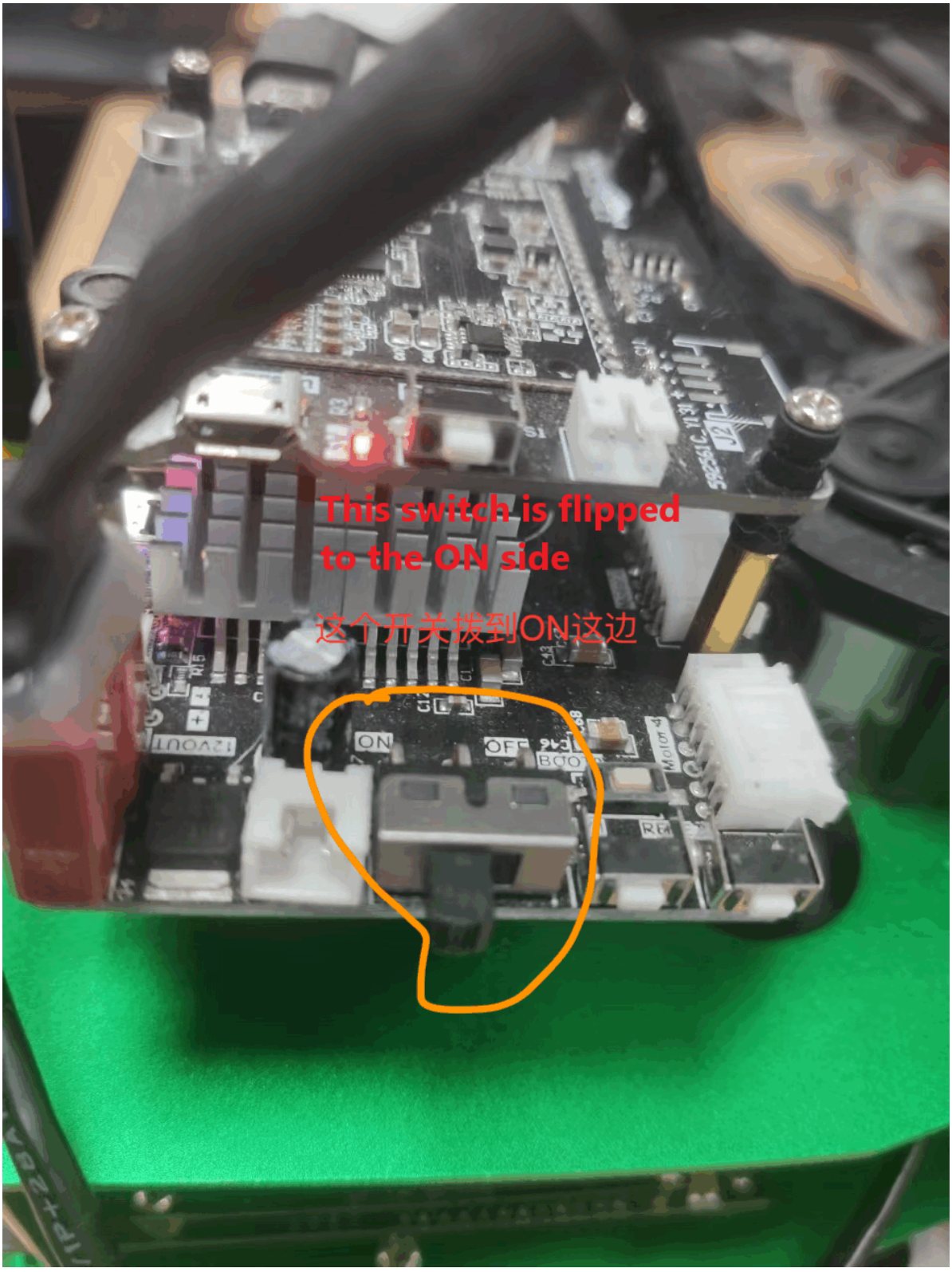
9. APP navigation

Quick access

1. Rosmaster_R2 Power Up

Power up the R2 with the switch shown below flipped to the ON direction.

