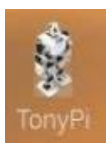
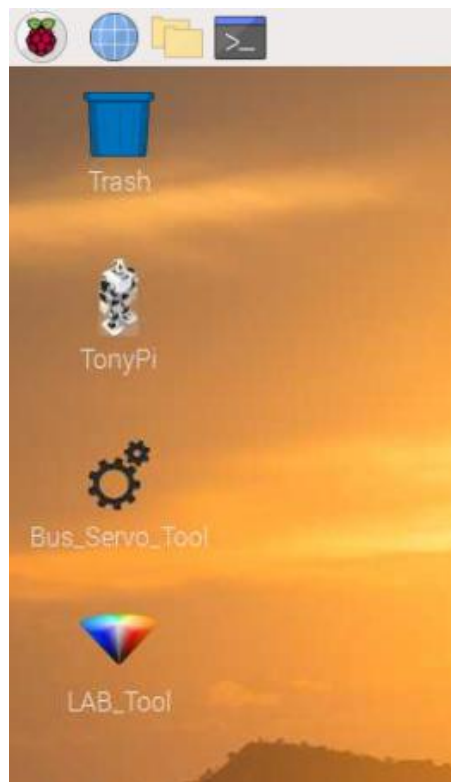


System Introduction

1. Desktop Instruction

After remote connection via VNC, the Raspberry Pi system desktop is as shown in the figure below:



TonyPi PC software which includes action programming, debugging etc. servo control, servo debugging and camera debugging.



Servo debugging tool



Color model parameter adjustment tool



LX terminal is used to input instructions to operate.



File manager is a visual file directory interface. (Recommended for beginner users who are not familiar with the command line)

2. Programming Instruction

The input command must be case sensitive and space, and the keyword supports "TAB" key to fill.



- 1) Click icon or press "Ctrl+Alt+T" to open LX terminal.
- 2) Enter "ls" command and then press "Enter" to list all the documents. As shown in the figure below:

```
pi@raspberrypi:~ $ ls
Bus_Servo_Tool  Downloads  MagPi  PIGPIO  TonyPi_PC_Software
create_ap       examples   mjpg-streamer  Public  Videos
Desktop         hiwonder-toolbox  Music  Templates
Documents       LAB_Tool      Pictures  TonyPi
```

Directory	Function
TonyPi	Store all the games and related program source code
TonyPi_PC_Software	TonyPi PC software source code (based on Qt)
hiwonder-toolbox	Wi-Fi management tool

Note: For AI vision games, you only need to check the folder "TonyPi".

3) Enter “cd TonyPi” to open all the games and program source code. In the TonyPi, enter “ls” command in the following three main directories. As shown below:

```
pi@raspberrypi:~ $ cd TonyPi
pi@raspberrypi:~/TonyPi $ ls
ActionGroupDict.py  Camera.py  LABConfig.py  RPCServer.py
ActionGroups        Functions  MjpgServer.py TonyPi.py
apriltag.py         HiwonderSDK  models
CameraCalibration   Joystick.py  __pycache__
```

Directory	Function
Functions	The directory where the AI vision game program is located.
TonyPi.py	Main program for running the games (auto-start has been set)
HiwonderSDK	Underlying file path (for hardware control)

4) Enter the "cd Functions" and "ls" instructions in turn again. Let's take a look at the corresponding games of the program:

Program Name	Game
RemoteControl.py	Model control
KickBall.py	Auto shooting
ColorDetect.py	Color recognition
VisualPatrol.py	Line follow
ColorTrack.py	Color recognition

FaceDetect.py	Facial recognition
ApriltagDetect.py	Tag recognition

3. Game in Advanced Tutorial

Program	Game
Transport.py	Intelligent transport
Follow.py	Motion tracking