

Lesson 13 Controlling the Robot with a Mobile App

In order to control the robot more conveniently, we have developed an APP for users that can be used on mobile phones with Android operating system: Adept Remote Control

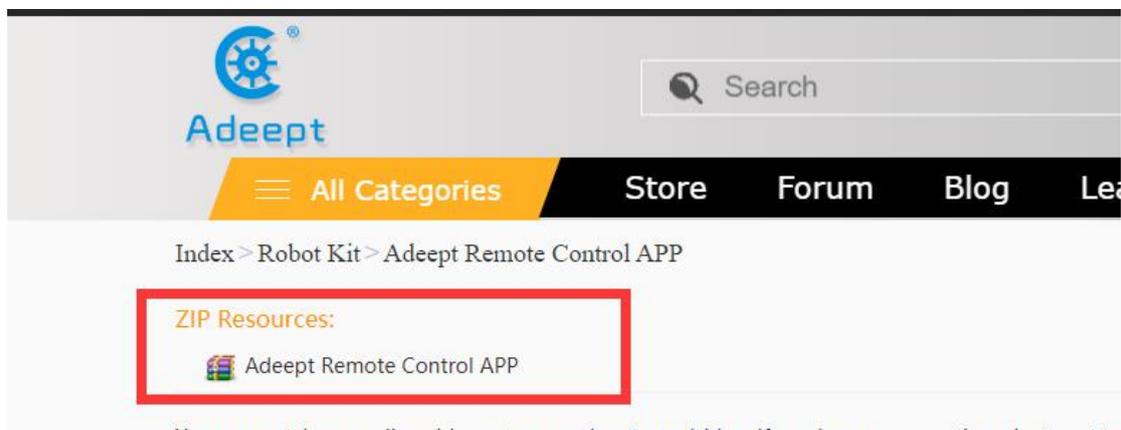
13.1 Introduction of APP

Adept officially released the latest general application. Based on WiFi communication, it can control Adept related products, such as Arduino and Raspberry Pi robots and cars with WiFi communication functions. The command sending interface of the app is open to expand, allows you to control your own DIY programmable WiFi communication robot or car products.

13.2 Downloading and installing APP

(1) The first download method, you can directly link to our official website with this webpage to download: <https://www.adept.com/learn/detail-41.html>

Click the APP to download. After the download is complete, unzip the APK installation file, and then send it to your Android phone for installation.



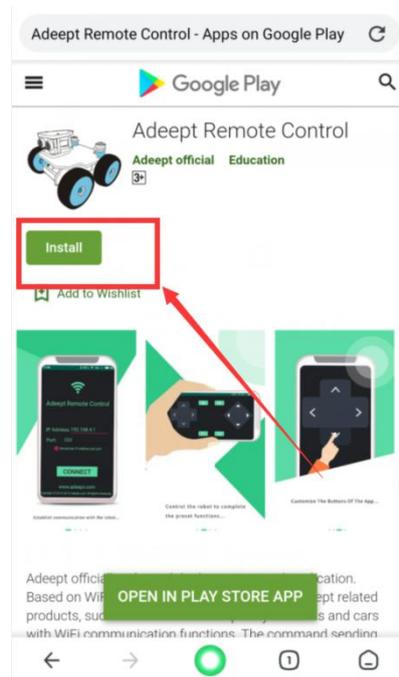
(2) The second download method is to download from the Google App Store,

www.Adept.com

enter the download address in the browser:

