EDITING STARTED

Leap Motion CHOP

SUMMARY

The Leap Motion CHOP reads hand, finger tool and gesture data from the Leap Motion controller. It outputs hand finger and tool positions, rotations and tracking channels that indicate if these objects are being tracked by the controller. Hand gesture data from the Leap Motion device can be connected at a time.

To connect with the device, you will need to install the Ultraleap Tracking Software and the TouchDesigner Plugin is recommended to use the latest version Geminn drivers (v5.0.0+) for Windows and Mac(v5.0.14.1+ or greater) that are available here: https://developer.ultraleap.com/tracking/software-downloads/

Gemini (v5.x.x+) or version 4 Orion drivers are also supported. See the Sys parameter details below for more information.

In addition to installing the driver, TouchDesigner Plugin must be installed to find the tracking library. Installation instructions are provided in the Prerequisites section.

On Windows: You can see the Library Folder parameter to find the location of the LeapC.dll (Orion/Gemini) or LeapC.dll.4.0.0 (Gemini) in the system. The file is installed as part of the Ultraleap Tracking Software and depending on the version installed, selected during installation.

On MacOS: The library folder should point to the location of the Ultraleap tracking app. By default it points to /Applications/Ultraleap Hand Tracking.app/Contents/Resources/. Make sure this folder points to where the applications contents folder. The .if extra library file in the Library folder should exist. This is an important distinction between Gemini V5 and the older V2/V4 APIs which could work in either connection.

Note: TouchDesigner does not include a license to use the Leap Motion software or software. Make sure to check with the Ultraleap/Leap Motion website for licensing information and terms of use for your project.

See also: Leap Motion, Leap Motion TOP

CONTENTS

PARAMETERS - SETUP PAGE

Active activate. When On data is captured from the Leap Motion device.

API api. 0 - Detect between Leap Motion Orion/Gemini and Leap Motion V5 offers the fastest and most stable tracking. V2 Tracking is slower but has less gestures.

Library Path libfolder. This parameter is used on Windows only to specify the location of the LeapC.dll (Orion/Gemini) or LeapC.dll.4.0.0 (Gemini) system. The file is installed as part of the Ultraleap Tracking Software and depending on the version installed, selected during installation.

On MacOS: This library folder should point to the location of the Ultraleap tracking app. By default it points to /Applications/Ultraleap Hand Tracking.app/Contents/Resources/. Make sure this folder points to where the applications contents folder. The .if extra library file in the Library folder should exist. This is an important distinction between Gemini V5 and the older V2/V4 APIs which could work in either connection.

Note: TouchDesigner does not include a license to use the Leap Motion software or software. Make sure to check with the Ultraleap/Leap Motion website for licensing information and terms of use for your project.

See also: Leap Motion, Leap Motion TOP

PARAMETERS - STATUS PAGE

Active active. When On data is captured from the Leap Motion device.

API api. 0 - Detect between Leap Motion Orion/Gemini and Leap Motion V5 offers the fastest and most stable tracking. V2 Tracking is slower but has less gestures.

Version version. The version parameter is used on Windows only to specify the version of the LeapC.dll (Orion/Gemini) or LeapC.dll.4.0.0 (Gemini) system. The file is installed as part of the Ultraleap Tracking Software and depending on the version installed, selected during installation.

On MacOS: This library folder should point to the location of the Ultraleap tracking app. By default it points to /Applications/Ultraleap Hand Tracking.app/Contents/Resources/. Make sure this folder points to where the applications contents folder. The .if extra library file in the Library folder should exist. This is an important distinction between Gemini V5 and the older V2/V4 APIs which could work in either connection.

Note: TouchDesigner does not include a license to use the Leap Motion software or software. Make sure to check with the Ultraleap/Leap Motion website for licensing information and terms of use for your project.

Version version. Version of the Leap Motion software. If set, the following channels will be included: **version** - 1 if the Leap Motion version is connected, 0 otherwise.

Hands hands. Number of hands corresponding to the current frame.

Tracking Channels trackingchans. If set, the following channels will be included for each detected hand:

hand_tracking - 1 if the hand is being tracked, 0 otherwise.

Fingers fingers. Number of fingers detected by the sensor.

Tools tools. Number of tools detected by the sensor.

Gestures gestures. Number of gestures detected by the sensor.

Hand Frame handframe. This is only available if Hand Finger Tracking is set. Hand Frame Tracking channels corresponding to the current frame.

Finger Channels fingerchans. If set, the following channels will be included for each finger of hands detected by the sensor:

finger - Number of fingers detected by the sensor.

Tool Channels toolchans. If set, the following channels will be included for each detected tool:

hand_tool - Coordinates of the hand relative to the sensor.

Gesture Channels gestures. If set, the following channels will be included for each hand, in addition to any other:

hand_velocity - Velocity of the detected hand.

