

REVIEW PAPER ON AGRICULTURAL ROBOTICS

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Abstract - One of the major economic issues faced by the country is agriculture as this is the sector which is source of livelihood for about 54% of Indians till date. Still today this sector is not well developed and faces lots of problems resulting into low productivity of crops. The rural farmers in India suffer from poverty and most of them are illiterate so there is lack of good extension services like on time sufficient electricity, high cost for different modern techniques and lack of human power.

For six decades robots have played a fundamental role in increasing the efficiency and reducing the cost of industrial production and products. In the past twenty years, a similar trend has started to take place in agriculture, with tractors and harvesters already being available commercially but all this take more cost that is not preferable for poor farmer and a required on time electricity is not available for sprinkling. So we tried to solve this problem through robotics. Our robot is energy saving and efficient as it contain solar plate on it and can perform plough, sowing seed and sprinkling. It contains a wireless camera and we can control a robot from some distance. In agricultural robotics, as in other robotic systems, one of the most important parts is the control architecture.

Key Words: Processors, RAM, Hard disk, Microcontroller IC 89S52, RF Module, LED Display

1. INTRODUCTION

Our project is consisting of robotics. It is an agricultural robot capable of performing farming like ploughing, seeding, sprinkling. It contain a wireless controls through computer. It makes robot work efficient and effective. This controls required a separate system to use so we use a RF module technology. Therefore a transmitter and transreceiver are used respectively at laptop and on robot.

Robot is authenticated by User id and password for accessing its GUI. An alternative of "Voice Passwords" for starting the robot vehicle will be also implements as security requirement increased. The system concentrates on 'Farming'. If a driver gives correct user id and password then vb button format allows him to start the robot vehicle perform farming activity and stop.

In order a ploughing and seeding is perform by command given through computers VB button format GUI. We are also using wireless camera which gives a actual view of field. It can also use in another manner like to detect suspicious activities for entering the farm by other individuals.

The next main feature 'solar energy' includes the flexibility in system by use of solar energy in charging the battery. It leads the use of robot in critical situations like shortage of electricity.

2. BACKGROUND

The rural farmers in India suffer from poverty and most of them are illiterate so there is lack of good extension services like on time sufficient electricity, high cost for different modern techniques and lack of human power.

For six decades robots have played a fundamental role in increasing the efficiency and reducing the cost of industrial production and products. In the past twenty years, a similar trend has started to take place in agriculture, with tractors and harvesters already being available commercially but all this take more cost that is not preferable for poor farmer and a required on time electricity is not available for sprinkling.

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3. METHOD AND EQUATIONS

The useful RF transmitter and transreceiver were analyzed and hardware designing based on embedded system were detailed. For short distance transmission, controlling signals sends and receives using radio frequency communication. The proposed system have abroad application foreground in the real application field.

1. PC CONTROLLED AGRICULTURAL ROBOT which is wireless control.

2. Today's major problem that is shortage of electricity is also get a solution in it.

4. FIGURES AND TABLES

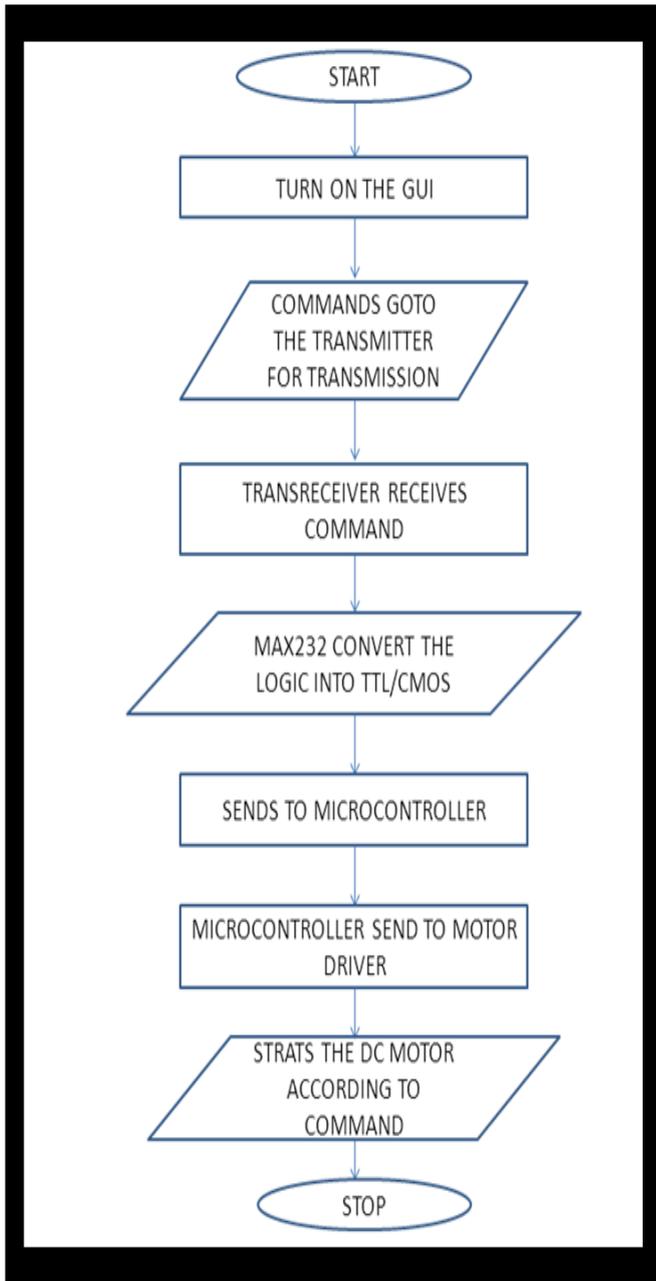


Fig -1: Flow Chart of System

5. CONCLUSIONS

All in one is the best quality for every machine. Efforts must be get decrease but intelligently Without effecting the output. As always machine depends on its resources but we need to implement machine in such a way that it produce its resources by itself.

6. FUTURE WORK

Extra sensors by which it makes possible to operates robot by giving measurements of field. E-SCROW to aware farmer

against access of unauthorized person. By using GSM technique can increase a range of controlling. By developing a controlling application robot can control through mobile.

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REFERENCES

- [1].Wedpathak, G. S. (2015). An Approach of Software Engineering through Middleware. International Journal of Engineering and Management Research (IJEMR), 5(1), 127-138.
- [2].Micheal J Pont, Embedded C, Chp 2 in Introducton to 8052 microprocessor family, Pearson Education, 1998, pp 17-20.
- [3].Ayala & Kenneth J., The 8052 Microcontroller Architecture, Programming and Application.
- [4].Paul Horowitz & Winfield Hill, The Art Of Electronic , Chp 3 Installing keil software, Cambridge University press 1997, pp 36.
- [5] Wedpathak, Asst Prof Ganesh Suhas. "Active Perception System for Effective Collision Free Underwater Robotic Navigation." (2016).

BIOGRAPHIES



Ganesh S. Wedpathak was born in Sangli, India, in 1987. He received the B.E. degree in CSE from the Shivaji University Kolhapur, MH, India, in 2010, and the M.Tech degree in CSE from the JNTU Hydearaba, India, in 2015. In 2011, he joined the Department of CSE, AITRC,Vita as a Lecturer, and in 2014 became a Head Of Department. His research interests are Robotics, AI, Software Engineering, Testing.