

How to Run the Example

1. Download and install OpenNI 2 and NITE 2, as described in the next section.
2. Open scene 'KinectAvatarsDemo', located in Assets/KinectDemos/AvatarsDemo-folder.
3. Run the scene. Move your body and see how the avatars and the cube-man reflect your movements. Both avatars are automatically connected to the 1st player in the example scene.
4. Use your left or right hand to control the hand-cursor on the screen. Try one or more of the suggested gestures and make sure they are detected correctly.
5. Open and run 'KinectGesturesDemo'-scene, located in Assets/GesturesDemo-folder. Use hand swipes – left and right - to control the presentation cube.

Installation of Kinect or PrimeSense sensor with OpenNI 2 (Windows)

1. Download and install OpenNI 2 and NiTE2. The OpenNI-website was closed by Apple, when they bought PrimeSense, but here is a working download link: <https://bitbucket.org/kaorun55/openni-2.2/src/>
2. Drivers for Kinect and PrimeSense sensors are installed during the OpenNI/NiTE installations.
3. If you're using Kinect-for-Xbox360 sensor, install the Kinect SDK 1.8 as well. Here is the download link: <http://www.microsoft.com/en-us/download/details.aspx?id=40278>
4. Connect the Kinect or PrimeSense sensor to a USB port of your computer.
5. Windows should find and use the installed drivers automatically. You can see the installed sensor in the 'Control Panel / Device Manager' window.

Installation of Kinect or PrimeSense sensor with OpenNI 2 (MacOS X)

1. Download and unpack OpenNI2 and NiTE2-tarballs in the /Library-folder. The OpenNI-website was closed by Apple, when they bought PrimeSense, but here is another download link: <https://bitbucket.org/kaorun55/openni-2.2/src/>
2. (Optional) Open or create '/etc/launchd.conf'-text file and set the needed environment variables. Add these lines: 'setenv OPENNI2_REDIST /Library/OpenNI-MacOSX-x64-2.2/Redist' and 'setenv NITE2_REDIST /Library/NiTE-MacOSX-x64-2.2/Redist'. Then restart your Mac.
3. Install Homebrew, as described [here](#).
4. Install libfreenect, like this: 'brew install libfreenect'. More information is available [here](#).
5. Open Terminal-app and run 'freenect-glfwview'. If the installation so far was correct, you should see the depth and color camera streams. Press Esc to close the application.
6. Copy the OpenNI2-Freenect driver to the OpenNI2 Drivers-folder, i.e. from '/usr/local/lib/OpenNI2-FreenectDriver/libFreenectDriver.dylib' to '/Library/OpenNI-MacOSX-x64-2.2/Redist/OpenNI2/Drivers'.

7. In Terminal-app, go to `/Library/OpenNI-MacOSX-x64-2.2/Samples/Bin` and run `'SimpleViewer'`. You should see the depth image, if the sensor is recognized.

Why Are There Two Avatars in the Scene

The meaning of the two avatars (humanoid models) in the scene is to show that you can have both – mirrored and non-mirrored avatar models.

First, you can have an avatar that mirrors your movement. This is the one facing you in the example scene. This avatar is parented to an empty game object called 'UCharCtrlFront', which has its Y-rotation set to 180 degrees. The AvatarController-component of the avatar game object 'U_CharacterFront' has its 'Mirrored Movement'-setting enabled. Mirroring means that when you, for instance, lift your left hand the avatar will lift his right hand and vice versa, like in a mirror.

The second avatar, that has his back turned at you, is not mirrored. It reproduces your movements as they are. Your left is its left and your right is its right. Its control object is called 'UCharCtrlBack'. It has Y-rotation set to 0 and the 'Mirrored Movement'-setting of its AvatarController is not enabled.

In order to get correct avatar positions and movements, always create an empty control object and parent the model to this object. Set the Y-rotation of the control-object as described above. Then you can move the avatar around the scene by moving its control object, leaving the model's local position and rotation set to 0. Pay attention to the 'Mirrored Movement'-setting of its AvatarController, too.

How to Reuse the OpenNI2 Kinect-Example in Your Own Unity Project

1. Copy folder '*KinectScripts*' from Assets-folder of the example to the Assets-folder of your project. This folder contains the needed Kinect scripts.
2. Copy folder '*Resources*' from the Assets-folder of the example to the Assets-folder of your project.
3. Start Unity and open your project.
4. Add 'AvatarController'-script to each avatar (humanoid model) in your game that needs to be controlled by the Kinect-sensor.
5. Drag and drop the appropriate bones of the avatar's skeleton from Hierarchy to the appropriate joint-variables (Transforms) of 'AvatarController'-script in the Inspector.
6. Disable 'Mirrored Movement', if the avatar should move in the same direction as the user. Enable it, if the avatar should mirror user's movements.
7. Create an empty KinectController game object and add 'KinectManager'-script as its component.
8. If you need a 2nd Kinect-user to control avatars, enable the 'Two Users' in the parameters of the 'KinectManager'-component. In this case, repeat steps 4-6 for each avatar, controlled by the 2nd user. Drag each avatar that has AvatarController-component to the Player2Avatars-list setting of the KinectManager-component.

9. Enable 'Compute User Map' and 'Display User Map'-settings, if you want to see the User/Depth Map on the screen. Enable only 'Compute User Map'-setting, if you want to use the user/depth-texture in your project, but don't want to display it on the screen.
10. Enable 'Compute Color Map' and 'Display Color Map'-settings, if you want to see the color camera image on the screen. Check only 'Compute Color Map', if you want to use the color-texture in your project, but don't want to display it on the screen.

Additional Reading

The following how-to tutorials are also located in the Assets-folder of the example Unity-package:

1. Howto-Use-Gestures-or-Create-Your-Own-Ones.pdf
2. Howto-Use-KinectManager-Across-Multiple-Scenes.pdf

Support and Feedback

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