

Increasing the Production Rate by Automation Systems in Fields

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Abstract: Presently, considerable research has been undertaken it was mentioned that many of labors and Farmers are feeling very tough to work to produce the goods in short time and more over in testing field huge labor are required to test the components whether it properly finished are not. In general agriculture aspects and testing aspects are all going manually some of us countries now a days doing a wide research on this agriculture automation system. Agricultural Robotics is the artificial intelligence system of automation system into biodiversity such as forestry , farming, green house, etc. currently a large number of studies are done to increase the productivity rate. The experts contributions is to interface an agricultural robots with mobile phones and robots which can fly(flying robot), test fertility , which are regularly used for cultivation . A meticulous study is done on different types of robots which increase the efficiency and precision in agriculture fields . Trial runs are being done on newly designed weightless robot built using a Arduinio Kit in fields. Still in developing Nation , such as India, Pakistan and Australia , cultivators are interested to use robots to work in Agricultural fields for Ploughing, cultivating and Leveling. Presently agriculture robots are supervised by human to increase the productivity rate

Keywords:Robotics ,Automation Systems ,Production Rate,Atmega8 Sensors, Agriculture, Arduinio Circuit, Sensor.Atmega8

1. INTRODUCTION

Robotics is the division of technology essentially embedded systems which deals with the programming ,blueprint assembly, process, and functionality of robots as well as computer structure for their control, feedback devices for example Sensors and information method. The propose of a programmed system is to follows the ethics of Mechanical Engineering, Electronic Engineering and Computer Science Engineering (especially Artificial Intelligence). The study of biological systems often plays a major role in the Real time engineering projects and also forms the field of bionics. The mathematical expression of a biological system may give rise to controls the algorithms , or by observing how a process would be handled by nature, for example the bifocal vision system, an analogous system may be formed using electronics

We can expect the robots performing agricultural process autonomously such Ploughing watering, weed control, fruit picking,, in any time irrespective to day or night for an effective tasks by allowing farmers to reduce the

mechanicals Stress with full effects and increases the production rate with full efficiency

Adding up a Arduinio circuit board will leads to increases the production rate in easier way because usage of Atmega8 Circuit board will allows the people to program easily .Arduinio software uses Arduinio software, programming software and Language is Embedded C

2. EXISTING SYSTEM

Presently, considerable research has been undertaken it was mentioned that many of labors and Farmers are feeling very tough to working hot sun to produce the goods, in short time, and there is a increases in scarcity of labors and more over in testing field huge labor are required to test the components whether it properly finished are not. In general agriculture aspects and testing aspects are all going manually some of us countries now a days doing a wide research on this agriculture automation system.

3. PROPOSED APPROACH

3.1 Agriculture Robot

Using a Arduinio circuited robot in Agriculture field for ploughing, seeding and watering when requires and in large scale module even in fruit plucking these agriculture robot is going to take place ,Due to the usage of automation system man can do another work by leaving her work too robot due to this, time can be saved in routine life which helps us to increase our production rate in fields, Making usage of solar panels for power board will saves he consumption of Nonrenewable resource energy due to this we can reduce air pollution.

The applications of robotics in real time is spreading very fatly all over the world in every day to cover further domains, as the opportunity of replacing a Robot in place of human as a operators provides effective solutions with return our own investment in less time. This is especially important when the duties, that need be performed, are potentially harmful for the safety or the health of the workers, or when more dangerous issues are granted we can use robotics .such as Manufacturing industries and Drug Industries more and more concerned by the deployment of unmanned options

Conventional techniques depend on human power for lifting, pushing, dragging, weeding, fruit picking. Humans are prone to work in Dangerous and Hazards environment

when they are spraying chemicals and pesticides it may create a problems to farmers. The tractors compact the soil, as they are larger in weight. They cannot move in all conditions. These methods cannot identify the crop and soil in close proximity. In the case of automated agriculture (which uses as field robots) is exemplified from above problems. Robots can work restlessly in all environments;

4. REQUIREMENTS

- Arduino Circuit Board
- Arduino Programming Software

4.1 Arduino Software

Arduino Amega8 microcontroller on the board is programmed using the Arduino programming language and Arduino development environment where . Arduino projects can be Done easily and it can communicate easily with system and software where other programming environment can communicate with software while running on a computer (e.g. Flash, Processing,MaxMSP).

