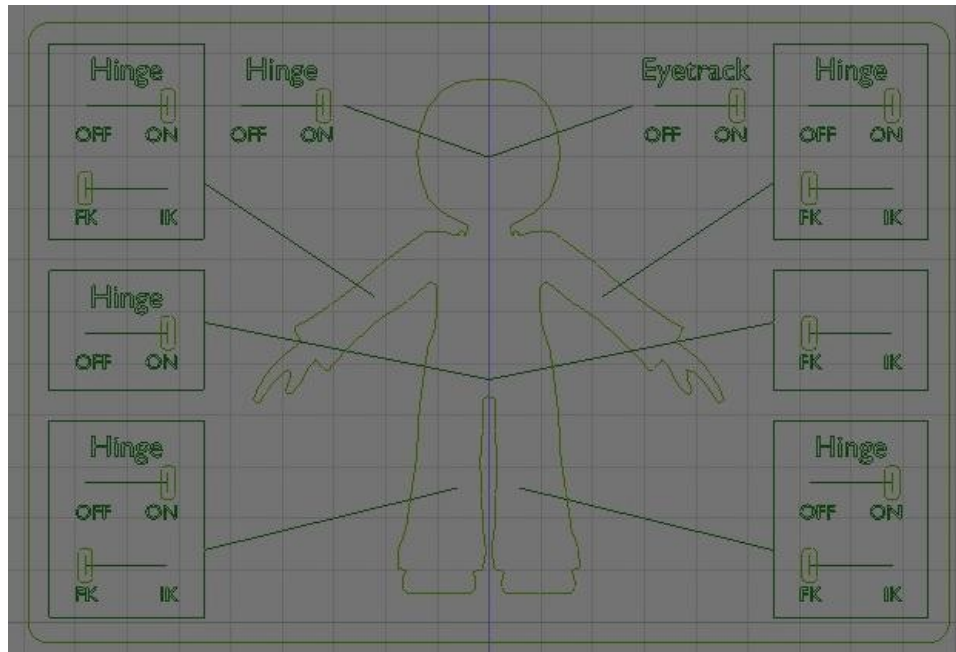
- IK makes the arm follow the hand, FK makes the hand follow the arm.
- Hinge on makes the limbs NOT rotate along (inherit rotation from their parent bone) with the torso.

HINGE IS NOT RELEVANT WHEN WORKING IN IK MODE!

Because the arms/legs follow the IK controls (the spheres), they automatically hinge.

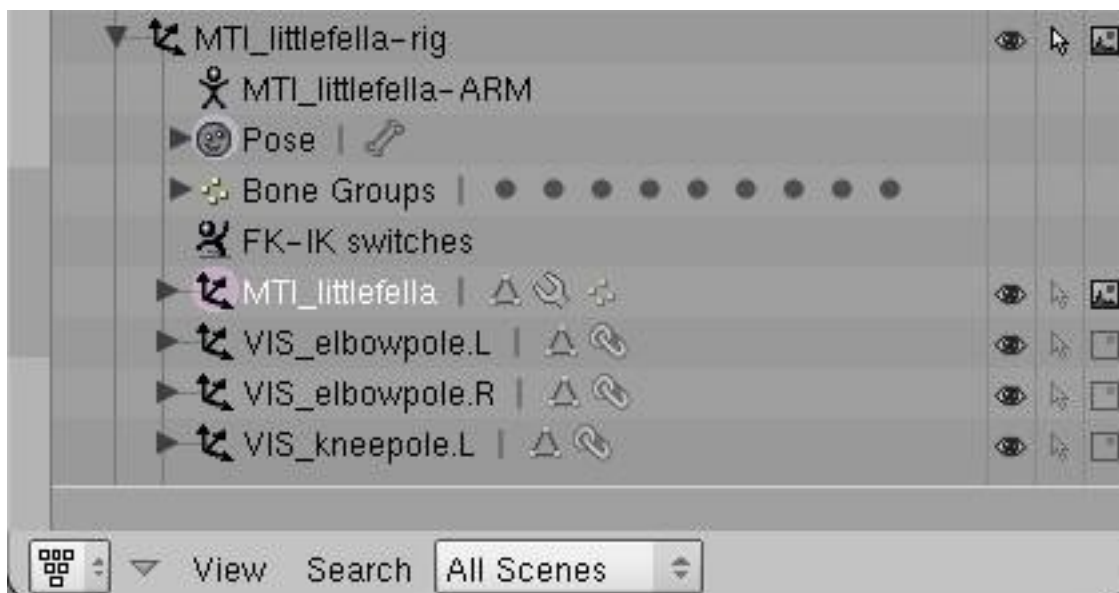
The hinge sliders are useful when you're working with FK. They are set to "On" by default. Everything else is set to IK by default as well.