Hand Spheres handspheres. This is only available if Hand Finger Tracking is set. Hand Sphere Tracking channels for tracking hands.

Hand Sphere Channels handsphere. If set, the following channels will be included for each sphere of hands detected by the sensor:

hand_sphere - Number of hand spheres detected by the sensor.

Hand Finger Channels handfinger. If set, the following channels will be included for each hand, in addition to any other:

hand_finger - Coordinates of the hand relative to the sensor.

Hand Velocity handvelocity. If set, the following channels will be included for each hand, in addition to any other:

hand_velocity - Velocity of the detected hand.

Hand Spheres handspheres. This is only available if Hand Finger Tracking is set. Hand Sphere Tracking channels for tracking hands.

Hand Sphere Channels handsphere. If set, the following channels will be included for each sphere of hands detected by the sensor:

hand_sphere - Number of hand spheres detected by the sensor.

Hand Finger Channels handfinger. If set, the following channels will be included for each hand, in addition to any other:

hand_finger - Coordinates of the hand relative to the sensor.

Hand Velocity handvelocity. If set, the following channels will be included for each hand, in addition to any other:

hand_velocity - Velocity of the detected hand.

Hand Rotation handrotation. Hand Rotation Tracking channels for tracking hands.

Hand Rotation Channels handrotation. If set, the following channels will be included for each hand:

hand_rotation - Coordinates of the hand relative to the sensor.

Finger Rotations fingerrot. If set, the following channels will be included for each finger, in addition to any other:

finger_rotation - Coordinates of the finger relative to the sensor.

Finger Tip Velocities fingertipvel. If set, the following channels will be included for each finger, in addition to any other:

finger_tip_velocity - Velocity of the finger tip.

Finger Widths fingerwidth. Width of the detected finger.

Finger Extended Fingerlengths fingerlengthext. Track length for each finger as, a finger is considered extended when it is straight as if pointing.

hand_fingerlength_extended - New Hand Finger Length Extended.

Finger Tip Positions fingertippos. The finger tip position.

hand_fingertippos - Coordinates of the start of the finger tip relative to the sensor.

Finger Tip Velocities fingertipvel. The finger tip position.

hand_fingertipvel - Coordinates of the finger tip velocity relative to the sensor.

Tools tools. Number of tools.

Tool Channels toolchans. If set, the following channels will be included for each detected tool:

tool_tip - Number of the detected tool.

Circle Gestures circlegestures. Number of circle gestures. The following channels will be included for each detected circle gesture:

circle_id - Number of the hand associated with the circle. See Notes.

Circle Radius circleradius. Radius of the circle in the sensor.

Circle Progress circleprog. Number of cycles done in the gesture.

Swipe Gestures swipegestures. Number of swipe gestures. The following channels will be included for each detected swipe gesture:

swipe_id - Number of the hand associated with the gesture. See Notes.

Swipe Positions swipepos. Index of the finger associated with the gesture. See Notes.

Swipe Speed swipespeed. Speed of the swipe.

Key Tap Gestures keytapgestures. Number of key tap gestures. The following channels will be included for each detected key tap gesture:

keytap_id - Number of the hand associated with the gesture. See Notes.

Key Tap Positions keytappos. Index of the finger associated with the gesture. See Notes.

Key Tap Progress keytapprog. Number of the finger associated with the gesture. See Notes.

Screen Tap Gestures screentapgestures. Number of screen tap gestures. The following channels will be included for each detected screen tap gesture:

screentap_id - Number of the hand associated with the gesture. See Notes.

Screen Tap Positions screentappos. Index of the finger associated with the gesture. See Notes.

Screen Tap Progress screentapprog. Number of the finger associated with the gesture. See Notes.

NOTE: Rotation order is XYZ XYZ. Rotations are in degrees. Positive rotations are counter clockwise.

For gestures, if handindex = 1, then channels with the name hand contain the data for the hand associated with the circle gesture. If handindex = 2 then there are no channels available for the hand associated with the circle gesture. Hand indexes for Gestures are:

Data for all indexed prefixes (hand*, finger*, tool*, gesture*) will always correspond to the same hand/finger/tool/gesture as long as the Leap Motion sensor is detecting it.

Hand Finger Tracking channels are available if the Leap Motion sensor if there are more than the specified limit detected

PARAMETERS - COMMON PAGE

Time Slice timeslice. Turning this on forces the channels to be "time Sliced". In this case, the CHOP will output the entire cook frame and the current cook frame.

Scope scope. To determine which channels get sliced, some CHOPs have a Scope string on the Common page.

Sample-Rate Match Mode rmmode. Handle cases where multiple input SOPs' sample rates are different. When Resampling occurs, the curves are resampled using the Interpolation Method. Option, or 'Linear' if the Interpolate Options are not available.

Export Interpolation Method exinterp. This will determine how to connect the CHOP channel to the parameter. Note: Export Interpolation Method overrides the Export Interpolation Method in the Export Options dialog