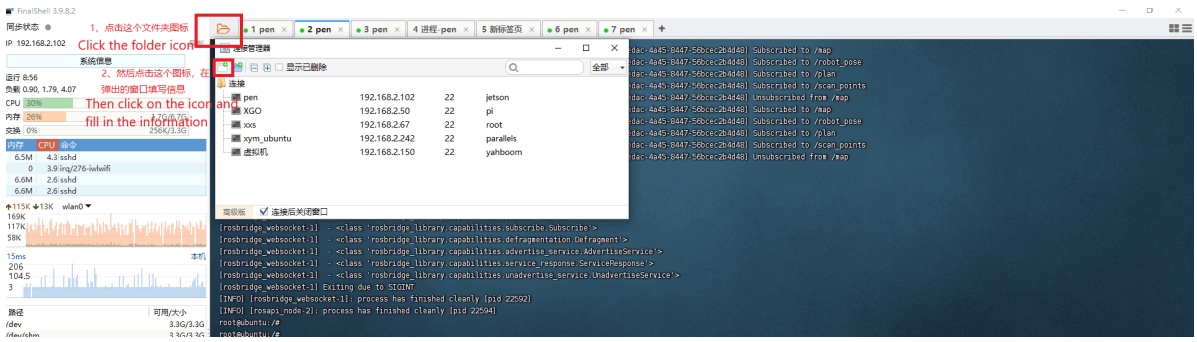


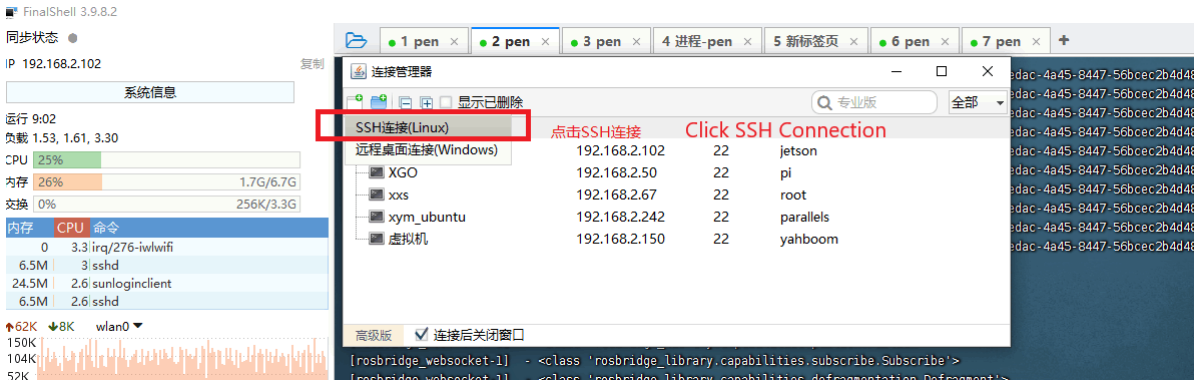
Connecting to the network can be visualized through the touchscreen display that comes with the X3, and connecting to WiFi on the LAN.

