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[iajpb.editor@gmail.com](mailto:iajpb.editor@gmail.com)  
[editor@iajpb.com](mailto:editor@iajpb.com)



# SOLARPOWERED AGRI-BOT USING IOT WITH DISEASEIDENTIFICATION

Mr.TANGUTURUKHAJAMODDIN<sup>1</sup>,Mr.A.M.GUNASEKHAR<sup>2</sup>

## Abstract:

Agricultural production is the backbone of rural India's economy. It is becoming increasingly difficult for farmers to find and retain competent workers, since many have left the country to find jobs in cities. As a result, robots are needed in farming to alleviate the pressure on farmers. As part of this research, a robot was built that can sow seeds and regulate the amount of water they receive. Gardening, farming, and harvesting are just a few examples of possible uses for this technology. Spreading out the time and effort required for farming and cultivating is the major goal of the cultivating procedures implemented. Robotics software built for the robot allows it to seed, water, and spray pesticides in accordance with a user-defined path. The necessary volume of water between the two plants' soil moisture sensor readings Matlab analysis is also used to detect disease in plants or the field.

**Keywords:** RaspberryPi, Security, IOT.

## I. INTRODUCTION

Farmer is the backbone of rural India. While farming the farmer facing many problems such as lack of timely availability of efficient workforce, as many people have left the countryside to live here. An objective of this project is to develop a smart agriculture system that lowers time and energy required for repeating the same farming operations and boosting yield, as well as reducing the load on farmers. As a machine, the robot spray pesticides on the plants before they are seeded and watered mechanically. Matlab analysis is also used to detect plant illness.

## II. EXISTING METHOD

Because of the many devices currently utilized for seeding purposes, a robot has been built that can go into the soil and sow seeds. Auto and manual modes are available on this robot. Sensors help it move in auto mode to a specific location. This robot can only be controlled verbally. Only a limited number of Bluetooth modules can be used in a given area.

1M.TECH, EMBEDDED SYSTEMS, SREERAMA ENGINEERING COLLEGE, TIRUPATI, INDIA.  
1khaja.tanguturi@gmail.com

2M.TECH, ASSOCIATE PROFESSOR, SREERAMA ENGINEERING COLLEGE, TIRUPATI, INDIA.  
2guna.421@gmail.com

## PROPOSEDMETHOD

This "agri-bot for automatic seeding, and watering applications" will solve all of the problems with the current system. Long-distance communication is possible because to this project. By leveraging the internet, we are able to remotely control the robot. Automation in farming is essential to alleviate the stress on farmers. An objective of this project is to develop a smart agriculture system that lowers time and energy required for repeating the same farming operations and boosting yield, as well as reducing the load on farmers.

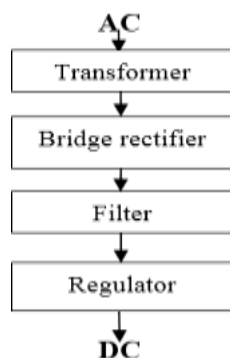
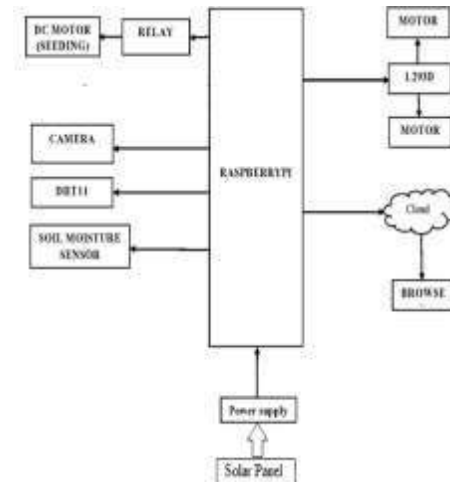


Diagram of the blocks



## III. HARDWARE REQUIREMENT

### A) RaspberryPi3modelB+:

The Raspberry Pi is a credit card-sized microcomputer. By attaching necessary wires like as HDMI and audio, it may act as a microcontroller and a minicomputer at the same time. As a microcontroller, the Raspberry Pi can be described as a credit card-sized computer. When compared to other controllers, this one performs better.

### Fig2:RaspberryPi

### B) PowerSupply:

One way a device's electrical capacity is provided is through the use of a power supply force. AC (substituting flow) is converted to DC (direct flow), and the PC receives power from this converter in the form it needs. It also keeps the voltage in check, allowing the PC to perform smoothly and efficiently without being overheated. A computer's power supply is a critical component, and it must function properly in order for the rest of the components to function. Flowchart of power supply:

All the above components are used to convert AC voltage to DC voltage.