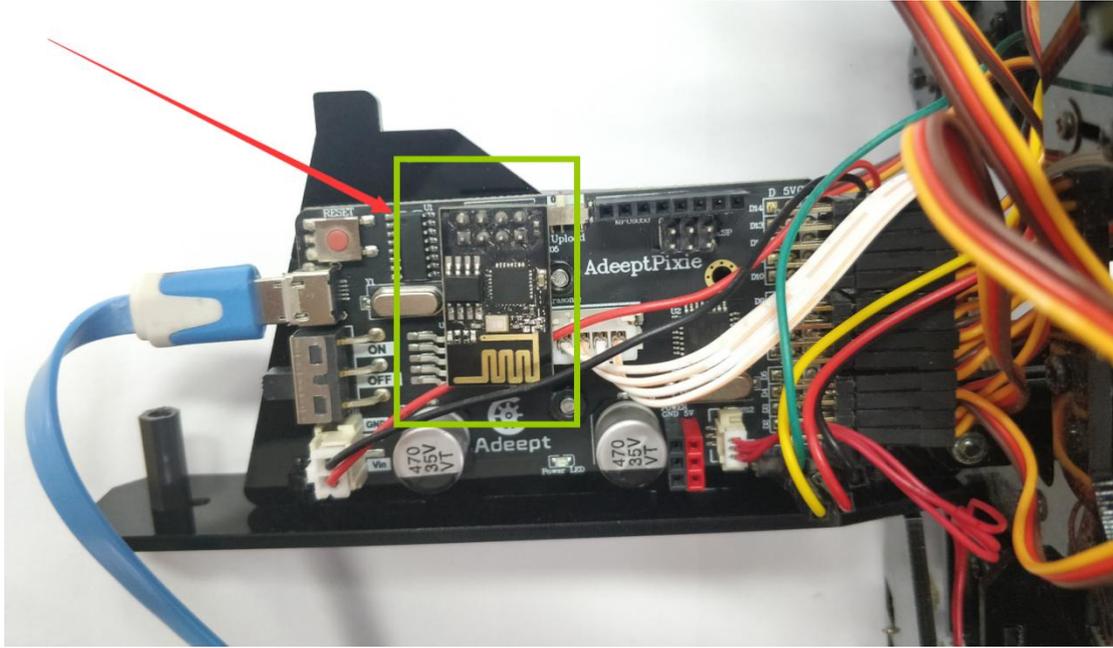
<https://play.google.com/store/apps/details?id=com.addept.lenovo001.smartcar>

Click to Install.

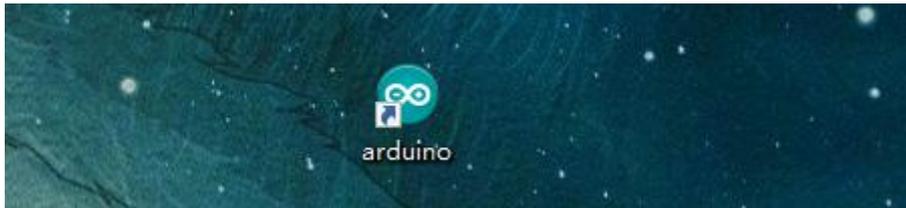


13.3 Setting up WIFI connection

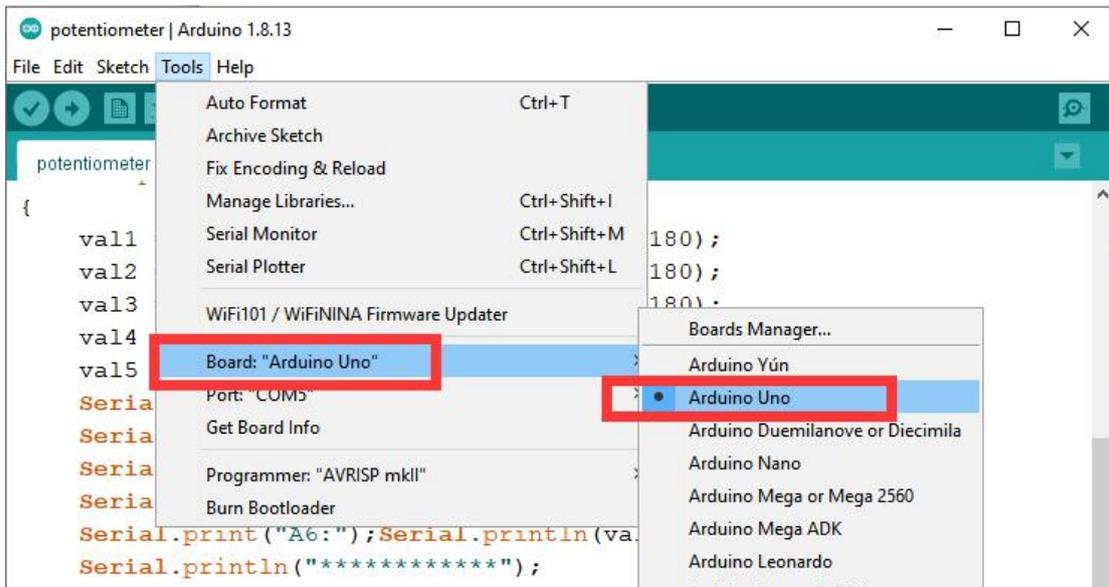
1. You need to connect the ESP8266 module to the wifi interface on the AdeptPixie driver board, as shown in the figure below, and you need to power the robot.



