

Wi-fi talking robot:

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Abstract

The Wi-Fi talking robot is a new technological advancement in the field of robotics. This robotic system has the capability to connect to the internet through a Wi-Fi network and interact with users using speech recognition and synthesis technology. This paper aims to provide an overview of the Wi-Fi talking robot, its components, and its capabilities. It also discusses the potential applications and benefits of this technology.

Keyword : wi-fi , robot

Introduction:

The Wi-Fi talking robot is an intelligent machine that has the capability to connect to the internet through a Wi-Fi network. This construction of the robot consists of three main components: a microcontroller, a Wi-Fi module, and a speech recognition and synthesis module. The robot's design includes a microphone, a speaker, and a power source. The Wi-Fi module provides the robot with wireless access to the internet, while the speech recognition and synthesis module allow the robot to recognize and generate human-like speech.

Components of the Wi-Fi Talking Robot:

1.BT kit
2.speaker
3.Jumper wire
4.Node MCU
5.battery
6.wheel
7.Motor drive

1.BT KIT : ITs 5 Volt DC operated Bluetooth module.

- Allows you to play songs to your speakers directly from your phone, Compact and Small can be powered with usb wall power adapter.
- It support various audio connection options like USB, memory card, Bluetooth and AUX.
- Support: USB/Bluetooth/Aux/Memory Card.



2. SPEAKER: Speaker output power is determined by V_{CC} (supply voltage) and the speaker load (in ohms). 20W output results from a supply voltage of 18V and a speaker load of 8Ω . For 10W output the conditions are: 13V V_{CC} and 8Ω speaker load.



3. JUMPER WIRE: 40 pc male to male ; 40 pc female to female ; 40 pc male to female ,Each cable length about 20cm or 8-inch

- Suitable for Arduino breadboard kit project, PCB project, pc motherboard, etc
- Through the pin connection, without welding, fit for fast circuit test
- Can be separated into the assembly containing the wire quantity you required and to support non-standard odd-spaced headers, suitable for arduino breadboard kit project, pcb project, pc motherboard, etc., Through the pin connection, without welding, fit for fast circuit test
- Including: 1 x 40-pin m/ f jumper wires, 1 x 40-pin m/ m jumper wires, 1 x 40-pin f/ f jumper wires



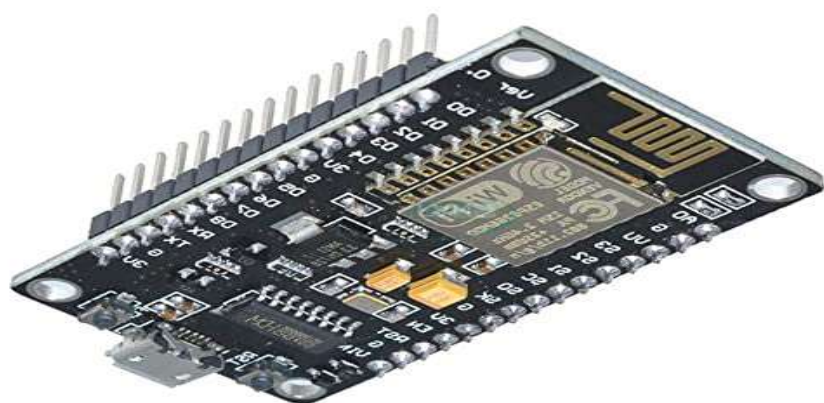
4. NODE MCU :

Node MCU is an open source firmware for which open source prototyping board designs are available. The name "Node MCU" combines "node" and "MCU" (micro-controller unit). Strictly speaking, the term "Node MCU" refers to the firmware rather than the associated development kits.

Both the firmware and prototyping board designs are open source.

The firmware uses the Lua scripting language. The firmware is based on the eLua project, and built on the Espressif Non-OS SDK for ESP8266. It uses many open source projects, such as lua-cjson and SPIFFS. Due to resource constraints, users need to select the modules relevant for their project and build a firmware tailored to their needs. Support for the 32-bit ESP32 has also been implemented.

The prototyping hardware typically used is a circuit board functioning as a dual in-line package (DIP) which integrates a USB controller with a smaller surface-mounted board containing the MCU and antenna. The choice of the DIP format allows for easy prototyping on breadboards. The design was initially based on the ESP-12 module of the ESP8266, which is a Wi-Fi SoC integrated with a Tensilica Xtensa LX106 core, widely used in IoT applications.

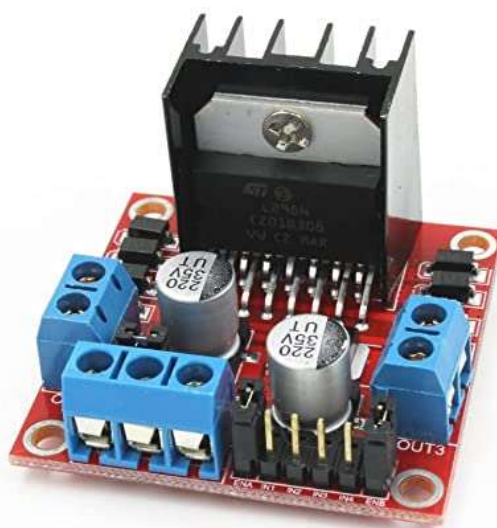


5. MOTOR drive:

Motor drive means a system that includes a motor. An adjustable speed motor drive means a system that includes a motor that has multiple operating speeds. A variable speed motor drive is a system that includes a motor and is continuously variable in speed. If the motor is generating electrical energy rather than using it – this could be called a generator drive but is often still referred to as a motor drive.

A variable frequency drive (VFD) or variable speed drive (VSD) describes the electronic portion of the system that controls the speed of the motor. More generally, the term drive, describes equipment used to control the speed of machinery. Many industrial processes such as assembly lines must operate at different speeds for different products. Where process conditions demand adjustment of flow from a pump or fan, varying the speed of the drive may save energy compared with other techniques for flow control.

Where speeds may be selected from several different pre-set ranges, usually the drive is said to be adjustable speed. If the output speed can be changed without steps over a range, the drive is usually referred to as *variable speed*.



Advantages of the Wi-Fi Talking Robot:

1. Enhanced communication

The Wi-Fi talking robot enhances communication between humans and machines. The robot's ability to recognize and generate human-like speech enables it to interact with users in a more natural and intuitive manner.

2. Increased Efficiency

The Wi-Fi talking robot has the potential to improve efficiency in various industries. For instance, it can be used in customer service to handle basic queries and provide customers with real-time assistance, thereby reducing the workload on customer support staff.

3. Automation:

The Wi-Fi talking robot can be used in various industries to automate tasks that are repetitive or require minimal human intervention. For instance, it can be used in factories to perform quality control checks and detect defects in products.

Cost analysis :

BT KIT	350
SPEAKER	150
JUMPER WIRE	300
NODE MCU	600
4-BATTERY	900
SHEET	500

4-WHEEL	799
MOTOR CONTOLLER	350
ACCESSORIES	1100
<u>TOTAL</u>	<u>5049</u>

Conclusion:

The Wi-Fi talking robot is a promising technology that has the potential to revolutionize the way humans and machines interact. It is a significant advancement in robotics, artificial intelligence, and natural language processing. This technology has numerous potential applications in various industries, including customer service, manufacturing, and healthcare. However, there are still some challenges that need to be addressed, such as ensuring data privacy and security. As this technology continues to evolve, it will likely become more prevalent in our daily lives.

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