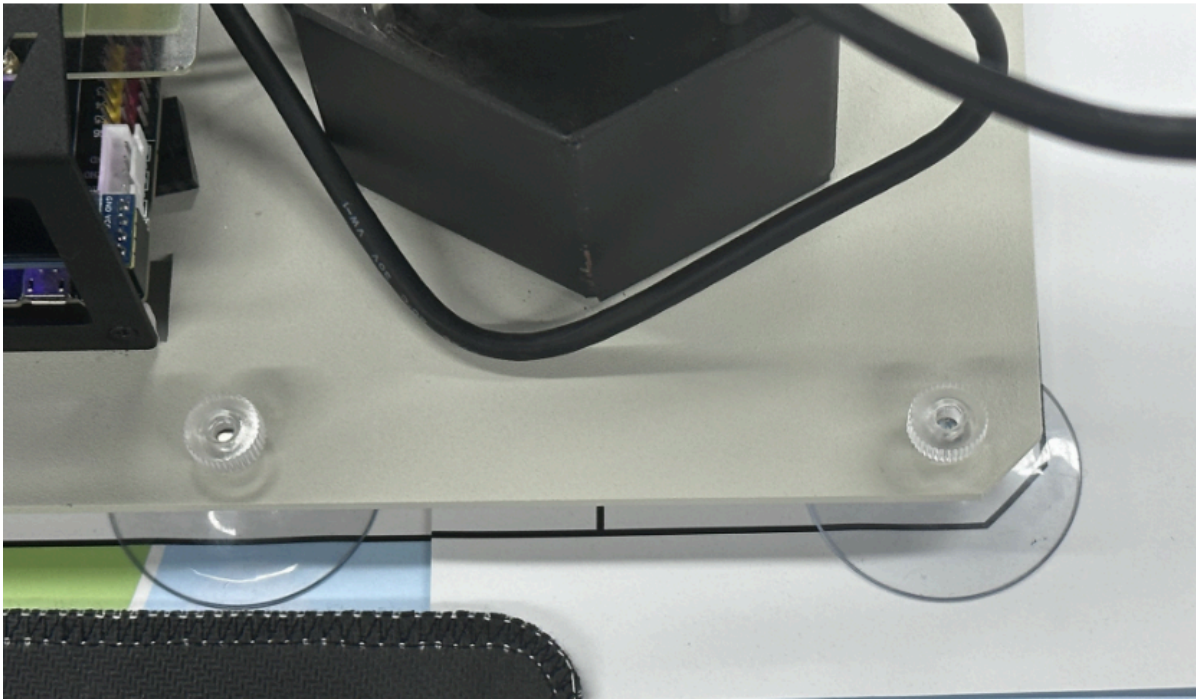


Calibrate offset

Due to the slight error of the servo on the factory-produced robot arm, the landing point of the robot arm's gripper will be biased forward/backward when the robot arm is gripping, so an offset needs to be added to compensate for the error.

1. Fix the calibration plate

Fix the calibration plate we provide on the map, as shown in the figure below. The base of the robot arm needs to be in the calibration frame