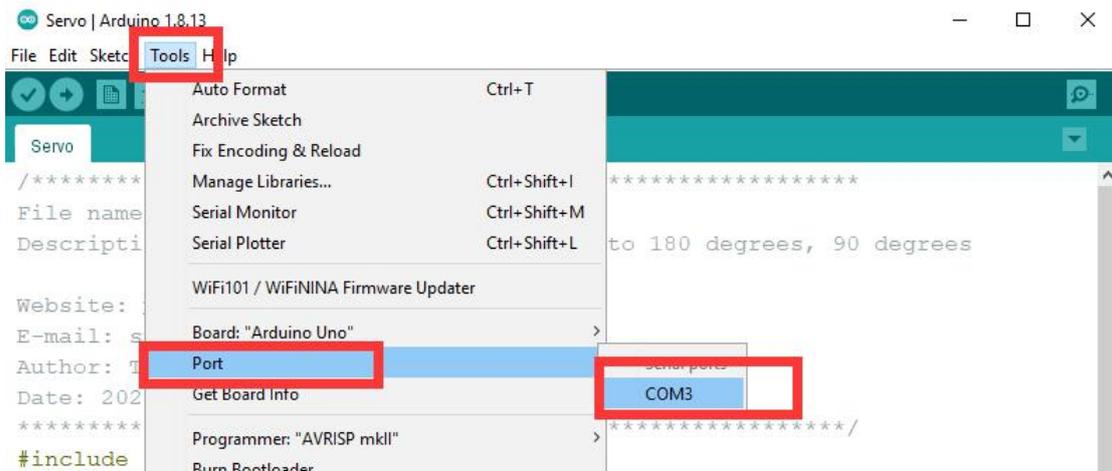
2. First, open the Arduino IDE software, as shown below:



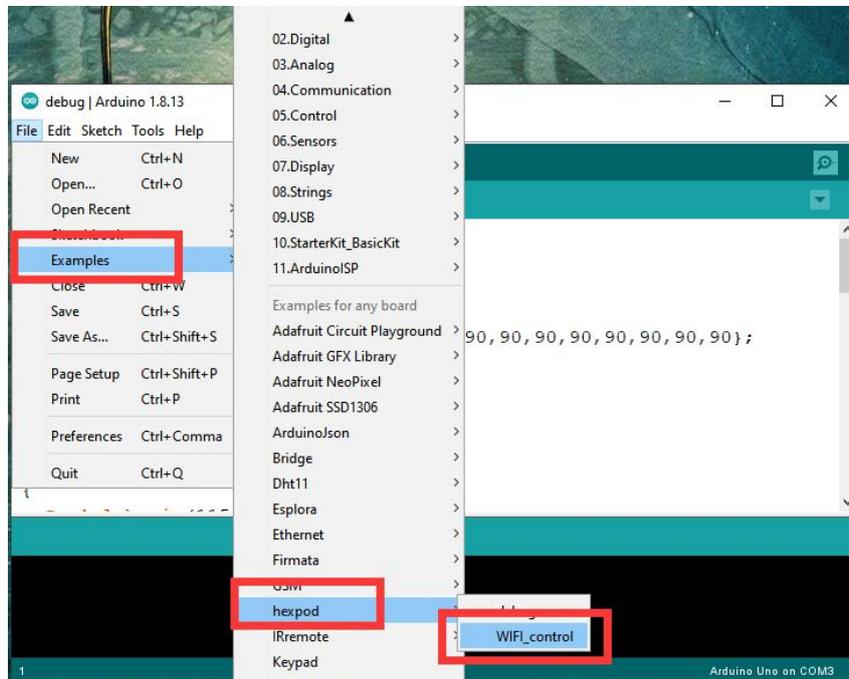
3. In the Tools toolbar, find Board and select Arduino Uno, as shown below:



