

## Military Medibot

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**Abstract:** Military and piece of ground areas that primarily would like the progressive technologies that will provide wise service in varied aspects, and robotic systems square measure one altogether the key solutions for such wants. Time is also a vital issue once handling troopers UN agency experience a unforeseen medical service that sadly could result in death due to inconvenience of the emergency treatment. Therefore, Associate in Nursing on the spot treatment exploitation remote emergency medi-kit in military areas ought to be administered to the victim at intervals some minutes once collapsing where doctors could not provide service. Hence, we've designed and developed the medi-kit providing automaton, that brings on degree throughout a unforeseen event of medical service and facilitates varied modes of operation from manual to voice steering functioning legion to avoid wasting lots of someone's lives in military areas. The humps and potholes over the way square measure detected and controlled by the beast remotely. The voice steering square measure transmitted exploitation RF signals once necessary.

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### I. Introduction

The thought of sophisticated machines which can serve the oldsters well or relieve humans of tedious chores has been degree object of human imagination. it's going to be seen with many of today's occupations square measure replaced by automation therefore on assist stop manual handling injuries among the work. automaton is degree autonomous or semiautonomous machine that is capable to maneuver around in their surroundings and may conjointly perform varied tasks either with direct or partial management by human direction or totally autonomous. With victimization multiple sensors for navigation, this automaton is prepared to navigate from some extent to a given place whereas not losing the correct path or hit obstacles. There square measure a unit varied detector types used for autonomous navigation in mobile like vision and vary sensors. they have really short time to hunt out the victims in any unhealthy luck situation; otherwise the prospect of finding the victims that square measure still alive is form of zero.

In such a vital state of affairs, technology could even be accustomed support rescuers in varied tasks. Intelligent mobile robots And cooperative multi- agent robotic systems unit of period a lot of associated obtaining employed in many various {ways|ways that|ways in that} during which throughout which to hunt out Associate in Nursingd save the victims in an passing faster and a lot of economical manner. The automaton that's able to try to do such tasks is accepted as rescue automaton. throughout this study, we've a bent to developed a system that collects video knowledge through a up to date designed device mounted on a vehicle and a few means that discover potholes. throughout this Project the unendurable detector is utilized to hunt out the outlet and Humps among the roads. This unendurable detector emits the pulses at regular interval of time; the receiver listens to the echo, and round-off time into the perform of height. The Receiver detects the abrupt changes among the parcel, by comparison the round-off time. As default the character of the parcel must be determined before. so once the outlet is detected by the system it correspondingly send the intimation to the Road maintenance Authority, so this would possibly decrease the pricey time for them to search out the Pothole's among the roads.

Ferring to a figure within the body of the text, the abbreviation "Fig." is employed Figures got to be numbered among the order they appear among the text. Table captions appear targeted on high of the table in higher and minuscule letters. once concerning a table among the text, no abbreviation is utilized and "Table" is capitalized.

### II. Literature Survey

Potholes Detection is that the intriguing topic of research and researchers square measure working on clone of notice it automatically with many techniques they have already developed the detection of Potholes and Humps victimization varied techniques like IR device. we've tried one issue totally all completely different i.e. exploitation the camera with Raspberry Pi therefore as that the maneuver is easy and quick as at an identical

time we've a bent to ar exploitation government developed automaton application for inflicting the captures photos of potholes and humps on the server therefore as that necessary actions unit progressing to be taken as speedily as doable.

Radio management automobile exploitation RF module is also a tool or machine which can follow a like path. The chip is preprogrammed and embedded within the automaton. one in each of the fundamental problems with microcontroller-based designs is that the acceptance of commands from the user in real time from outside world. The second draw back with LFR is wired connections, and thus the length of wire is that the foremost constraint. as a result of the length of a wire can increase, the signal strength attenuates and at the side of signal strength attenuation delay in timings put together can increase to beat these issues, RF is used as a results of it provides a convenient approach of deed signals whereas not conductors and therefore eliminating the attenuation and time delay. This approach solves the matter of dominant LFR with the abcitious usefulness of command mode. The command mode LFR is controlled exploitation computer based mostly all directions developed in C-programming language. Some work supported oftenest Identification (RFID) systems was reported in (Finke zeller, 2003; semiconductor very little or no Guide). In these systems RFID tang is connected to receive and send info to and Journal of Advanced subject and Technology analysis one (2011) 25-35from a remote-control device.