### C) WebCamera:

Cameras play a crucial role in the development of robots. In order to see a room from afar, a camera is used. A USB camera was used to capture the images. It will

be accessible to clients whenever they click on the video button on a stacked website's page. Because of this, we use MJPG as a decorative. The camera used to inspect a room is depicted in the image below.

#### D) **MotorDriver:**

The motors are operated by a motor driver. Motor drivers allow two motors to run at the same time. Robotics makes extensive use of motor drivers.



**Fig9:MotorDriver**

#### E) **DHT11sensor:**

The DHT11 sensor is used for detecting the humidity and temperature.



**FIG:DHT11SENSOR**

#### F) **soilmoisturesensor:**

The soil moisture sensor is used for detecting the moisture content in soil.

#### G) **SOLARPANEL:**

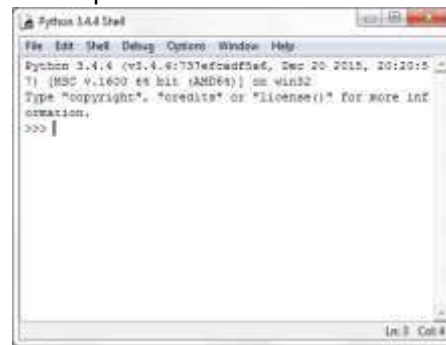


Light from the sun is absorbed by solar panels, which then transform the energy into electricity that may be utilized to

**power electrical loads.**

#### **Python:**

Python is a high-level, interactive, and general-purpose programming language that may be used for a wide variety of tasks. From 1985 through 1990, Guido van Rossum worked on the project. A general public license allows anybody to download and use the source code. Python is named after the television show "Monty Python's Flying Circus," not the snake. Object-Oriented programming is supported for application development..



#### **ADVANTAGES**

- Efficient workforce.
- Reduce the burden of farmers.
- Low cost
- Safety
- Save the time and energy

#### **APPLICATIONS**

- Automated harvesting system
- Weed control
- Plough, spraying, thinning, seeding
- **Nurseries**
- Sorting and packing
- Row crop, winery, etc...

#### **VI. WORKING OF THE PROJECT**

In this proposed method, farmers can deploy robots to help them farm their fields. Robots autonomously detect and control the sowing, watering, and field disease in this system. The android app allows remote control of the robot from any location.

#### **VII. RESULTS**



The output image of an agribot where it is controlled using blynk app mobile application.



The robot movement can be controlled by the switches and the data is uploaded to the server when the data\_upload push button is pressed and when the image\_upload is pressed, the camera captures the image and sends it to the MATLAB mail.

#### CONCLUSION

Unlike humans, the Agri-bot is able to function in a wide range of weather conditions. Compared to performing similar tasks in reality, the anticipated time to complete the five functions is significantly

shorter. It's a one-time investment that has a significant impact on overall development costs. This Agri-bot is likely to be a component of automated agriculture development.

#### VIII. FUTURESCOPE

To make the Agri-bot autonomous in the future, we can install this system so that it can perform various rural tasks on its own. Using the self-sufficient framework in different rural cycles, it is clear that there is a great deal of room for improvement in terms of cost-

effectively enforcing security guidelines. We'll need artificial intelligence (AI) to help with this endeavor in the future. We can use a night vision camera to keep an eye on our property at night. ' Automating plant infection detection with machine learning and artificial intelligence (ML&AI) is a must.

#### **REFERENCES**

[1] "To make the Agri-bot autonomous in the future, we can install this system so that it can perform various rural tasks on its own. Using the self-sufficient framework in different rural cycles, it is clear that there is a great deal of room for improvement in terms of cost-effectively enforcing security guidelines. We'll need artificial intelligence (AI) to help with this endeavor in the future. We can use a night vision camera to keep an eye on our property at night. ' Automating plant infection detection with machine learning and artificial intelligence (ML&AI) is a must.

[3]. Microcontrollers and sensors can be used to automate farming, according to the journal "IJSRMS" (Abdullah Tanveer, AbhishekChoudhary, Divya Pal, RajaniGupta, Farooq Husain) Crops can develop more quickly when farming is done with the help of innovative technologies.

[4] IJARCCCE June 2016 "IOT Based Smart Agriculture" Prof. Dr. R. S. Kawitkar<sup>2</sup> and (Nikesh Gondchawar<sup>1</sup>) are the authors of this paper.