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VIDEO SURVILANCE ROBOT USING DTMF AND WI-FI

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Abstract
In this article, we will talk about how to control a robot car using a WiFi module and a mobile phone. A ne w version of the car that works wirelessly has been prepared for espionage purposes. The robot is a portable spy robot with a wireless communication system. The spy robot has a camera, a motor, a battery and two m oving wheels. The AIThinker ESP32CAM module features an ESP32S processor, OV2640 camera and mic roSD card slot. Images captured by the camera can be stored in the MicroSD card slot. In this example, the HTTP protocol will be used to receive the video stream from the OV2640 camera via a web browser. The website will also feature buttons to move the car left, right, forward and backward. Besides the ESP32 cam era module, we also used two DC motors with robot chassis and the L293D motor driver module to create t his robot car. The signal from the user's smartphone is used to move the car inside the car, and the video is broadcast from the camera mounted on the robot. The user's smartphone receives realtime data streams over the Wi-Fi wireless infrastructure.

Keywords: camera (ESP32-CAM), smartphone, wireless camera (OV2640 camera), motor driver

Me. Introduction

With the rapid development of information technology, video surveillance system has become a part of dail y life for surveillance and security purposes. Closedcircuit television (CCTV), commonly known as video s urveillance, is an example of how a camera sends video signals to a limited number of viewers. When CCT V was first introduced, its low cost and high installation cost limited its use. Another example is the dashbo ard camera. In the event of a car accident or crime, the camera can provide video evidence. CCTV is genera lly installed for surveillance purposes in areas that require surveillance, such as banks and hospitals, or in ar eas that require security. Therefore, its scope is limited. On the other hand, since the vehicle driving recorde r is installed in the vehicle, recording can be made while the vehicle is running. In order to track the vehicle effectively, two types of equipment need to be considered. When it comes to CCTV, it is very useful for m onitoring vehicle movement in the area due to its stable operation and excellent performance.With the com bination of these two abilities, our body can be used to effectively manage routine maintenance tasks that ar e often timeconsuming and challenging. For example, one of the usual steps for police to determine the dyn amics of a stolen car is to start with nearby CCTV and dashcams and gradually expand over a wider area. It takes a lot of energy and time to search through all relevant CCTV footage and dash cams. From the perspe ctive of our system, we can easily create a query that will determine the detailed information of the stolen v ehicle based on the vehicle number, time and place where the crime was committed. Moreover, our system is also useful for other popular applications such as regional traffic analysis, driving visibility detection, stat us of entry and exit points when available, and innovation plan. > To turn the robot into a car tracking robot , we recommend using the ESP32CAM module to provide a camera to the robot. In addition to the ESP32 c amera module, we will also build a robot car with two DC motors, a robot chassis and an L293D motor driv er module.

II. LITERATURE SURVEY

V SHANKAR SMART WAR ROBOT 2015: It is defined as the creation of a remotely operated robotic ve hicle using radio frequency technology and wireless camera for target observation. Robots and cameras can

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transmit realtime images with night vision over a wireless network. This type of robots can be used for cri mes in war zones. In this technology, the robot can work at a distance of only ten meters. Bluetooth Control led Robots: As speed increases, the aim is to increase the number of robots in new distribution systems. The camera connection is often lost while using this tool.Jovita Serrao and Awab Fakih - Mobile Driving: This is a concept where people can drive the car remotely or wirelessly using an Android app without sitting in t he car. This project includes a car battery and a Bluetoothconnected controller. System completeThere is su ch a controller with Bluetooth communication integration that will connect to the car's engine and other thin gs. When the Android application is connected to the system via Bluetooth, the vehicle can be controlled wi th wireless commands from the application. The operating range of Bluetooth is approximately 10 meters o r 33 feet.