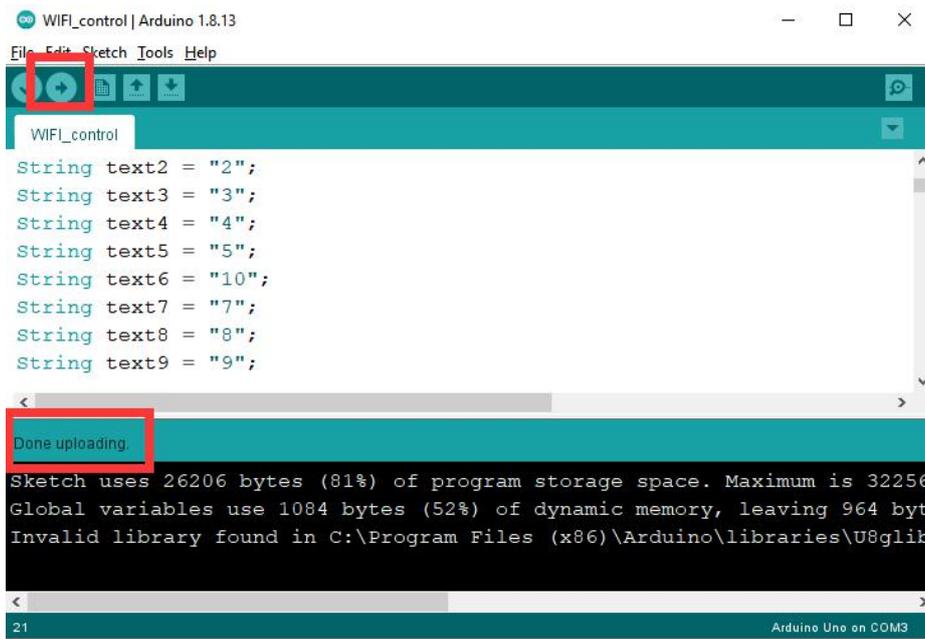
4. In the Tools toolbar, find Port and select the port number of the AdeptPixie driver board, as shown below:



5. Click Examples->hexpod->WIFI_control under the File drop-down menu:

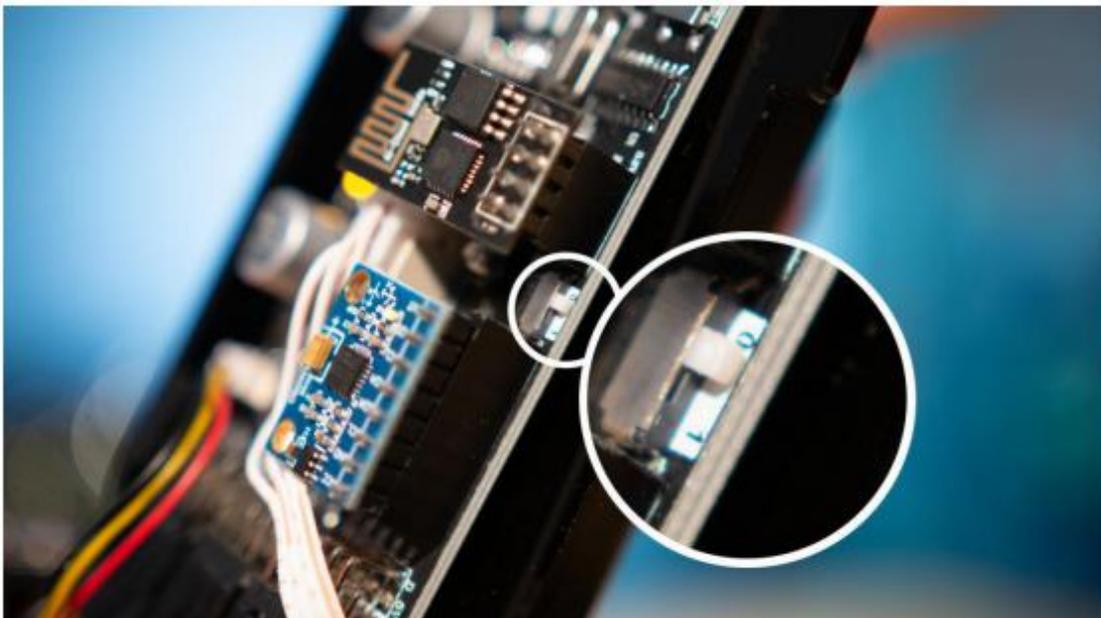


6. Then a WIFI_control program will be opened, your AdeptPixie driver board has already installed the ESP8266 module, then you need to turn the "Upload 0 RUN 1" switch on the AdeptPixie driver board to the 0 position, then you click  to upload the code program to the driver board. After the upload is successful, a text prompt appears in the lower left corner: Done uploading.

