

User Guide

Contents

- [Contents](#)
- [Choregraph Simulator Guide](#)
- [Nao Robot Startup Guide](#)
- [Program Launch Guide](#)

Choregraph Simulator Guide

To run the Choregraphe simulator, please click the icon of the software or run the following command line in the terminal.

```
/opt/'Softbank Robotics'/'Choregraphe Suite 2.8'/bin/choregraphe_launcher
```

After starting the software for the first time, remember to adjust the settings of the robot version

Click **Edit** then click **Preferences**, a new window will be opened.

Go to the **Virtual Robot** page, change the **Robot model** to **NAO H25(V6)**, then click **OK** in the bottom right corner. The program will ask to restart the robot, click **Yes**.



The software will automatically generate a virtual robot, click the connection button to check the connection list.

After waiting for a while, a virtual robot will appear in the list.

★	Status	Name	Port	Host
★	A blue dotted outline of a NAO robot head with a small body and arms, indicating it's a virtual robot.	boxjelly-VirtualBox	9559	boxjelly-virtua



Select the virtual robot, after the robot is connected, make sure to click the play button .

The default IP address and port of the virtual robot is 127.0.0.1 and 9559.

Now the robot is waiting for the connection from the program.

Nao Robot Startup Guide

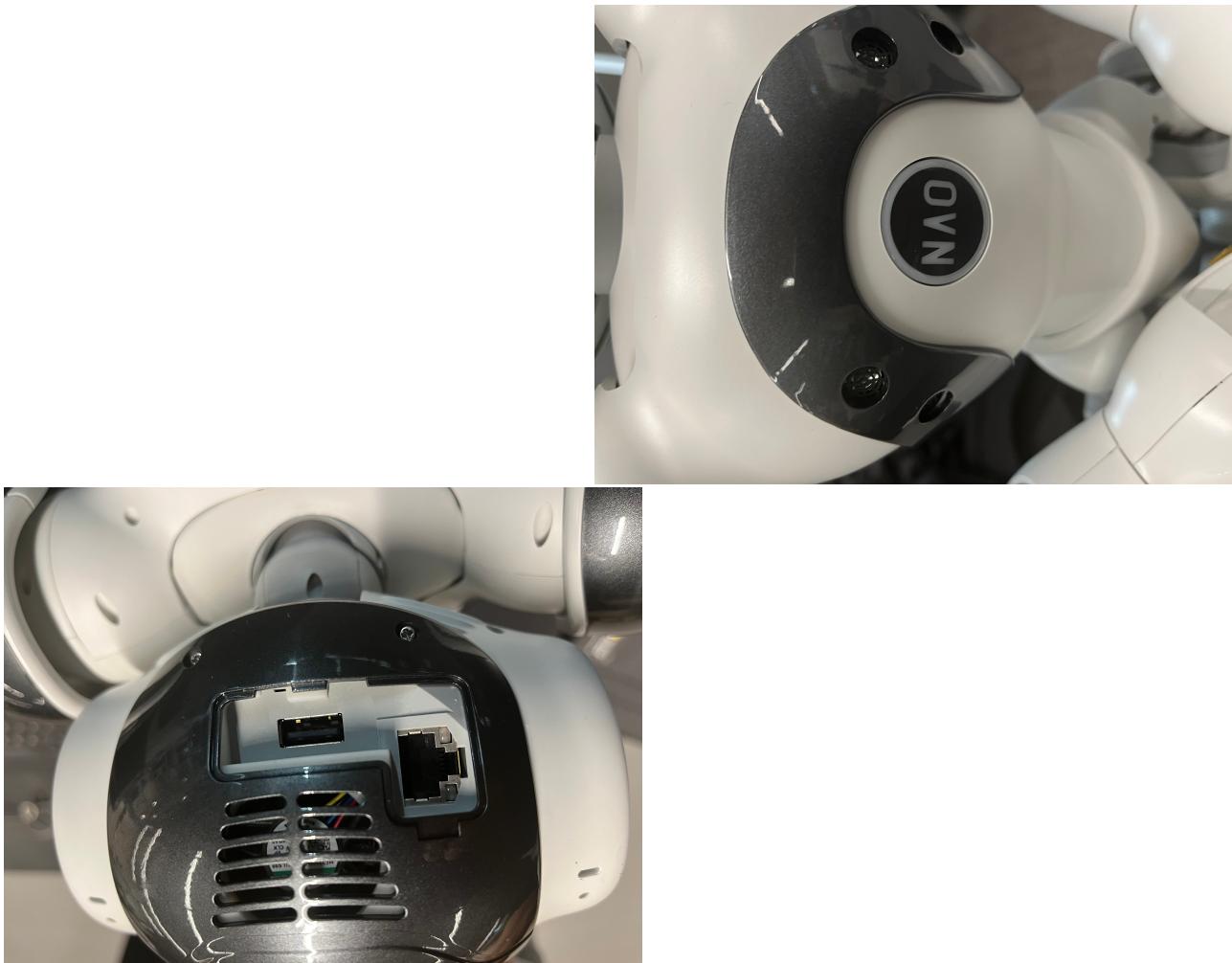
The Nao robot can connect to the network through a wired connection to the interface behind their head, or wirelessly to wifi.