Dr. S. Bhargavi and S. Manjunath Electronics and Communications: The aim of this study is to reduce the n umber of victims of September 11, 2001. Fighting robots have been created to solve the evil of terrorism. T he robot is radiocontrolled, selfpowered, and equipped with all the controls found in a typical car. It is equi pped with a wireless camera to monitor competitors remotely when necessary. It has the ability to enter ene my territory invisibly and send us all the information through its small camera. Such spies may be deployed primarily in luxury hotels, shopping malls, jewelry showrooms, and other locations where intruders or crim inals may pose a threat.

Hebah H.O. Nasereddin and Amjad Abdullah Abdelkarim, who used Bluetooth technology to control robot s using smartphones. In this experiment, the robot is controlled using Bluetooth, which has two modes: the first called direct driving mode, where the robot moves in any direction according to the user's direction req uest, and the first DDM mode. The first mode is MBM, which is called MBM. Map-
based mode where MBA allows the user to plot start points, end points, and obstacles to calculate the shorte st path. So the user can choose or use one of the two modes to control the robot using wireless communicati on.

III. Block Diagram Approach It is important for a robot to have a structure or body to which all control circ uits and actuators will be connected. The main purpose of our design is to move the device according to the buttons. As a result, we created a simple robot that moves forward, backward, left, right with the touch of a button

Materials:

âœ ESP32-CAM
âœ FTDI Programmer
DC Motor (2)
Motor Driver (L293D)
Battery

As the ESP32-
CAM does not have a USB port, the FTDI Card needs to download the program code. VCC and GND pins of ESP32 are connected to VCC and GND pins of FTDI board. The Tx and Rx of the ESP32 are connected to the Rx and Tx of the FTDI card. Two DC motors are connected to the ESP32 from the L293D module. I O4, IO2, IO14 and IO15 pins of ESP32 are connected to module pins.

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Android Application

The Monitor Robot ESP32-CAM module features an ESP32-
S processor, an OV2640 camera and a microSD card slot. Images captured by the camera can be stored in t he MicroSD card slot. In this example, the HTTP protocol will be used to receive the video stream from the OV2640 camera via a web browser. The web page will also have buttons to move the car in left, right, for ward and backward directions as shown in the image above.

After uploading the code, disconnect GPIO 0 from GND.

Use 115200 baud rate to turn on the serial monitor. Press the RST button on the RST button built into the E SP32-CAM.

The IP address of the ESP32-CAM should be displayed in the Queue Monitor.

Remove FTDI Programmer from ESP32-CAM. Reconnect the ESP32-
CAM to the gimbal, turn on the power and press the RST button on the onboard ESP32-CAM.

You need to open your router settings. Here you will find some fields, including those related to forwarding or forwarding ports.

The important points to remember here are "Port Range" and "Device" or "IP Address".

You must write 80-81 in the "Port Range" section.

For "Device" you must select the ESP32-
CAM device. On some routers, you need to enter the IP address of the ESP32-
CAM instead of the device name.

The real time of the captured camera will be sent to the Android application and we will use the application to determine the power of the car.