The Strength of these RFID systems is that they're going to overcome line of sight downside conjointly as line loss and limitations, up to now RF based line following robots ar built as given in (Willem, 2011). but they are not enforced to be controlled via pc. The planned model RF based LFR has been build and it's controlled with personal computer (PC).

### III. Block Diagram And Description

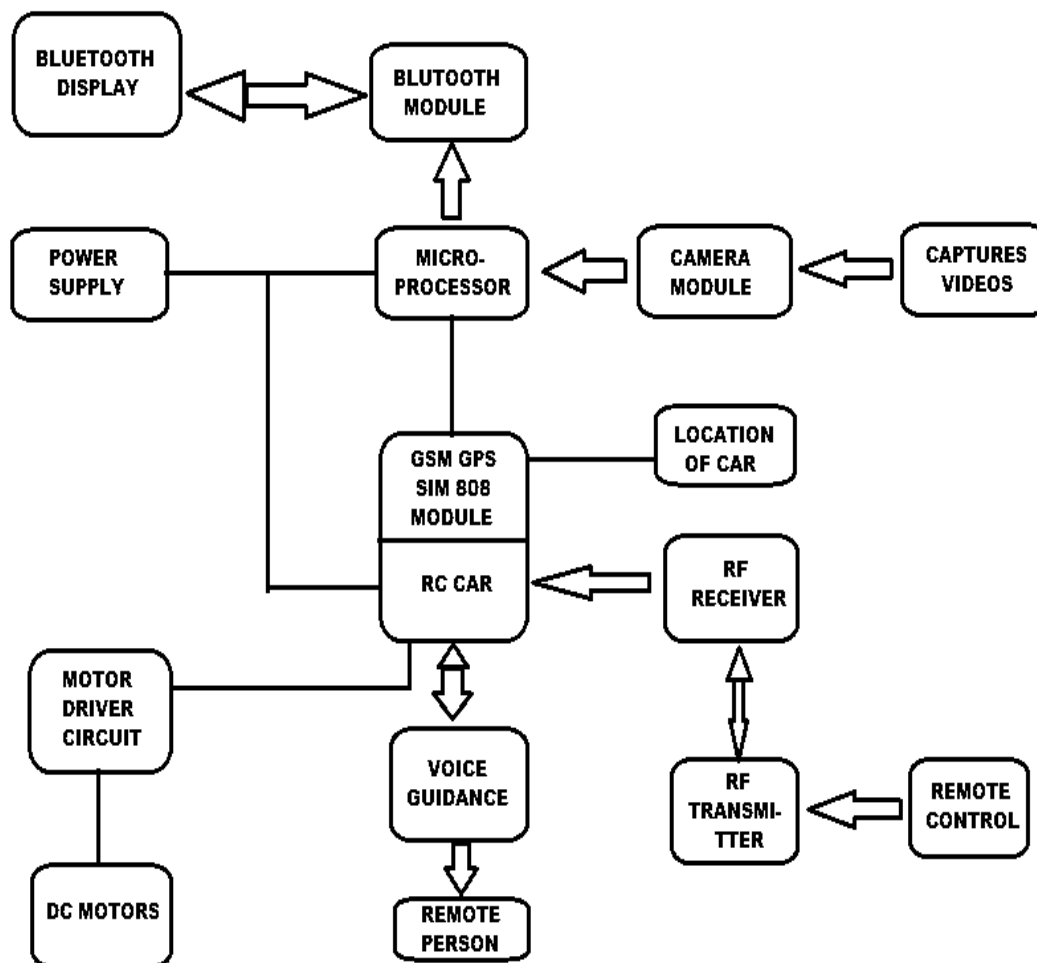


Fig. 1 Block diagram

## **SIM808 GSM GPS MODULE**

We are using SIM808 GPS GSM module to track location of the RC car. It will send the situation of the RC automotive to the device user as shortly because the device person sends a track message on the registered range SIM present on the SIM808 chip. SIM808 is an all in one system with GSM, GPRS, GPS & BLUETOOTH. SIM808 is advanced compared to SIM908. In this post we explore how to parse GPS data (without using TNYGPS library) & send it through inbuilt GSM. SIM 808 has 2 antenna sockets one for GSM & other for GPS. A stub antenna is employed for GSM & a magnetic external patch antenna is employed for GPS. Do not interchange these 2 antennae. The antenna socket nearest to SIM808 chip is for Global Positioning System. Connection between Arduino UNO & SIM808 is simple.

Gnd to Gnd

Tx of SIM808 to Rx of Arduino (soft serial digital pin 7)

Rx of SIM808 to Tx of Arduino (soft serial digital pin 8)

A separate power adapter of 12v 2amp is needed for SIM808 board.

Insert valid SIM on to the slot at the rear of SIM808 board

Power on & notice the NETWORK LED. It blinks fast initially & when it gets network it blinks, once per second which is very slow.

## **ARDUINO**

Arduino Uno may well be a microcontroller board supported the ATmega328P. It's fourteen digital input/output pins (of that vi are going to be used as PWM outputs), vi analog inputs, a sixteen megacycle quartz, a USB association. Simply connect it to a transferable portable computer with a USB cable or power it with a AC-to-DC adapter or battery to urge started, you'll tinker together with your UNO whereas not worrying AN excessive quantity of relating to doing one issue wrong, worst case state of affairs you may replace the chip for a few used and start all over again.