4.2 Arduino Board

It is a embedded system where we involving by connecting system hardware with software in real time environment it's an open source software easy to program up with different applications. 9 V power supply required to the board which will be shared all over the circuit board for example sensors LED displayer etc. The main component which is the heart of this circuit board is controller(Atmega) Atmega8 is controller which is manufacture by Atmel Labs Consists of 16 pins



Fig 1: Arduino Board

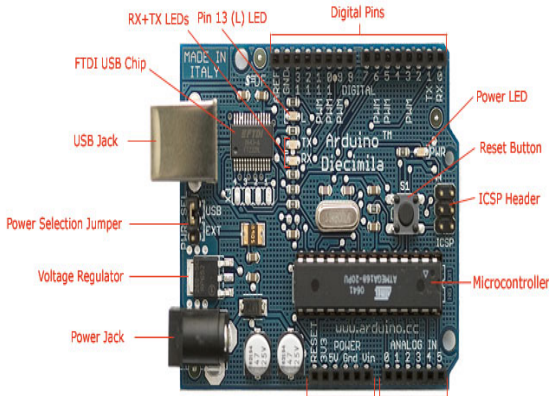


Fig 2: Agriculture Robot

5.ALGORITHM

Here we are using simple algorithm which helps farmers to understand easily and reprogrammed whenever necessary the below algorithm will gives us a motion of robot in field

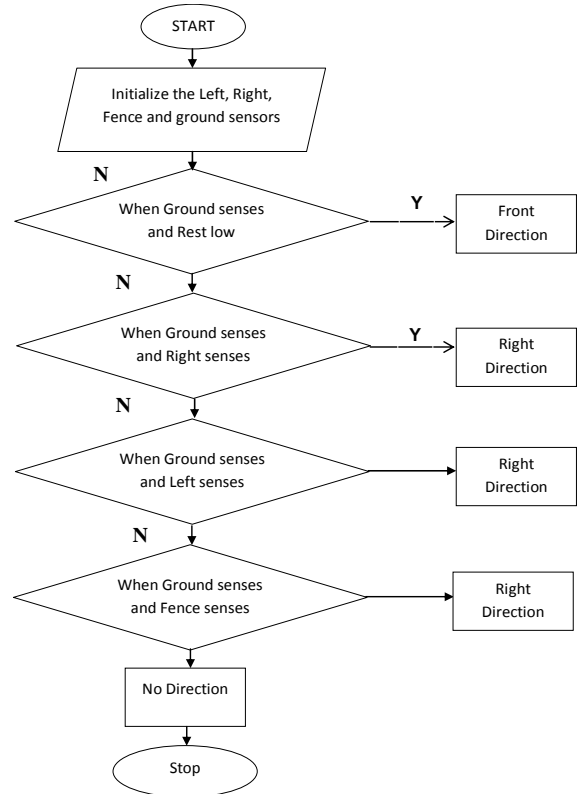


Fig 3: Flow Chart

Table 1: Algorithm For Agriculture Robot

Left	Right	Fence	Ground	Motion
Senses	No	No	Sense	Left
No	No	No	Sense	Front
No	Sense	No	Sense	Right

6.SAMPLE CODE

```
int d,r; //variable Declaration
void setup()
{
    pinMode(10,OUTPUT); //Pin Declaration
    pinMode(11,OUTPUT);
    pinMode(12,OUTPUT);
    pinMode(13,OUTPUT);
    pinMode(2,INPUT);
    pinMode(3,INPUT);
}
void loop()//Task Loop
{
    d=digitalRead(2);
    r=digitalRead(3);
    if((d==LOW && r==LOW)|| (d==LOW && r==HIGH))
    {
        digitalWrite(10,HIGH);
        digitalWrite(11,LOW);
        digitalWrite(12,HIGH);
        digitalWrite(13,LOW);
    }
}
```

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