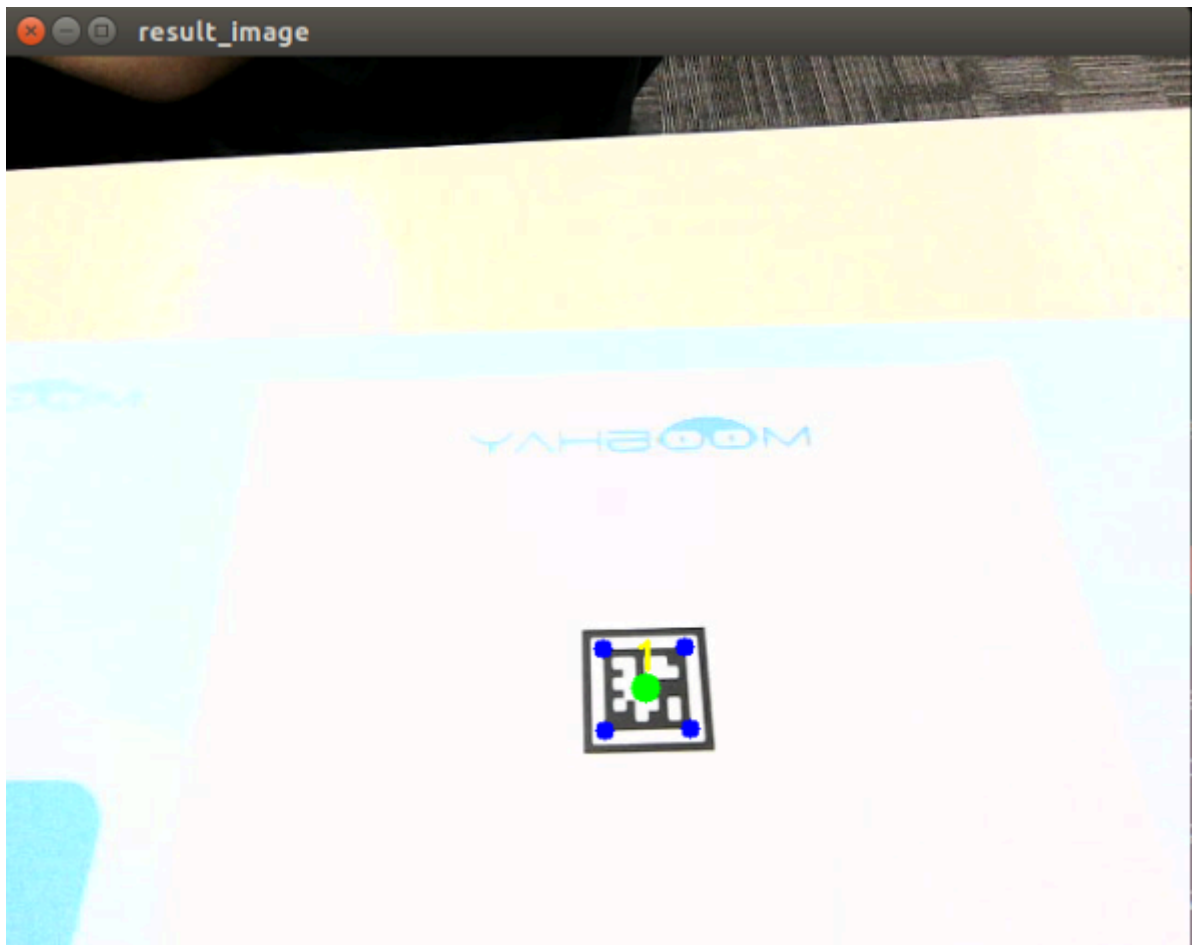


2. Run the program

Terminal input,

```
ros2 launch orbbec_camera dabai_dcw2.launch.py
ros2 run dofbot_pro_driver arm_driver
ros2 run dofbot_pro_info kinemarics_dofbot
ros2 run dofbot_pro_apriltag calibrate_offset
ros2 run dofbot_pro_driver apriltag_detect
```

As shown in the figure below, after the program is run, the machine code on the calibration board will appear in the image.



Press the space bar, the program will calculate the position of the machine code on the calibration board in the world coordinate system (xyz), and then calculate the position of the machine code on the actual calibration board in the robot base coordinate system (0, 0.181, -0.01), and save the calculation result in the offset parameter file. The offset parameter file is located in

```
/home/jetson/dofbot_pro_ws/src/dofbot_pro_driver/config/offset_value.yaml
```

The content of the offset parameter file is as follows:

```
x_offset: 0.0  
y_offset: 0.01164  
z_offset: -0.0092
```

At this point, the calibration program ends, and the subsequent program will automatically load the value in the offset parameter file.