

Live2D FaceRig Avatars Documentation

Mandatory stuff

Live2D avatars can become FaceRig avatars, if they meet several characteristics. FaceRig uses the ***.moc** and ***.json** files of the Live2D avatar, along with the **subfolder** holding the Live2D **textures**. These textures must be dimensioned by the power of two, in order to work in FaceRig. That means something like square image of 512,1024, 2048 etc.

These Live2D data must be placed in **SteamApps/Common/Facerig/Mod/VP/PC_CustomData/Objects** in a folder dedicated to the respective avatar.

These above specifics enable FaceRig to identify and use the Avatar. However, for extended features the Live2D avatar must respect further rules.

Additional descriptive specifications

In order to be easily found in the avatar list, the avatar must have an **icon image file** and **two *.cfg file**.

The icon must be a png square image, by the power of two dimensions, something like 256/256. The icon must be named “ico_”+the_avatar_name+”.png”, where avatar name is the name of the *.moc file.

The *.cfg files enable additional features, such as setting a friendly name for your avatar. This name will be used by the search by name function in FaceRig avatar browser window.

In order to set a friendly name a text file named “cc_names_”+ the_avatar_name+”.cfg” must be created. This file should contain the following command line:

```
set_friendly_name the_avatar_name 'the_avatar_friendly_name'
```

where the avatar name is the *.moc file and the friendly name is a name of your liking. Beware of the fact the friendly name must be encompassed by the quote symbol '.

In order to add a descriptive text for the avatar the following command line must be used:

```
set_avatar_skin_description the_avatar_name default 'the_avatar_description' where the avatar description is a text of your liking. You can use this feature to add licensing info regarding the avatar.
```

Motion specifications

As Live2D Animator software, FaceRig moves Live 2D avatars sending values to avatar input parameters. There are certain parameters that are mapped to FaceRig animation functionality.

For the **head** movement the following parameters are used:

Angle X (PARAM_ANGLE_X) for right to left twist movement. This motion must be in -30 to 30 range.

Angle Y (PARAM_ANGLE_Y) for down to up movement. This motion must be in -30 to 30 range.
Angle Z (PARAM_ANGLE_Z) for right to left lean movement. This motion must be in -30 to 30 range.

For **body** movement the following parameters are used:

Body X (PARAM_BODY_ANGLE_X) for right to left twist movement. This motion must be in -10 to 10 range.
Body Z (PARAM_BODY_ANGLE_Z) for right to left twist movement. This motion must be in -10 to 10 range.
Breath (PARAM_BREATH) for breathing movement. This motion must be in 0 to 1 range.

For **eyes** movement the following parameters are used:

Eyeball X (PARAM_EYE_BALL_X) for right to left movement. This motion must be in -1 to 1 range.
Eyeball Y (PARAM_EYE_BALL_Y) for down to up movement. This motion must be in -1 to 1 range.
EyeL Open (PARAM_EYE_L_OPEN) for closed to open left eye movement. This motion must be in 0 to 1 range, but at 0.75 the eye should already be in open state.
EyeR Open (PARAM_EYE_R_OPEN) for closed to open right eye movement. This motion must be in 0 to 1 range, but at 0.75 the eye should already be in open state.
Eye Form (PARAM_EYE_FORM) bends eyes contour to complement frown expression. This motion must be in -1 to 1 range.

For **eyebrows** movement the following parameters are used:

BrowL Y (PARAM_BROW_L_Y) for left eyebrow down to up movement. This motion must be in -1 to 1 range.
BrowR Y (PARAM_BROW_R_Y) for right eyebrow down to up movement. This motion must be in -1 to 1 range.
BrowL Angle (PARAM_BROW_L_ANGLE) for left eyebrow tilting movement. This motion must be in -1 to 1 range.
BrowL Deform (PARAM_BROW_L_DEFORM) for left eyebrow changing shape movement. This motion must be in -1 to 1 range.
BrowR Angle (PARAM_BROW_R_ANGLE) for right eyebrow tilting movement. This motion must be in -1 to 1 range.
BrowR Deform (PARAM_BROW_R_DEFORM) for right eyebrow changing shape movement. This motion must be in -1 to 1 range.

For **mouth** movement the following parameters are used:

Mouth Open (PARAM_MOUTH_OPEN_Y) for mouth closed to open movement. This motion must be in 0 to 1 range.
Mouth Deform (PARAM_MOUTH_FORM) for sad to smile movement. This motion must be in -1 to 1 range.

Other features

These features are defined in secondary *.cfg file, named cc_**the_avatar_name**.cfg

Special Actions

If you want to add key pressing animation triggering to your Live2D avatar you must have a subfolder named motions containing .mtn files. These files can be created with Live2D Cubism Animator. More information on this topic can be found here: http://sites.cybernoids.jp/cubism_e/animator/basic

For binding the motion files to special animations keys in FaceRig you must write these command lines in cc_the_avatar_name .cfg file:

```
set_special_action_anim the_avatar_name 'the_animation_name.mtn' parameter_value
```

where parameter value represent an integer between 1 and 6. This parameter represents the special anim key number in FaceRig. The default keys are the following:

1 : Q

2 : W

3 : E

4 : R

5 : T

6 : Y

These keys can be modified from FaceRig > General Options > Key Bindings > Trigger Special Anim 1-6

Special Poses

You can also trigger by key pressing a set of motion parameters. The motion parameter will be set on key press to a max value (previously configured in cc_the_avatar_name .cfg, by default 1). When pressing the key again, the motion parameter will be set to a min value (previously configured in cc_the_avatar_name .cfg, by default 0). The default set of motion parameters and the key bindings are:

Blush (PARAM_TERE/PARAM_CHEEK) – Z key

Tear (PARAM_TEAR) – X key

Rage (PARAM_RAGE) – C key

Hair Soft (PARAM_HAIR_FLUFFY) – V key

These keys can be modified from FaceRig > General Options > Key Bindings > Trigger Special Pose 1-4

If you want to bind other motion parameters to Special Poses keys you must configure them in cc_[avatar_name].cfg with the following command line:

```
set_special_pose_param the_avatar_name parameter_ID min_value max_value parameter_value
```

where:

- **parameter ID** is a string (encompassed but quote symbol “ ’ ”) with parameter name as defined in Live2D Modeler,
- **min_value** should be the motion parameter's value when the pose is switched off
- **max_value** should be the motion parameter's value when the pose is switched on.
- **parameter_value** represents the Special Pose Number, which by default have the the next correspondence:

1 : Z
2 : X
3 : C
4 : V

Camera position

If you want to frame your avatar in the scene in a custom way then you must set a custom Camera position. For doing this, write the following command line in cc_[avatar_name].cfg:

```
set_cam_pos the_avatar_name pos_x pos_y pos_z
```

where pos_x, pos_y, pos_z represent the 3d position coordinates in meters.

Physics

Adding physics simulation to some avatar's features requires you to have a the_avatar_name.physics.json file in avatar's folder. For creating and exporting it, please read further here: http://sites.cybernoids.jp/cubism_e/live2dviewer/basic/physics/setting