It is recommended to use a wired connection and check the robot's settings when starting the robot for the first time.

To start the robot, press the button on its chest. After the robot starts, pressing that button again will tell you its IP address through voice.

When both the computer and robot are connected to the same network, entering the robot's IP address in the browser will enter the robot's settings page, with the default login username and password being 'nao'.

Here, the robot's network connection can be adjusted to connect to a network with internet access.



Startup button and interface

It should be noted that every startup or switch of network connection may cause a change in the robot's IP address.

Please remember to press the button again after performing the above operations to confirm whether the IP address has changed.

Program Launch Guide

Step 1

Make sure `roscore` is running, open a terminal and run the following command line:

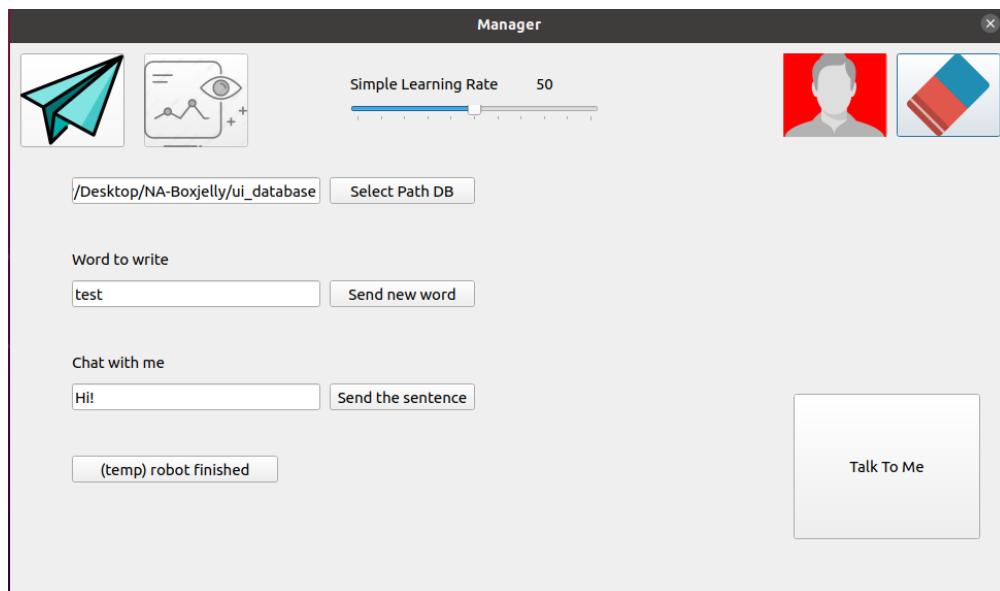
```
roscore
```

Step 2

Open the manager UI:

```
cd <path-to-NA-Boxjelly>
python3 src/choose_adaptive_words/nodes/manager_ui.py
```

The manager UI window will open.