## **POWER SUPPLY**

In this project circuits, sensors & motor are used which require +12V & +9V(DC) supply, to fulfill this requirement we have used following circuit of power supply which provides regulated +12V & +9V.(DC).

## **ARDUINO BOARD**

Arduino Uno could be a microcontroller board supported the ATmega328P. It's fourteen digital input/output pins (of that vi square measure used as PWM outputs), vi analog inputs, a sixteen rate quartz, a USB association, associate influence jack, makings ICSP header with a switch. It includes everything required for microcontroller. Only connect it to a conveyable pc or power it employing a AC-to-DC adapter to urge started.. you'll tinker together with your UNO while not worrying an excessive amount of regarding doing one thing wrong, worst case situation you'll replace the chip for some bucks and begin another time. "Uno" means one in Italian and was chosen to mark the discharge of Arduino package (IDE) 1.0. The no board as well as type 1.0 of the Arduino package were the versions of Arduino, presently developed to newer releases. The Uno is that the initial during a } very series of USB Arduino plank, Associate in Nursing additionally the model for Arduino platform; for an in depth list of present, past or obsolete boards see Arduino indicator of boards.

## **GPS RECEIVER**

Global Positioning System could be a satellite navigation system and is employed to capture geographic location and time, regardless of the climatic conditions. It's maintained by the US Government. It is freely allow to use by anyone WHO encompasses a GPS receiver. It obtains the GPS data from satellites in National Marine natural philosophy Association (NMEA) format. The NMEA has outlined a customary format for the GPS data. this can be followed by all the satellites. the quality defines varied codes like registered mobile SIM pattern GSM equipment. This registered mobile SIM is gift on the mechanical man device that acts as server. The messages sent embrace information regarding depth of the hollow or height of the hump and its location coordinates..