These will probably be the preferred settings for most users.



MTI_littlefella has a few materials to give it different colours. To change these materials, first you have to select the MTI_littlefella object. By default MTI_littlefella is made unselectable. You don't want to accidentally select the character when you want to pose the skeleton after all...

To select the MTI_littlefella object, you must check the mouse-icon in the outliner window.



With the MTI_littlefella object selected you can change it's material properties.

MTI_littlefella has several material indexes for areas like the arms, the shirt, the legs, and skin.

Each index has or can have it's own material.

Material indexes are not complex, but they can be a bit confusing for people new to the concept.

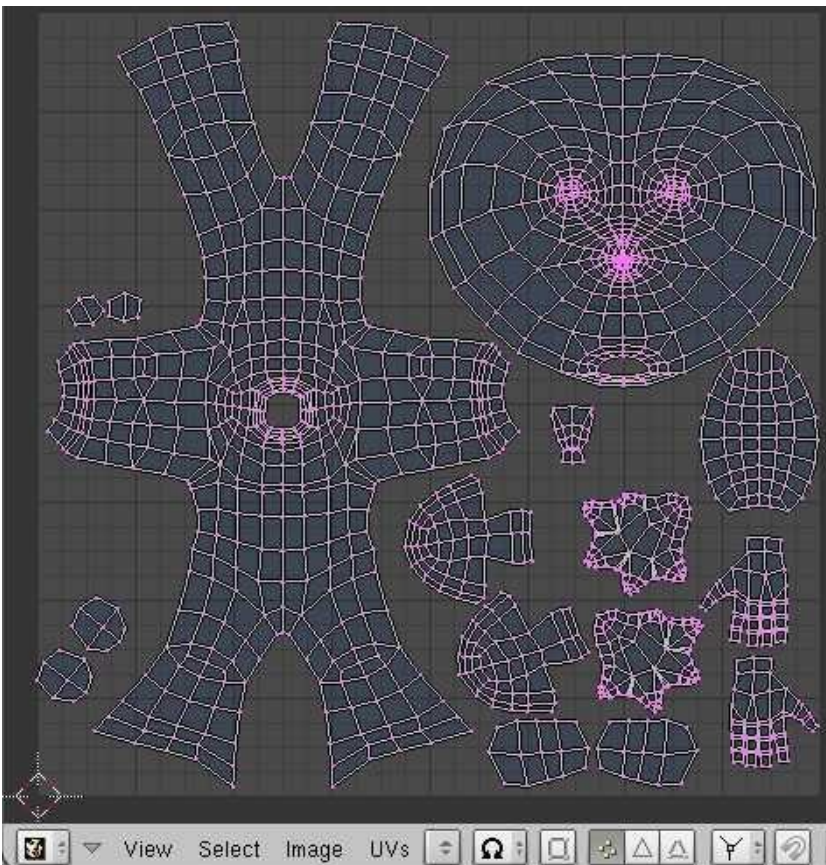
First let's check out the colours:

In the “Material” tab, clicking on the coloured area left of the “Col” button will allow you to select a colour.