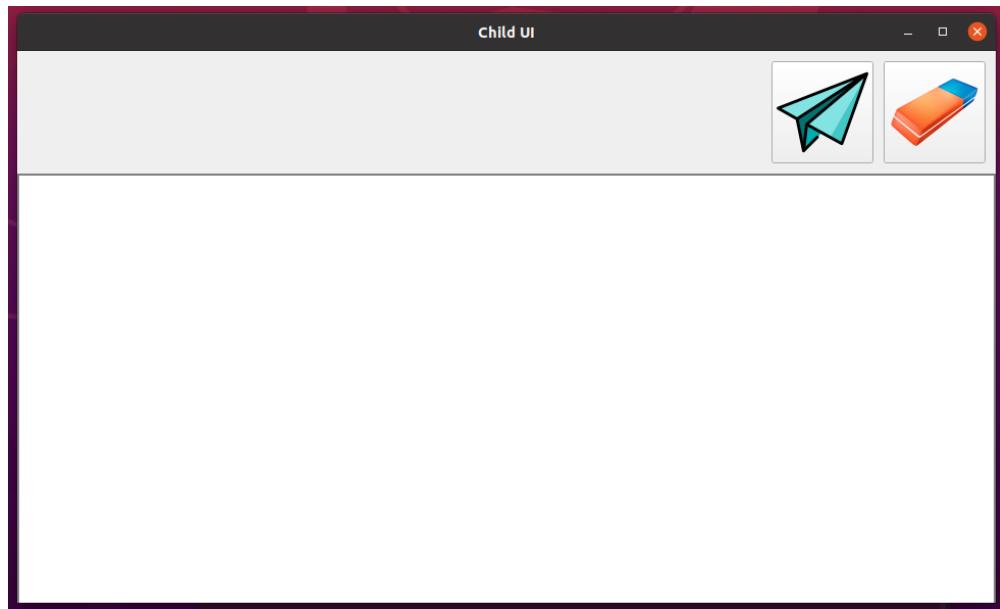
IMPORTANT: replace <path-to-NA-Boxjelly> with the path to your /NA-Boxjelly directory.

Step 3

Open a second terminal to run the child UI:

```
cd <path-to-NA-Boxjelly>
python3 src/choose_adaptive_words/nodes/child_ui.py
```

The child UI window will open.



Step 4

Open a third terminal and run the temporary UI backend:

```
cd <path-to-NA-Boxjelly>
python3 src/choose_adaptive_words/nodes/temp_backend.py
# manager UI and child UI are connected to the temporary UI backend
```

Step 5

Open a new terminal and run the CoWriter program:

```
cd <path-to-NA-Boxjelly>
roslaunch letter_learning_interaction nao_learning.launch letter_model_dataset_directory:=<path-to-NA-Boxjelly>
/share/letter_model_datasets/<model datasets> #such as alexis_set_for_children
```

When the program is successfully connected to the robot, there will be voice from the real robot or a dialog box from the simulated robot, saying "hi, I'm nao, please give me a word to practice.".

Now the program and robot is ready for the operations.

Operation 1: Writing and Learning from the user

1. Click the **Send new word** button in the manager UI, the robot will generate writing trajectory for the specified word or letter, then write it with its right hand. The trajectory will also be shown in the child UI.
2. Click the **Robot finished** button, then the robot will be ready for learning from the user's writing, the user should write in the child UI and click the paper plane logo in the upper right corner to send the new trajectory, or click the eraser logo to clear the window and rewrite. The robot will learn from the human writing and will change the trajectory of the same word or letter next time.

<http://youtube.com/watch?v=C47BLQqLA1M>

Operation 2: Talking with the user

There are two ways to communicate with the robot:

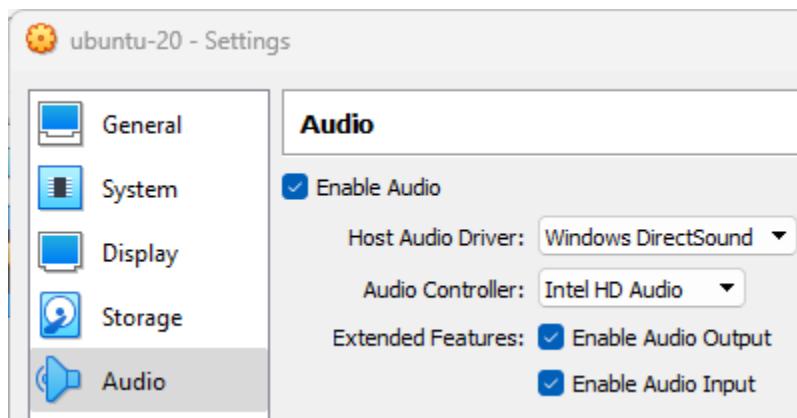
1. By typing a sentence into the **Chat with me** box.
2. By clicking the **Talk To Me** button and then speaking into the microphone of the computer.

The robot will respond after processing voice or text input.

<http://youtube.com/watch?v=UgzBqFEUJh8>

It should be noted that the computer needs to have internet access to use ChatGPT to generate answers, and ensure that the virtual machine can receive input from the microphone when speaking.

These VirtualBox audio setting worked well for our team:



Usage demo

[<https://www.youtube.com/watch?v=qhCjyhDt22A>]