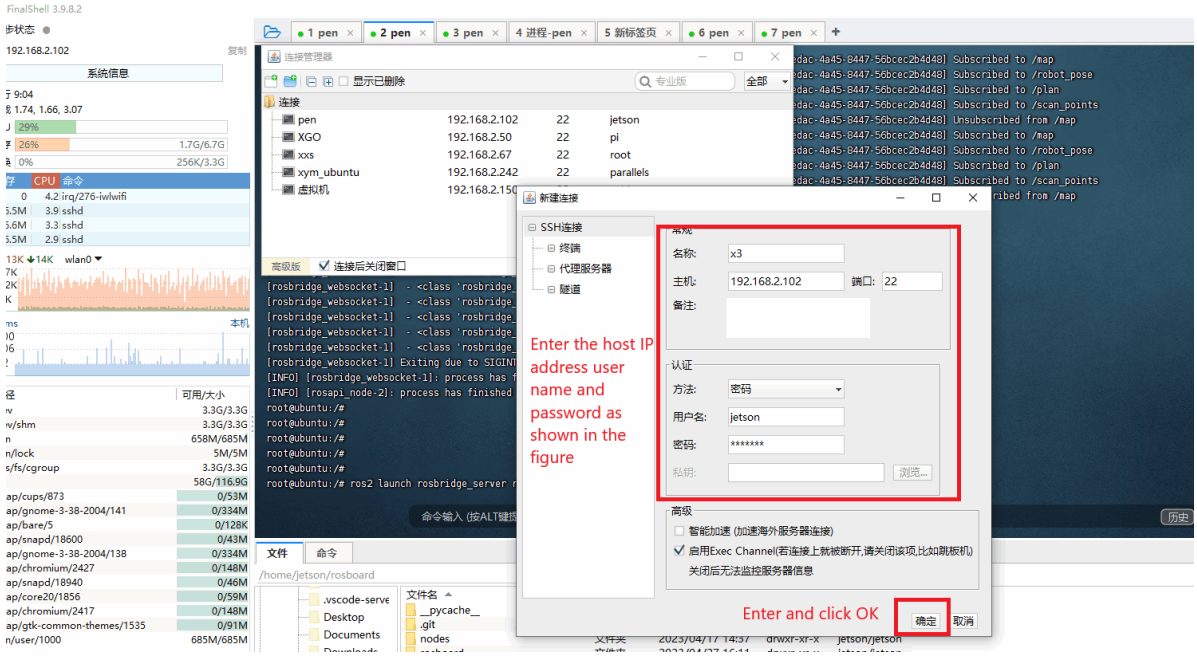
2. Open the shell and connect to Rosmaster_R2.

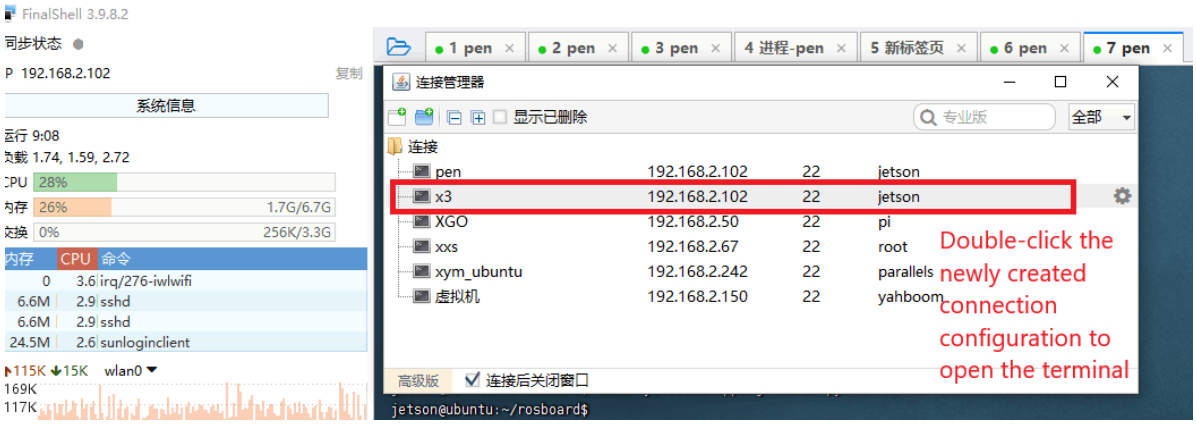
Note: At the time of writing this tutorial, we are using the IP address 192.168.2.102, username is jetson, password is yahboom, and the actual IP address is based on the actual use.