## **GSM**

GSM/GPRS module is used to see communication between a laptop computer and a GSM-GPRS system. Global System for Mobile communication is honour vogue used for mobile communication in Associate in Nursing extremely heap of states. International Packet Radio Service is part of GSM that allows higher knowledge transmission rate. Gsm/gprs module made up of a gsm/gprs instrumentality assembled aboard power provide communication interfaces like rs 232 usb etc for pc. The instrumentality is that the soul of such modules. GSM/GPRS equipment can be a wireless equipment devices that area unit designed for communication of a laptop with the GSM and GPRS network. It needs a SIM card a bit like mobile phones

which are used to start communication with network. To boot they have IMEI (International Mobile Instrumentation Identity) vary constant as mobile phones for his or her identification. Again "Uno" means that one in Italian it was selected to mark the discharge of Arduino software system &#40;IDE&#41; 1.0.

### **DC MOTORS**

In the RC car, we have used four DC motors of 100 rpm and 2 Nm torque which are used to drive the RC car. Power demand for these motors is 12V DC offer. These motors are connected to motor driver IC L298N.

### **MOTOR DRIVER**

The motor driver used within the RC receiver circuit is L298N. The L298N motor controller follows the H-bridge configuration, that is handy once dominant the direction of rotation of DC motor. The L298N is Associate in Nursing integrated monolithic circuit throughout a 15- lead Multi watt and Power thus twenty packages. It is a high voltage , high current twin full-bridge driver de-signed to only settle for traditional TTL logic level sand drive inductive plenty like relays, solenoids, DC and stepping motors. Two modification inputs square measure provided to vary or disable the device severally of the in-put signals. The emitters of the lower transistors of each bridge are connected on rand the corresponding external terminal is also used for the association of associate external sensing electrical device.

### **OV7670 CAMERA MODULE**

The OV7670/OV7171 CAMERACHIPTM could also be a coffee voltage CMOS image device that has the whole usefulness of a single-chip VGA camera and image processor throughout a small footprint package. The OV7670/OV7171 provides full-frame, sub-sampled or windowed 8-bit footage throughout an oversized alternative of formats, controlled through the Serial Camera management Bus (SCCB) interface. This multiplication includes a picture array capable of operational at up to thirty frames per second in VGA with complete user management over image quality, information and output information transfer. This product contains a image array capable of operating at up to thirty frames per seconds in VGA with complete user management over image quality, format and output knowledge transfer All needed image methodology functions, aboard exposure management, white balance, color saturation, hue management and additional, unit programmable through the SCCB interface.

To boot, OmniVision CAMERACHIPS use proprietary detector technology to reinforce image quality by reducing or eliminating common lighting/electrical sources of image contamination, such as mounted pattern noise , blooming, etc., to supply a clean, absolutely stable color image.

### **HC-06 BLUETOOTH MODULE**

This Bluetooth module can merely deliver the products serial wireless data transmission. It adopts Bluetooth a pair Of 2.0+EDR commonplace. In Bluetooth a pair of 2.0, signal transmission time of various devices stands at a 0.5seconds interval therefore the employment of Bluetooth chip are going to be reduced significantly and extra sleeping time square measure attending to be saved for Bluetooth. This module is prepared with serial interface, that's simple to use and simplifies the design/development cycle.

## **IV. Conclusion**

The system was developed and tested to serve 2 necessary functions, 1st is to provide medical services in warzone and varied is to automatic detection of potholes and alerting vehicle drivers to reduce accidents. The projected attractiveness for a monetary declares providing medical kit and discovery of awful potholes and uneven mounds, as a result of it uses ease silent sensors. The transportable application used as apart of this framework is a further advantage because it provides timely alerts regarding potholes and humps. The mobile application employed in this technique is a further advantage because it provides timely location of the larva further as alerts regarding potholes and humps. The answer jointly works in time of year once potholes unit full of muddy water as alerts unit created utilizing the knowledge place away inside the information. Future enforced using camera thus we will drive the Medi-bot safely. we will implement Location of potholes and speed breakers alongside their co-ordinates may be detected by victimization vibration-based approach.

### References

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