



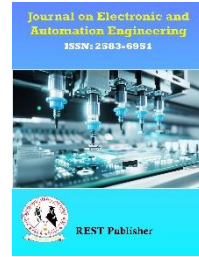
Journal on Electronic and Automation Engineering

Vol: 2(2), June 2023

REST Publisher; ISSN: 2583-6951 (Online)

Website: <https://restpublisher.com/journals/jae/>

DOI: <https://doi.org/10.46632/jae/2/2/12>



Micro Spy Bot

K. Keerthana, P. Tejaswini, D. Krishna, G. Kavya, B. Raju

Jyothishmathi Institute of Technology and Science, Karimnagar, Telangana, India.

*Corresponding Author Email: priyapatelkommineni@gmail.com

Abstract. *Micro robots with live audio and video streaming capabilities can help in tracking human beings during earthquakes and also perform underground surveys. This mini spy car can inspect very minute hole areas that are not accessible to humans. Hence these Micro-bots are essential to find people stuck under collapsed buildings due to earthquakes. These small micro-size robots are equipped with a camera that helps in spying or helps the army and intelligence system in collecting information and live video footage and activity on the enemy and terrorists. But designing such micro-sized SPY BOTs is very complicated. Hence the proposed design of micro-sized SPY BOTs size is not longer than a small finger and can go easily in minute holes to collect the data. Robots have been making inroads to human life in almost all spheres. Spy bots can be immensely useful for unmanned surveillance and covert spying operations. If online streaming of the spied data can be made feasible, that would be an added advantage. In this paper, we propose an unmanned Spybot that can be controlled remotely from web-page based commands, using a WIFI network. It can also stream back the spied data that could be video or images, over the WIFI network*

1. INTRODUCTION

The world of surveillance technology has witnessed remarkable advancements, leading to the development of increasingly sophisticated and inconspicuous devices. Among them, micro spy bots stand out as tiny robotic devices designed for covert surveillance and information gathering. These miniature marvels are equipped with cutting-edge technology, allowing them to navigate discreetly and capture valuable data in various scenarios. A micro spy bot combines the principles of robotics, wireless communication, and sensor technology to achieve its surveillance objectives. By harnessing miniaturization and advanced engineering, these small devices are capable of infiltrating spaces that would otherwise be inaccessible to larger surveillance systems.

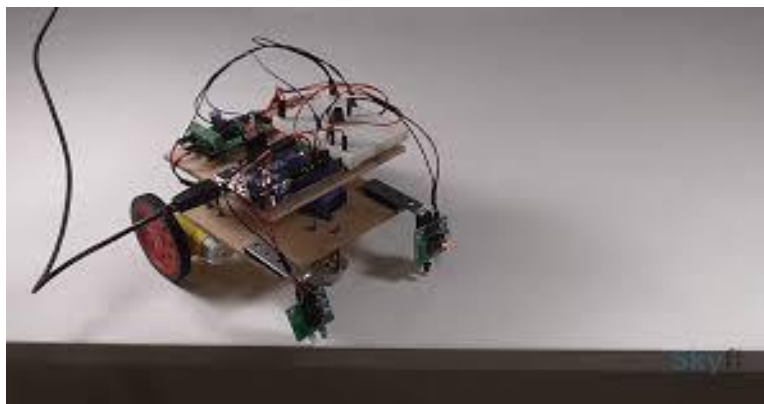


FIGURE 1. Micro Spy Bot

With their diminutive size and inconspicuous appearance, micro spy bots can operate unnoticed, making them a valuable asset in intelligence gathering, security operations, and research applications. Their applications range from law enforcement and military operations to scientific research, industrial inspections, and even entertainment. Equipped with cameras, sensors, and wireless communication capabilities, micro spy bots can capture high-resolution images, record audio, and transmit data in real-time to a remote location or receiver. Some

models incorporate stealth features, such as camouflage or the ability to mimic everyday objects, further enhancing their ability to remain undetected. Control mechanisms for micro spy bots can vary. Some are remotely operated by human operators who guide their movements and actions, while others employ artificial intelligence algorithms to operate autonomously based on pre-programmed instructions or real-time decision-making. It is crucial to approach the topic of micro spy bots with responsibility and ethical consideration. The use of surveillance technology must adhere to legal frameworks and respect individuals' privacy rights. Proper regulation and oversight are essential to ensure that these devices are used ethically and responsibly.

2. LITERATURE SURVEY

The main idea to construct this robot is for spying purposes, it is to keep an eye on people's manoeuvres in the battle ground or in the war days to reduce the chances of takeovers from the enemy side. Army people or entities have to face many dangers in their lives while spying on enemy or opposite entities. To overcome these ideas for this job, robots will be more suitable and will decrease the risks of loss of human lives and can better spy illicit manoeuvres of their opposite entities. Before entering any doubtful districts. We can send robots to check the status of that field, so the military or army individuals don't need to risk their life. These types of Robots will be constructed in such a way that it would have a night vision camera mounted on it so in the darker places or at night it can record the view clearly. Camera will be controlled through the remote by using an android application. Nowadays there are many people who can construct an android application without any Trouble. For communication we need to use some modules, if we use Bluetooth modules it won't be much efficient for long ranges as the Bluetooth communication is weak and not that strong. There are many different modules with their different specifications. For large ranges we can use Wi-Fi, Zig honeybee and many others. Future scope of this robot is very vast, as it will continue to modify with time. For example, it will be modified by planting gas sensors which will detect harmful gasses in the surroundings. It can also be used as a bomb defuse in the future. The bomb disposal team can have these robots which will help to diffuse bombs. The size of the robot can be scaled down to its minimal size.