In the “Links and Pipeline” tab, clicking the little arrows in the “6 Mat 6” field will change to a different material index, which has a different material assigned. Change to another material index and change the colour for that other material if you like. If you change the material MA:tongue to another material instead you didn't change the colour, you just gave “material index 6” or the the tongue area, another material!! For instance, the same material as the shirt. So If you change the shirt to green, the tongue also turns green. Be careful with that.



MTI_littlefella also comes with an UV map. This means you can use a custom picture to give him a different appearance. Think of it as a “skinned” wireframe version that is laid out on a plane. You draw on this wireframe and apply the image back to the model. Blender offers various ways to paint an image, but that is beyond the scope of this manual.



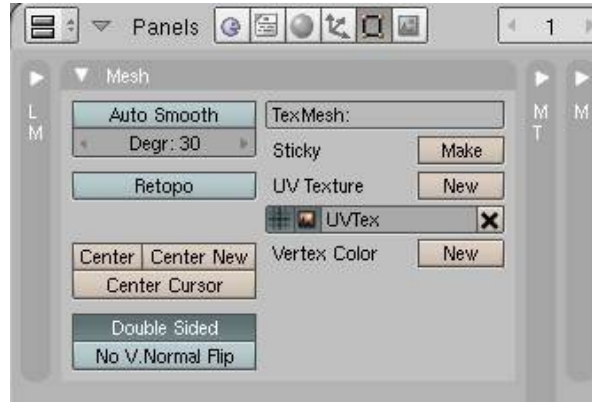
To export the UV map to open in you image editor, select MTI_littlefella in the outliner. Hit TAB to go into edit mode and press A(twice) to select all. Change a window into the UV editor. In the UV editor's header go to: Uvs>scripts>save UV face layout.

To make the image appear first we need to make sure the object (or rather, the mesh which is the model) has a UV texture, and what its name is. You can see it in the “mesh” tab in the editing buttons.

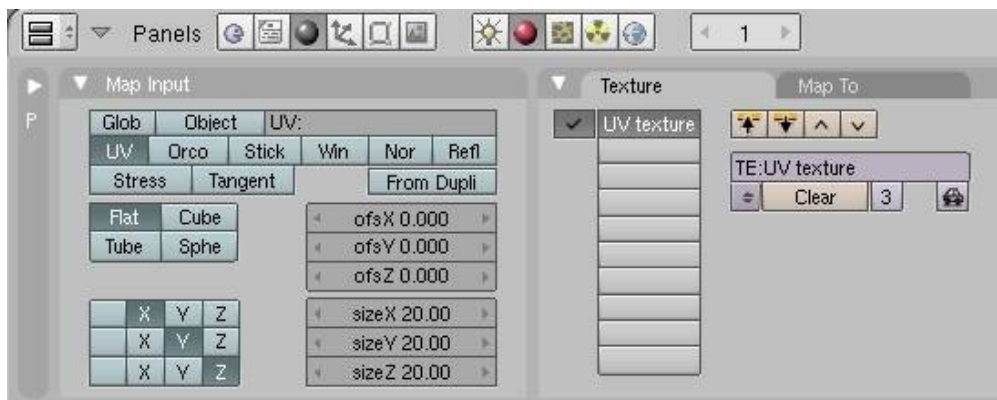
In this case, the UV texture is called UVTex.

The small grid icon is dark, which means it is active, and this will be the UV you can edit in the UV editor. This is useful because you can have multiple UV maps, and you don't want to edit them at the same time. In this example, there is only one.