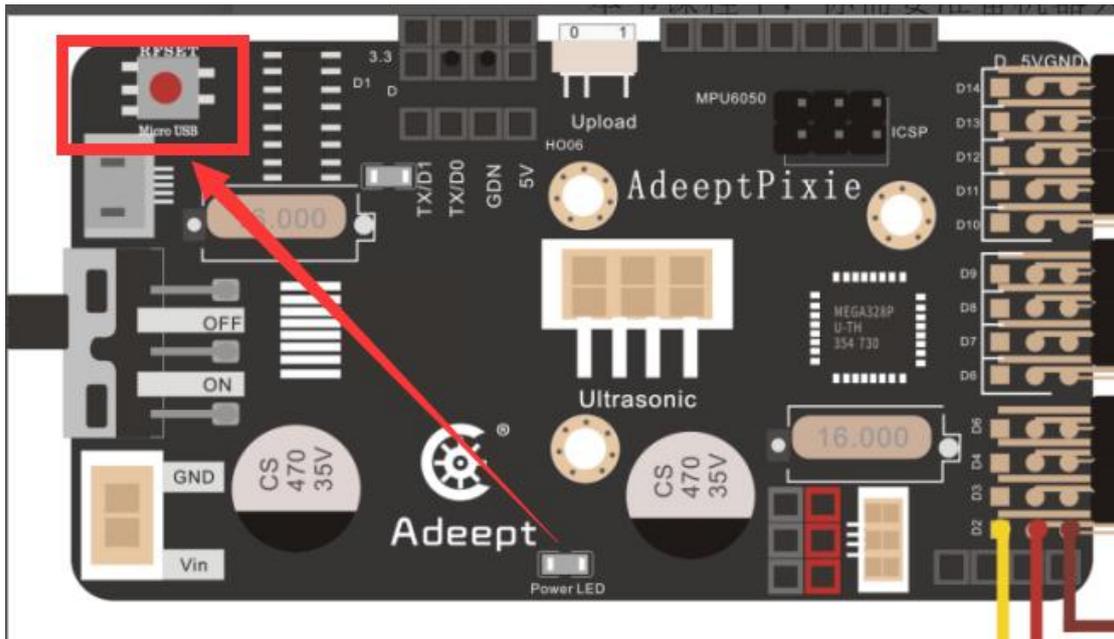


【Pay attention】

(1) Your AdeptPixie driver board has already installed the ESP8266 module, then you need to toggle the "Upload 0 RUN 1" switch on the AdeptPixie driver board to the 0 position, as shown in the figure below. When you upload the program successfully, you must toggle the switch to the 1 position.



Press the reset button again. At this time, the USB cable does not need to be connected to the robot.



(2) If the following error message appears when you upload the "WIFI_control" program, the reason for this error message is that you did not toggle the "Upload 0 RUN 1" switch on the AdeptPixie driver board before uploading the "WIFI_control" program to the 0 position, so you need to check again whether the "Upload 0 RUN 1" switch is in the 0 position.

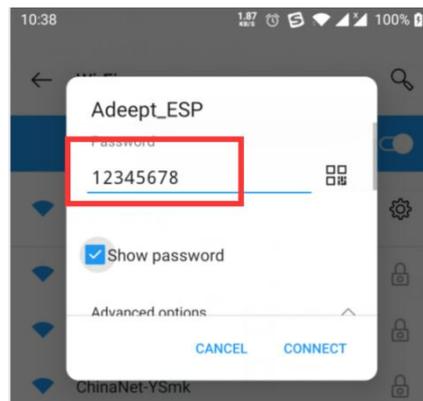
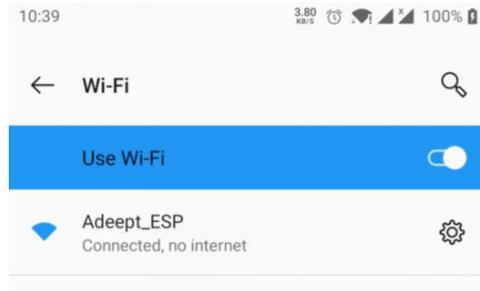
```
An error occurred while uploading the sketch

Sketch uses 26206 bytes (81%) of program storage space. Maximum is 32256 bytes.
Global variables use 1084 bytes (52%) of dynamic memory, leaving 964 bytes for local variables
An error occurred while uploading the sketch
avrdude: stk500_getsync() attempt 1 of 10: not in sync: resp=0x41
avrdude: stk500_getsync() attempt 2 of 10: not in sync: resp=0x54
avrdude: stk500_getsync() attempt 3 of 10: not in sync: resp=0x2b
avrdude: stk500_getsync() attempt 4 of 10: not in sync: resp=0x43
avrdude: stk500_getsync() attempt 5 of 10: not in sync: resp=0x57
avrdude: stk500_getsync() attempt 6 of 10: not in sync: resp=0x4d
avrdude: stk500_getsync() attempt 7 of 10: not in sync: resp=0x4f
avrdude: stk500_getsync() attempt 8 of 10: not in sync: resp=0x44
avrdude: stk500_getsync() attempt 9 of 10: not in sync: resp=0x45
avrdude: stk500_getsync() attempt 10 of 10: not in sync: resp=0x3d
Invalid library found in C:\Program Files (x86)\Arduino\libraries\U8glib: no headers files (.h
Invalid library found in C:\Program Files (x86)\Arduino\libraries\U8glib: no headers files (.h
```