3. PROPOSED METHOD

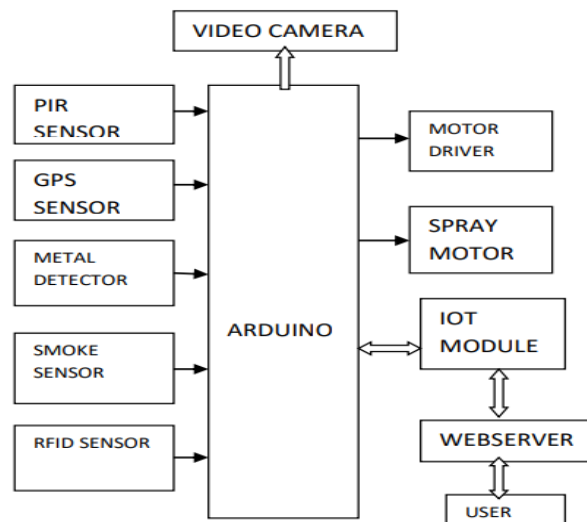


FIGURE 2. Operation of spy bot

In the proposed system contain several parameters like PIR sensor, GPS sensor Metal Detector, Smoke sensor, RFID Reader, spray motor gives the sense to the ARDUINO microcontroller. The PIR (Passive Infra-Red) Sensor is a pyro electric device that detects motion by measuring changes in the infrared levels emitted by surrounding objects. Global Positioning System (GPS) is a global navigation satellite system that provides location and time information in all weather conditions. GPS satellites transmit signal information to earth. This signal information is received by the GPS receiver in order to measure the user's correct position. Metal detector using high-frequency oscillation to detect ferrous and non-ferrous metal objects and in capacitive models to detect non-metal objects. A smoke sensor is a device that senses smoke, typically as an indicator of fire. A radio frequency identification reader (RFID reader) is a device used to gather information from an RFID tag which is used to track individual objects. Radio waves are used to transfer data from the tag to a reader. Miniature Design: The proposed

micro spy bot features a compact and lightweight design, resembling a small insect or a tiny drone. Its size allows it to navigate confined spaces, such as narrow crevices, vents, or crowded areas, without attracting attention. **Stealth Capabilities:** The micro spy bot incorporates advanced stealth features, such as adaptive camouflage or the ability to mimic common objects like a pen or a household item. This enables it to blend seamlessly into its surroundings, making it virtually indistinguishable from its environment. **Surveillance Equipment:** The spy bot is equipped with a high-resolution camera, capable of capturing both images and videos in real-time. It also includes an array of microphones for audio recording, ensuring comprehensive surveillance capabilities.

4. RESULT

The robot moves as long as you're pressing the buttons. When you release any button, the robot stops. However, we've included the Stop button that can be useful in case the ESP32 doesn't receive the stop command when you release a button. Or else we can control via esp32 camera Wi-Fi robot car.

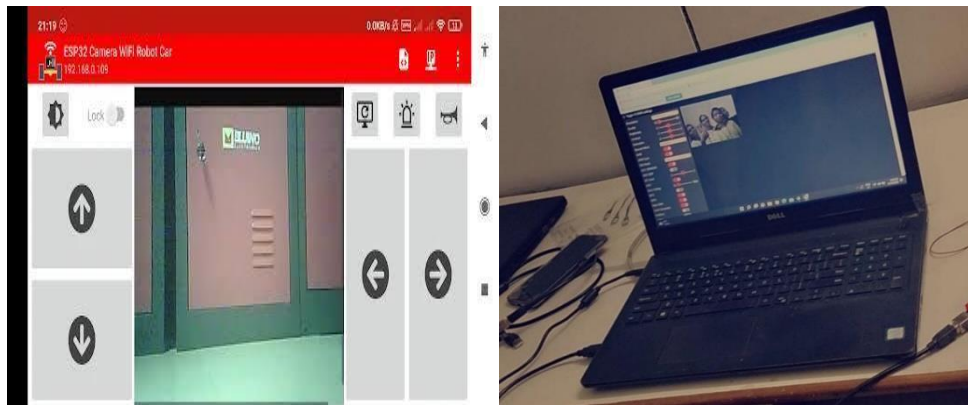


FIGURE 3. Output of spy camera

5. CONCLUSION

The main motive of the MICRO SPY robot was to make it user friendly. The spy robot can easily move, capture images and wirelessly transmit them, thus giving the soldiers intimation about the dangers and situations in the war field. The robot will move depending on the motor direction based upon the input we give through transmitter (remote) section

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