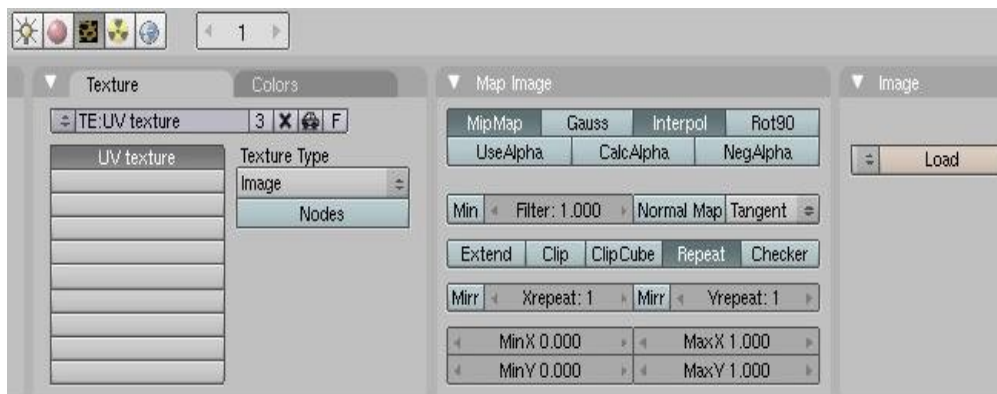
The small image icon is also active, which means it will render with this UV texture.



In the material options, change the “map input” tab to UV, and in the “UV:” field, enter UVTex. The field is empty in this example. To make the texture show up, make sure it is activated in the “Texture” tab.



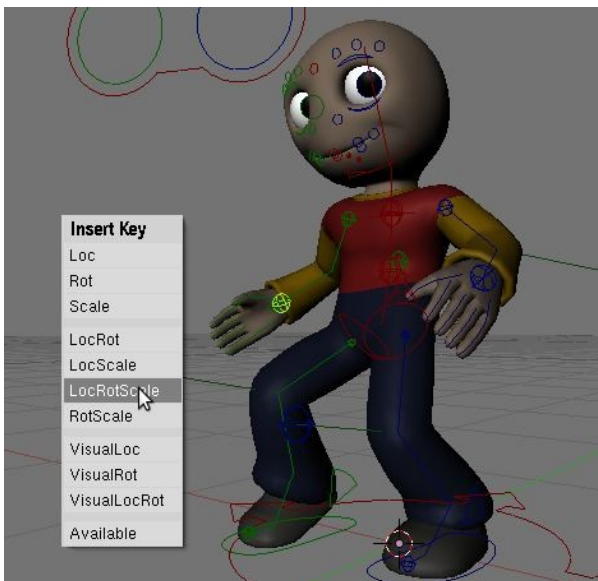
In the header, change from the red material sphere to the square texture icon. This will take you to the texture settings. Under the new “Texture” tab, under “Texture Type”, choose “Image”. The settings for an image will appear next to it, and you can load or select an image in the tab next to it.



To render an image, you press F12. You won't see anything other than a black screen unless you have a camera and some lights in the scene though... To add those, press SHIFT+A (default in the blender 2.4 and 2.5 series) or Space (only in the 2.4 series. In the 2.5 series, space will bring up an interactive search menu) Select “Add” from the dropdown list, then “Camera” or “Lamp>Lamp Type”.

To fully cover animation and rendering is far beyond the scope of this manual. I suggest you take a look here: http://wiki.blender.org/index.php/Doc:Tutorials/Animation/BSoD/Character_Animation

I will however give some quick tips. After posing MTI_littlefella, select the bones you want to animate or “key” and press I to insert a keyframe. You can select various options like location, rotation, scale and combinations.



The render options can be found under the Scene (F10). Here you can set various properties, such as the resolution or size of your render, and the length of your animation. Animation duration is given in frames, not seconds. There are numeral standards (PAL, NTSC) that all have different standards for the amount of frames per second.



More resources:

Blender.org (For the open source application blender, used to create this character)
<http://wiki.blender.org/index.php/Doc:Manual> (For the manual for blender 2.49)
<http://www.blendercookie.com/> (Lots of blender related tutorials on various topics)
<http://cgmasters.net/> (Blender related tutorials)

Open movie projects:

<http://www.elephantsdream.org/> (The first blender open movie)
<http://www.bigbuckbunny.org/> (The second blender open movie, with a lot of tutorials on the DVD)
<http://www.sintel.org/> (The most recent blender open movie, again, a lot of quality tutorials on the DVD)

Various open movie workshop DVDs.

http://www.blender3d.org/e-shop/default_dvds.php

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