## 0. Instructions before use

Gemini2 is a camera of UVC device type. Therefore, after running the launch command, there may be a problem of using usb\_cam to drive the camera again or opency to open the video device. Here, you need to **replug** the camera once, and then use usb\_cam Or opency to use the camera. Another point is that the device number of the camera may not be fixed and unique, and the video device number will change after re-plugging, which will affect the later drive of the camera through usb\_cam or opency. Therefore, if the usb\_cam or opency camera fails to start after plugging and unplugging, you need to re-query the video device number. Some motherboards have more than one, so you need to test each video device number until you find the correct device number. Video device number query can use the following command,

```
ll /dev/video*
```

```
yahboom@VM:~$ ll /dev/video*
crw-rw-rw-+ 1 root video 81, 0 Jun 12 21:57 /dev/video0
crw-rw-rw-+ 1 root video 81, 1 Jun 12 21:57 /dev/video1
crw-rw-rw-+ 1 root video 81, 2 Jun 12 21:57 /dev/video2
crw-rw-rw-+ 1 root video 81, 3 Jun 12 21:57 /dev/video3
crw-rw-rw-+ 1 root video 81, 4 Jun 12 21:57 /dev/video4
crw-rw-rw-+ 1 root video 81, 5 Jun 12 21:57 /dev/video5
yahboom@VM:~$
```

Take me here as an example, I have 6 video device numbers here, so I need to test all six, how to test it? You can refer to the following methods

• To modify the content of the usb-camp function package, enter the following command,

sudo vim /opt/ros/melodic/share/usb\_cam/launch/usb\_cam-test.launch

Press [i] to enter edit mode, modify the number in /dev/video4 to /dev/video1 or other numbers, then press [Esc] to exit edit mode, press [shirt+:], input [wq], save and exit the document.

• Refresh environment variables, terminal input,

```
source ~/.bashrc
```

• Use usb-cam to drive the camera, terminal input,,

roslaunch usb\_cam usb\_cam-test.launch

```
Subhomowin:-S roslaunch usb.can.usb.can.test.launch
...loaging to /hone/yabboom/.ros/log/fa9d5da-0329-11ee-a48c-000c297e26fa/roslaunch-VN-26018.log
checking log directory for disk usage. This may take a while.
Press Ctrl.c to interrupt
Done checking log file disk usage. Usage is <1GB.

Submary

***Started roslaunch server http://WH:44977/

***SUBMARY

***STARTERS
** /inage_view/autosize: True
***/rosdistro: melodic
***/rosversion: 1.14-13
***/usb_can/clamera_frame_idi: usb_can
**/usb_can/clamera_frame_idi: usb_can
***/usb_can/clamera_frame_idi: usb_can
***/usb_can/clamera_frame_idi: usb_can
**/usb_can/clamera_frame_idi: usb_can
**/usb_can/clamera_frame_idi: usb_can
***/usb_can/clamera_frame_idi: usb_can
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***/usb_can/clamera_frame_idi: usb_can
***/usb_can/clamera_frame_idi: usb_can
***/usb_can/clamera_frame_idi: usb_can
***/usb_can/clamera_frame_idi: usb_can
***/usb_can/usb_can_node)
***/usb_can/ubc_device: /dev/video4

NODES
***/ubc_device: /dev/ubc_device: /dev/video4

NODES
***/ubc_dev
```

If the picture appears normally, the current video device number is modified, so when using opency to open the camera, it also needs to be modified synchronously, as shown below,

capture = cv.VideoCapture(4) #The number here is the device number, modify it
according to the actual situation