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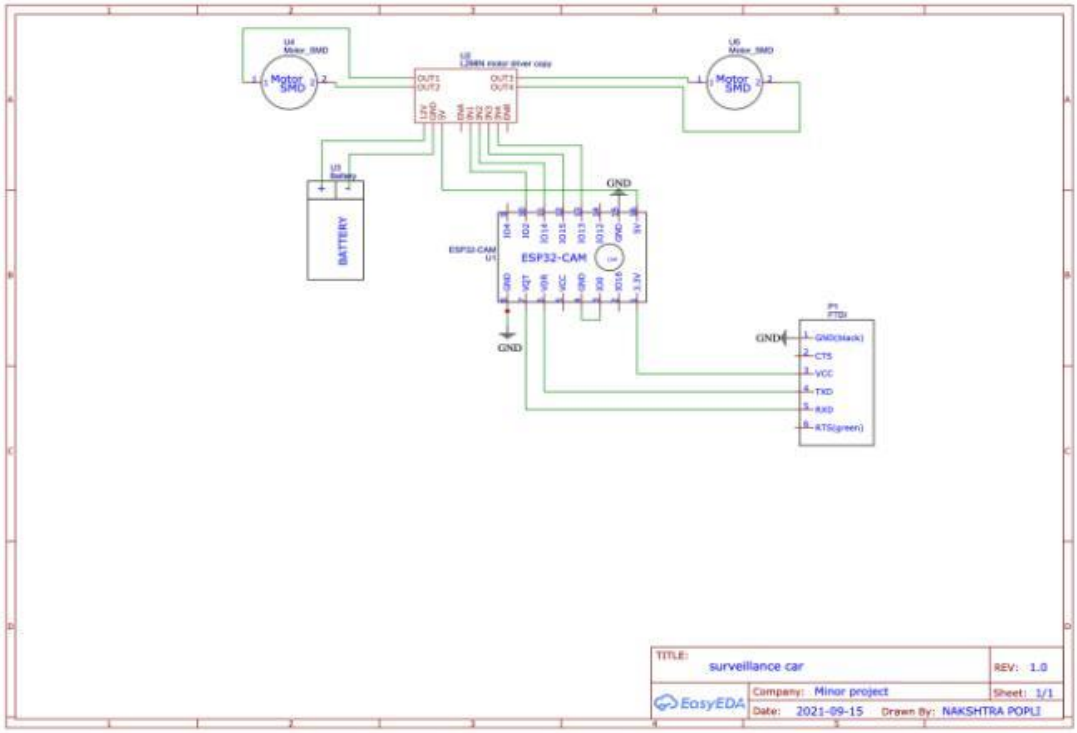

Desired benefits

A. Although this robot only gives us a brief picture of the situation, it cannot agree with much or give t he facts. However, the robot has many uses and can be used to detect many situations that may be d angerous or impossible for humans.Mine accidents, urban disasters etc. There are many situations th at require the use of remotecontrolled robots to assess hazards and develop strategies to find access and escape points needed to respond to missions. and save lives. > However, there is usually a high risk of losing your workers when captured by the enemy. With the development of technology in the last few years, it has become possible to adapt robots for remote monitoring of important facilities. Some locations need video surveillance for a short period of time, so it may not always be possible t o provide them with a CCTV system. This serious situation is mostly experienced in the field of agri culture. For example, the field should be included in video surveillance only while the plants are gro wing. Inspection of pastures is only valid if livestock roam the pastures. Additionally, the pastures, f ields, and hills that were best for observation are generally no longer active. Using a robotic car for mobile video monitoring in agriculture will be more beneficial than choosing a desktop monitoring model. Mobile robots do not need to build expensive buildings, install telephone poles and lay cable s; This makes them more useful and saves money.

B. Scope of Application

Nowadays, all technologyrelated activities are mandatory, robots are an important part of the future and virtual security is mandatory.

âœ Patrol

Monitor the streets regularly to keep people safe and help the police be notified as quickly as possibl e.
The chance of receiving false or unbiased information is minimal.Check, record and if the informati on relates to the criminal history of a person on the criminal record, send the information to the auth orities immediately.For example, if a criminal escapes, the robot can send a message to the police in forming them of the criminal's last location.For example, if a criminal escapes, the robot can send a message to the police informing them of the criminal's last location.

· Military applications

Some places only need to collect and monitor data, so this robot patrol car can be used; We can prov ide immediate information and guidance through updates. Military service when necessary.

â¢ Traffic App

Can be used to monitor traffic rules even if people wear helmets and use car seats.

Due to the COVID-19 virus, people wear masks and maintain social distance.

â¢ Environmental concerns

Promote clean-up and penalties on the internet for non-
compliance with standards and damage to the environment.

Make a short sound to remind people to follow the rules and keep the area clean.

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