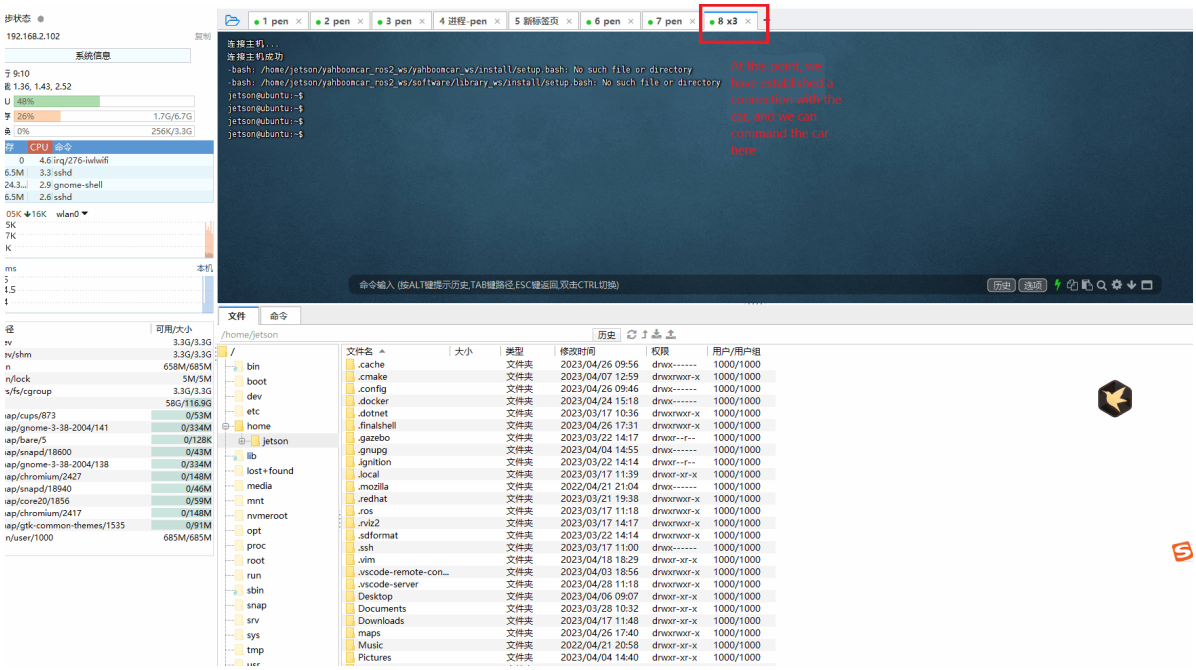
Open a shell utility, in this case FinalShell, and enter your username, password, port and connection name.











3. Starting ROSBridge and web services

Create a docker environment by entering commands in the terminal.

```
./img/run_docker.sh
```

Then enter the command:

docker ps

to view the docker environment you just created.

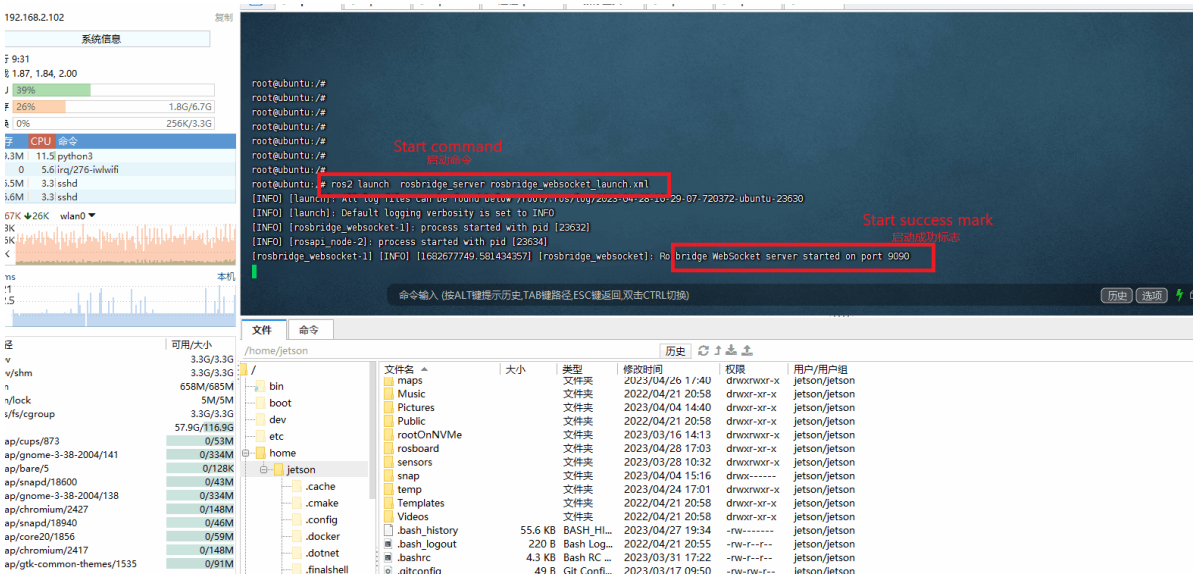
Find the docker environment you just created and find the CONTAINER ID's and enter the command in the terminal:

```
docker exec -it CONTAINER ID bash
```

