




## Installation method and precautions when using RealSense D455 with Jetson Xavier NX

#Image processing #Image recognition #CV #Intel RealSense #Jetson Xavier NX

#RealSense # D455

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I'm Yamamoto from the cafe team.

Currently, the cafe uses a device called [RealSense made by Intel](#) as a camera for computer vision to acquire RGB images and Depth images. Recently, a new model number called [RealSense D455](#) was released.

This time, I tried running RealSense on this D455 with Jetson Xavier NX, which is one of the single boards. I used to run a device with a model number of D435i (which I stumbled upon a bit), and I **couldn't run the D455 with the same installation method, so I had to change the build**



The article when running D435i is as follows.



[Installation method, precautions, and implementation code when using RealSense D435i with Jetson Xavier NX](#)



We also have an article on connecting multiple RealSense devices, so please refer to this as well.



[Installation method, precautions, and implementation code when using RealSense with Jetson Xavier NX \(2 units\)](#)

[Installation method, precautions, and implementation code when using RealSense with Jetson Xavier NX \(4 units\)](#)



## 0. Prepare Jetson Xavier NX

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Same as for D435i. See "0. Preparing Jetson Xavier NX" in this article.



[Installation method, precautions, and implementation code when using RealSense 435i with Jetson Xavier NX](#)



## 1. 1. Install the library for RealSense

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### problem



## [JetsonHacksNano / installLibrealsense](#)

However, when I installed using this script as it is and tried to connect to D455 using pyrealsense, the device was not found.

Specifically, when I ran the following script, devices became an empty list and nothing was displayed.

```
1 | import pyrealsense2 as rs
2 |
3 | ctx = rs.context()
4 | devices = ctx.query_devices()
5 | for device in devices:
6 |     print(device)
```

## Cause

The script in the repository was old and was built by referring to the previous version of librealsense (v2.31.0). The D455 is a new model number, probably because it wasn't supported in older versions.

## [JetsonHacksNano / installLibrealsense](#)

As of 09/10/2020, the latest version (v2.38.1) is officially supported, so it seems good to use this.

## [IntelRealSense / librealsense](#)

## Solution

**Execute** the build script of the previous repository **after modifying the librealsense version setting** .

In addition, the following points had to be corrected.



Jetson Xavier NX (JetPack 4.4) does not have CUDA10.0 and CUDA10.2 is installed, so change the path.

(Originally, CUDA 10.0 is specified because it is a build script for Jetson Nano (JetPack 4.2))

## Add options to CMake

By default, it seems to build the library for python (Python2.7). Therefore, you need to specify the path to python3.

Options are described in the official repository.

[IntelRealSense / librealsense](#)

## Update CMake version

Jetson had cmake 3.10 installed, but it seems that even if I add the option above, it will be built for python (Python2.7). So it seems that you need to update the version.

Regarding this, I referred to the content discussed in the following issue.

[pyrealsense2 on python3 Jetson Xavier NX · Issue # 6980 · IntelRealSense / librealsense](#)

[install Realsense on Jetson Xavier agx · Issue # 7078 · IntelRealSense / librealsense](#)

## How I was able to install

### CMake update

Update CMake as follows: (I think it's okay if the version of CMake is newer.)

```
1 | cd ~
2 |
3 | mkdir buildCMake
4 | cd buildCMake
5 | sudo apt-get install libssl-dev
6 | wget https://github.com/Kitware/CMake/releases/download/v3.17.2/cmake-3.17.2.tar.gz
```



```
9 sudo ./bootstrap
10 # 結構待つ (数十分~1時間程度)
11 sudo make -j5
12 sudo make install
13
14 # cd ~
15 # rm -r -f buildCMake/
```

(After execution, in the terminal that is open at that time, CMake's path will shift and an execution error will occur, so you need to reopen it.)

## Installation of librealsense and pyrealsense

Execute the following command in the terminal to install and build. Based on the previous solution, I am modifying the script file on the way.

When finished, the library for python (pyrealsense2) will be output to /usr/local/lib/python3.6/pyrealsense2/ (other libraries will be installed as well).

```
1 # cd ~
2 git clone https://github.com/JetsonHacksNano/installLibrealsense
3 cd installLibrealsense
4
5 sh ./installLibrealsense.sh
6
7 nano ./buildLibrealsense.sh
8 -----以下のように変更-----
9 LIBREALSENSE_VERSION=v2.31.0
10 → LIBREALSENSE_VERSION=v2.38.1
11 # D455を利用するため。v2.31.0ではサポート外。
12
13 NVCC_PATH=/usr/local/cuda-10.0/bin/nvcc
14 → NVCC_PATH=/usr/local/cuda-10.2/bin/nvcc
15 # Xavier NX (JetPack 4.4) には、CUDA10.2がインストールされているため
16 # CUDA10.0はインストールされてない、Nano (JetPack 4.2) にはある
17
18 "time " を消す
19 # timeコマンドがあると、not foundという旨のエラーになる
20
```



```
23 # Python3用のライブラリを出力させる (アンインストールではpython (Python2.7) 用が出力されてしま
24 -----
25
26 sh ./buildLibrealsense.sh
27 # 結構待つ (数十分)
28
29 # cd ~
30 # rm -r -f ./installLibrealsense
31 # rm -r -f ./librealsense
```

Move the output library. (Or you may add a path).

```
1 | sudo cp /usr/local/lib/python3.6/pyrealsense2/py* /usr/local/lib
```

## 2. Verification

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With RealSense D455 connected, execute the following Python script, and if the device of D455 is displayed, it is OK.

```
1 | import pyrealsense2 as rs
2
3 | ctx = rs.context()
4 | devices = ctx.query_devices()
5 | for device in devices:
6 |     print(device)
```

## Summary

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I used a script from a public repository to run RealSense D455 in Python on Jetson Xavier NX. To use D455, there was a problem such as the specified version is old. By modifying the script settings and then executing it, I was able to install it correctly and use the D455.



## Related article



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