

AI Top Chef

Before running the function, you need to close the App and large programs. For the closing method, refer to [4. Preparation] - [1. Manage APP control services].

1. Function Description

After the program starts, give the large model an instruction, ask the large model what delicious food can be made with the ingredients on the desktop. The program will check the ingredients on the desktop and reply with what delicious food dishes can be made, and finally will grip the ingredients and place them on the left side of the robotic arm.

2. Startup

Taking the text version as an example, users with Jetson-Nano mainboard version need to enter the docker container first and then input the following command. Users with Orin mainboard can directly open the terminal and input the following command:

```
ros2 launch largemodel largemodel_control.launch.py text_chat_mode:=True
```

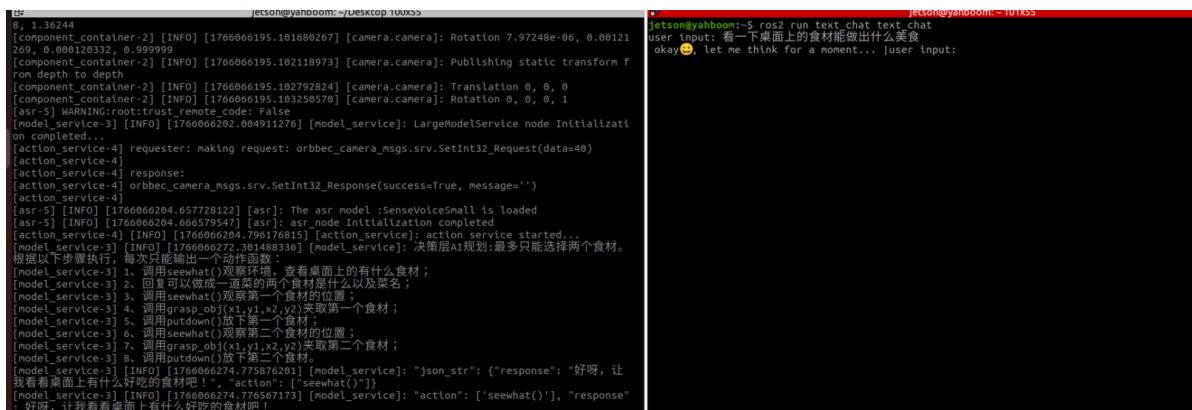
Then open a second terminal and input the following command:

```
ros2 run text_chat text_chat
```

Then input the following content in the text_chat terminal:

```
check what delicious food can be made with the ingredients on the desktop
```

Press Enter. If it's the voice version, wake up the voice module and directly say to the voice module "Check what delicious food can be made with the ingredients on the desktop", then wait for the large model to think and reply, as shown in the figure below:



The image shows two terminal windows. The left window displays the output of the ROS2 launch command, showing various log messages from the camera, asr, and model services. The right window shows the output of the text_chat program, where a user input '看一下桌上的食材能做出什么美食' (Check what delicious food can be made with the ingredients on the desktop) is received, and the program responds with 'okay, let me think for a moment...'.

```
jetson@yahooboom:~/Desktop/10003$ ros2 launch largemodel largemodel_control.launch.py text_chat_mode:=True
[component_container-2] [INFO] [1766066195.101680267] [camera.camera]: Rotation 7.97248e-06, 0.00121
269, 0.008120332, 0.999999
[component_container-2] [INFO] [1766066195.102118973] [camera.camera]: Publishing static transform f
rom depth to depth
[component_container-2] [INFO] [1766066195.102792824] [camera.camera]: Translation 0, 0, 0
[component_container-2] [INFO] [1766066195.103250570] [camera.camera]: Rotation 0, 0, 0, 1
[asr-5] WARNING:root:trust_remote_code: False
[model_service-3] [INFO] [1766066202.004911276] [model_service]: LargeModelService node Initializati
on completed...
[action_service-4] requester: making request: orbbec_camera_msgs.srv.SetInt32_Request(data=40)
[action_service-4] response:
[action_service-4] orbbec_camera_msgs.srv.SetInt32_Response(success=True, message='')
[action_service-4]
[asr-5] [INFO] [1766066204.657728122] [asr]: The asr model :SenseVoiceSmall is loaded
[asr-5] [INFO] [1766066204.666579547] [asr]: asr_node initialization completed
[action_service-4] [INFO] [1766066204.796376815] [action_service]: action_service started...
[model_service-3] [INFO] [1766066272.301488336] [model_service]: 决策层AI规划:最多只能选择两个食材。
根据以下步骤执行，每次只能输出一个动作函数：
1. 调用seewhat()观察环境，查看桌面上的有什么食材；
2. 回忆可以做成一道菜的两个食材是什么以及菜名；
3. 调用seewhat()观察第一个食材的位置；
4. 调用grasp_obj(x1,y1,x2,y2)夹取第一个食材；
5. 调用putdown()放下第一个食材；
6. 调用seewhat()观察第二个食材的位置；
7. 调用grasp_obj(x1,y1,x2,y2)夹取第二个食材；
8. 调用putdown()放下第二个食材。
[model_service-3] [INFO] [1766066274.775876201] [model_service]: "json_str": {"response": "好呀，让
我看桌面上有什么好吃的食材吧！", "action": ["seewhat()"]}]
[model_service-3] [INFO] [1766066274.776507173] [model_service]: "action": ["seewhat()"], "response
": "好呀，让我看看桌面上有什么好吃的食材吧！"]

jetson@yahooboom:~$ ros2 run text_chat text_chat
user input: 看一下桌上的食材能做出什么美食
okay😊, let me think for a moment... [user input:
```

The robotic arm will select two ingredients that can make delicious food based on what it sees, and will grip these two ingredients and place them on the left side of the robotic arm.

3. Task Planning

1. Call `seehat()` to observe the environment and check what ingredients are on the desktop;
2. Reply with what two ingredients can make a dish and the dish name;
3. Call `seehat()` to observe the position of the first ingredient;
4. Call `grasp_obj(x1, y1, x2, y2)` to grip the first ingredient;
5. Call `putdown()` to put down the first ingredient;
6. Call `seehat()` to observe the position of the second ingredient;
7. Call `grasp_obj(x1, y1, x2, y2)` to grip the second ingredient;
8. Call `putdown()` to put down the second ingredient.