Note: The CONTAINER ID is the ID of the latest docker environment you just found.

After entering docker, start rosbridge by entering the following command

```
ros2 launch  rosbridge_server rosbridge_websocket_launch.xml
```



Follow the steps above to reopen a terminal and enter the docker environment. The docker you are entering is freshly created, so you do not need to execute the command . /img/run_docker.sh command.

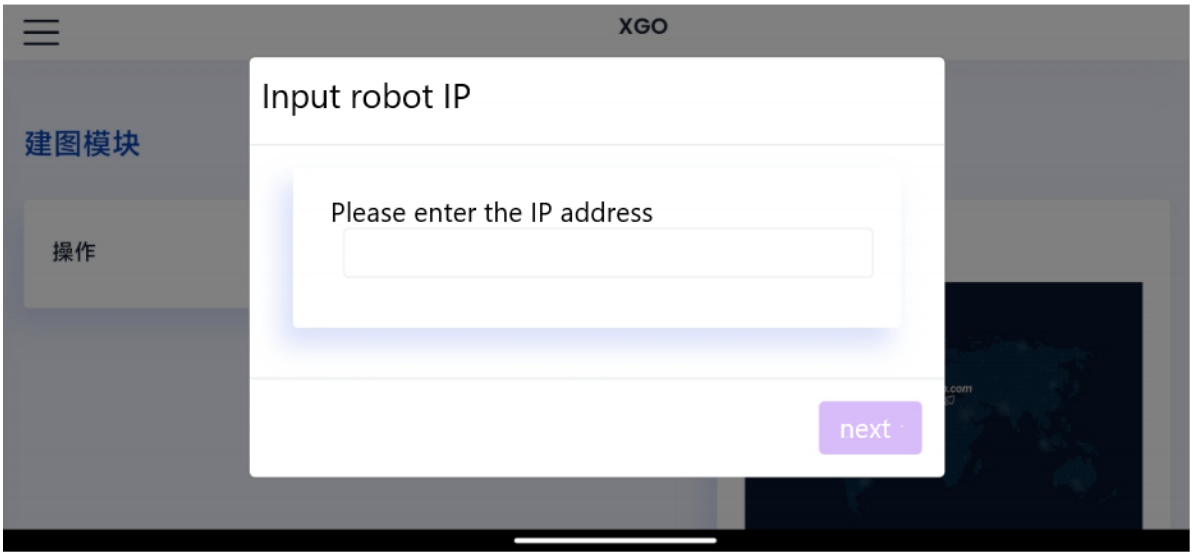
After entering the docker environment, enter the command:

```
cd /root/rosboard
```

```
./img/run
```

