Merper VR User Guide

General Considerations

While there's a mirror window, the game is intended to be used in VR - there is no supported functionality outside a VR environment.

The UI has been designed around the HTC Vive for room scale operation - please use caution and follow the manufacturer’s safety recommendations before using this application.

User Interface (UI)

For the purpose of this guide, the buttons that trigger actions are based on the HTC Vice default controller and are referred to as follows:

TRIGGER - located on the underside of the controller, usually operated with the index finger. Variable axis support.

DPAD - big round pad located on the top side of the controller. Supports touch interface and click. Usually operated with thumb.

MENU - small button located on the top side of the controller, above the DPAD. Usually operated with thumb.

GRAB - side button located on the side of the controller. Usually operated with whole hand by squeezing the controller.

SYSTEM MENU - small button located on the top side of the controller, below DPAD. Usually operated with thumb. This is used to bring up the system menu and has no specific functionality for this application

For button help, look at the controller and bring it close to your face.

The user interface includes buttons and other selectable elements floating in space. Use your controllers to point to UI elements using a "laser pointer" style - aim at something to have the equivalent of a mouse-over behavior, click the **TRIGGER** to select. When you point to a selectable button, the corresponding laser for the controller will display.

There is a **menu bar** located on the left side of the main UI block. The options are:
LOAD - opens a model file to be animated.
SAVE - writes back any animation changes to the model file on disk. **NOTE: this will overwrite the existing file.**
ENVIRONMENTS - toggles the environment selector bar, the row of spheres on the bottom left of the main UI block
SETTINGS - toggles the settings bar, the text on the bottom right of the main UI block.
ABOUT - shows licensing and additional information about the application.

The **environment selector bar** is a set of different illumination settings. Click the desired one to see the change applied to everything from the buttons to the controllers and any model that's currently being animated.

The controllers have four modes of operation, each one with a specific name and color that is permanently displayed on the controller model. Depending on which mode is active for that particular controller, the **DPAD** will display different dot patterns for additional functionality. Touch closer to the dots to reveal their function, click on them to activate.

The **settings bar** has visual feedback for some additional options. It displays the axis lock for motion and the toggle for moving at the skeleton base (usually the hip) versus any joint. These are also available using the **REARRANGE (blue)** mode of **DPAD** operation from the controller.

Animating a model

Start by loading a model by selecting the the **LOAD** button.

Sample models are provided (all licensed under CC0, see ABOUT for more details) although any compatible FBX file can be used. The application is intended to be used with skinned meshes with a skeletal hierarchy: although non-skinned models will load, the functionality will be limited.

When a model is displayed, you will see additional timing and animation information for that model. Click on an animation to select it, or add a new one. Move between keyframes and change the default keyframe duration using the top panel.

Once a model is loaded, physically move a controller near it to reveal its internal skeleton structure. Using the **TRIGGER** when close enough to a joint, you will see the axis for that join indicate that it is the current one being selected. While the **TRIGGER** is pressed, you will be able to position that bone and that part of the model. Think of grabbing the bone by the joint and posing it as you would a manekin.

The yellow skeleton is the current position, the orange one is the previous key position - this is to help match them in between keyframes as done in traditional cell animation.

To make an animation, pose the model into desired position and add a keyframe using the **DPAD** in **MANIPULATE (green)** mode. Continue to add keyframes to create an animation. As you move back and forth between keyframes you can update them in place to tweak the motion. You can also split a keyframe by adding one in between two existing ones and delete any keyframes you don't need. The default time in between keyframes is half a second and it can be adjusted on the top panel.

Additional options

The **POSE (yellow)** mode has options to copy, paste, mirror and select default poses on a model. When you apply these poses you will change your current keyframe.

The **EXPRESS (red)** mode has options to loop an animation and take screenshots.

One minute walk cycle

The power of MerperVR lies in its intuitive nature and rapid prototyping ability. Here's how to make a quick walk cycle in under a minute.

1. Put a controller in **MANIPULATE (green)** mode.
2. **LOAD** a model using the main menu. Let's choose the mh_male sample one.
3. Move the model joints in a way that the left leg is forward and the right is back.
4. Add a new animation by pressing the **Add New** animation button on the center panel.
5. Add **two** keyframes using the **DPAD** in **MANIPULATE (green)** mode.
6. Move back to the middle keyframe by using the **DPAD** in **MANIPULATE (green)** mode.
7. Put a controller in **POSE (yellow)** mode and click **MIRROR POSE.**
8. Put a controller in **EXPRESS (red)** mode, select **LOOP** and then hit **START** to see the animation.

To refine this, you can always split the existing keyframes, re-adjust the pose and use the copy and mirror features to complete the cycle.