7. After the upload is successful, the ESP8266 module will generate a Wifi hotspot by default. You can check the name with "ESP" in the WIFI list. This hotspot is generated by ESP8266. In the next section, we will teach you how to connect to this hotspot via GUI.

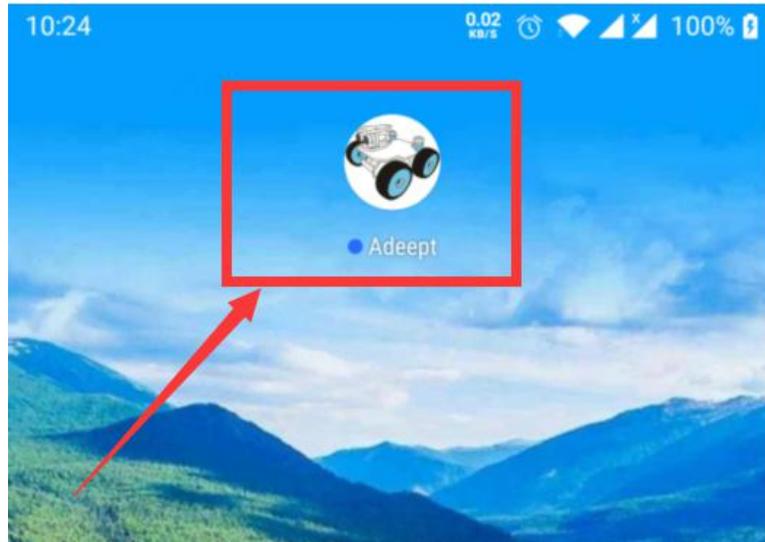


8. Now you need to connect your Android phone to the WIFI hotspot generated by the ESP8266 module. The initial password of this hotspot is 12345678.

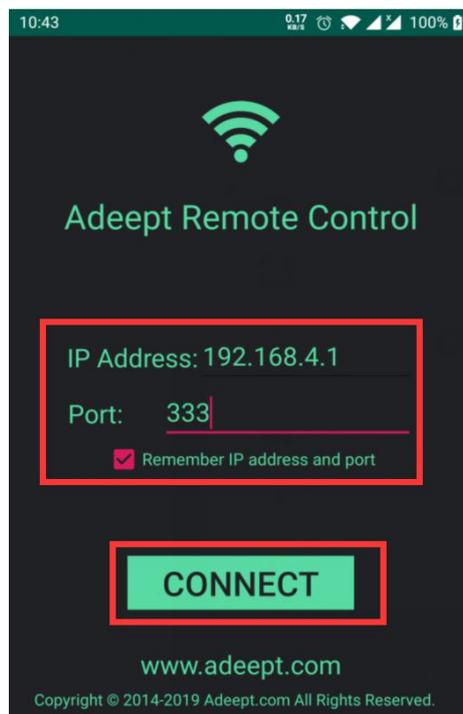


13.4 Using APP to control the robot

1. After successfully connecting to the WIFI hotspot sent by the robot, you need to click to open this APP on your Android phone:



2. After opening the APP, the interface as shown in the figure below appears. Enter the default IP address of the ESP8266 module in the "IP Address" input field: 192.168.4.1, and the "Port" input: 333, and then click "CONNECT".



3. After the connection is successful, enter the control interface. Only the two red areas in the figure below can control the movement of the robot. The direction button on the left controls the robot to move forward and backward, turn left and turn right; the A button controls the robot to enter the self-stabilization mode, and the B button is to control the robot to enter the attack mode.



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