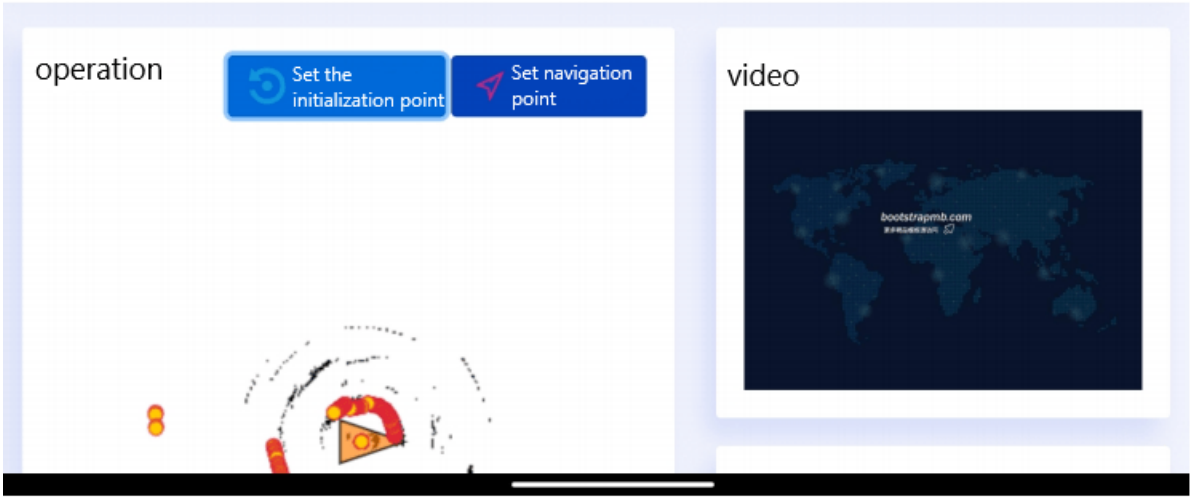
4. Open APP, start navigation mode

Install the APP on your cell phone and open the APP, the following figure shows the APP opening interface:

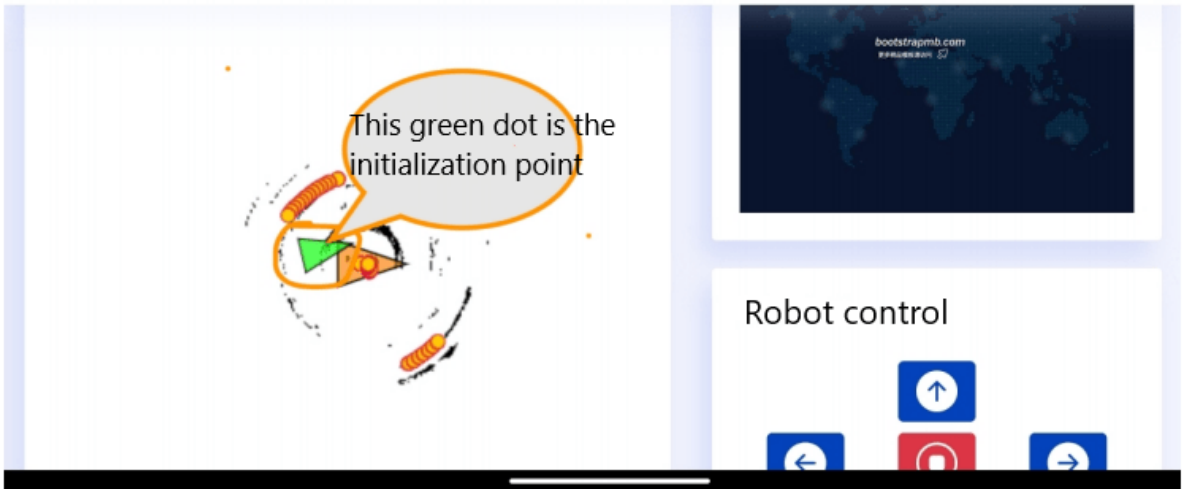


Enter the IP address in the input box, here the IP address is the IP address of the cart, such as 192.168.2.102, this address is the actual IP address of the cart, please enter it according to the actual situation in practice. Click on the Next button after you have finished entering the IP address.

After the startup is complete you can see the current position of the cart, and the laser point cloud. Set the initialization point before navigation. Click the Set Initialization Points button.



Then click on a point on the map and rotate it in the desired direction to set it as the initialization point.



After the initial point is set, the robot position and point cloud will move to the position of the point that was set. Then click the Set Navigation Point button. Then wait for the interface to finish loading, set a target point in the map interface, and wait for the cart to automatically plan a route and run to the target point.