Agricultural Robot

¹G. Suryanaga Raju, ²R.Puviarasi

Abstract--Firstly for any AGRI ROBOT the location is the priority because on the basis of the location the robot will work in the fixed area to work. secondary is path deduction in crops there are ROW to detect that rows we need the path deduction in the path deduction we need image processing technique for the high efficiency of yield crop. For this we need the AUTONOMOUS robot of farming process are saving the time and energy required for performing repetitive farming tasks and increasing the productivity of yield by treating every crop individually using precision farming concept. The experiment demonstrates that the proposed method is efficiency and detection accuracy. Coverage of a partially know workshop for information gathering is the core problem for several applications, such as search and rescue precision agriculture and monitoring of critical infrastructures. The planning efficiency DYNAMICALLY.

Keywords-- Robot, Agriculture, Design aspects, environment.

I INTRODUCTION

The Major issue to prepare this paper is to tell the how we can help the farmers to avoid their hard work using this robot and how to get the high yield from the crop. This helps the farmer to understand the current scenario that to make the work easier for farmers we are gone to design this agri robot. Daily every living organism needs food to survive in this world this food is cultivated by farmers from farmers we are getting food daily the food must be a quality as well quantity. To get our five fingers in to stomach the farmer has to put his twenty fingers in the cultivation from above sentence we can understand how much hard work they are doing every day. For their hard work as a human we have to help them to reduce their work of the farmer we are going to design the agri robot. In agri robot it does the two things that it measures the area of land and to collect the yield of the crop we are innovate this agri robot. This agri robot does the begging of the cultivation to the transplation. Firstly the soil is mixed that is the first step for any cultivation of crop after that the robot digs the hole to put a seed in the field the robot is capable of doing to work. At the end of the robot there is tails which help for the replantation. If there is any tree to the cultivation we can able to replant it and we can continue the farming.

II METHODOLOGY

There are mainly four principles in the agri robot that is

- 1. Removing the unwanted plants in the field.
- 2. Digging the hole.
- 3. Seed dropper.

Received: 23 Dec 2019 | Revised: 05 Jan 2020 | Accepted: 27 Feb 2020

¹Student, Saveetha School of Engineering, SIMATS, Chennai, India, Email:puviarasi88@gmail.com

² Student, Saveetha School of Engineering, SIMATS, Chennai, India,

4. Re transplantation

Removing unwanted plants in field:

It means that it is the primary step of the cultivation of crop after the farmer does the mixing of soil with water,

to regain the soil its power. After that the farmer digs the holes to plant the seed.

Digging the holes:

Before the seed plantation we have to dig the hole for the seed to place that seed. For that we have the digger in the robot.

Seed dropper:

After digging hole the seed has to be plant in the hole to grow the crop for that we need the seed dropper.



Fig. 1 Bottom view of the model



Fig. 2 Base of the ROBOT

Replantation :

Replantation is the process that the removing the plant from the place with it roots and we are going to replant in another place safely with out man power. For that we are going to use the agri robot.



Fig 3. Model of AGRI ROBOT

III FUTURE SCOPE

Food is the daily need and it is going to a major business in the future as of present situation is that every student is aiming to get the job. After certain years there were no framers to cultivate the fields so that we need learn how to cultivate the crop in the field. Without food there is no survive for that there is a huge scope in the future.

IV CONCLUSION

One statement is that the poor and rich need food for their survive, there is nothing can be done with out this no one cannot survive. So food is the main essence in the life.

REFERENCE

- GulamAmer, S.M.M. Mudassir, M.A Malik3, "Plan and Operation of Wi-Fi Agribot Integrated System", IEEE Worldwide Conference on Industrial Instrumentation and Control, May 2015
- Fernando A. AuatCheein and RiCardo Li, "Agribusiness Robotics: Unmanned Robotic Service Units in creating endeavors," IEEE present day gear magazine, Sep2013
- SajjadYaghoubi, Negar Ali Akbarzadeh, ShadiSadeghiBazargani, "Self-managing Robots for Agricultural Tasks and Ranch Assignment and Future Trends in Agro Robots", International Journal of Mechanical and Mechatronics Engineering, June 2013
- Pavan.C, Dr. B. Sivakumar, "Wi-Fi Robot Video Surviellance Monitoring" System International Journal of Scientific and Engineering Research, August-2012
- Tijmen Bakker, Kees van Asselt, Jan Bontsema, Joachim Muller, Geritt van straten, "A way following mean supportive robots", Springer Science Business Media, Vol.29,pp 85-97,2010 John Billingsley, Denny Oetomo, "Agrarian Robotics", IEEE Robotics and Automation Magazine, December 2009 D
- 6. D. C. Butcher, D. K. Giles, and D. Downey, "Free robotized weed control systems: A review," ElseveirComput. Electron.Agric, vol. 61, no. 1,pp. 63–78, 2008.

- R. Eaton, J. Katupitiya, K. W. Siew, and B. Howarth, "Free making: Modeling and control of plant gear in a bound together structure," IEEE Int. Conf. Mechatronics and Machine Vision Practice, Dec. 2008, vol. 1, pp. 499-504
- 8. N. Chebrolu, T. Labe, and C. Stachniss. Stunning expanded length registration^{••} of uav pictures of yield fields for precision agribusiness. IEEE Robotics and Automation Letters, 3(4):3097–3104, 2018.
- 9. G. Christie, G. Warnell, and K. Kochersberger. Semantics for UGV assurance in gps-denied conditions.arXiv preprint, 2016.
- F. Dellaert, D. Fox, W. Burgard, and S. Thrun. Monte carloconstrainment for versatile robots. In IEEE International Conference on Robotics and Automation (ICRA), May 1999.
- 11. M. Ding, K. Lyngbaek, and A. Zakhor.Revamped enrollment of raised imagery with untextured 3d lidar models. In 2008 IEEE Conference on Computer Vision and Pattern Recognition, pages 1–8, June 2008.
- 12. J. Dong, J.G. Burnham, B. Boots, G. Storms, and F. Dellaert. 4D Crop Monitoring: Spatio-Temporal Reconstruction for Agriculture. In Proc. of the IEEE Intl. Conf. on Robotics and Automation (ICRA), 2017.
- W. Forstner and B. Wrobel." Photogrammetric Computer Vision Statistics, Geometry, Orientation and Reconstruction. Springer Verlag, 2016.
- F. Kraemer, A. Schaefer, A. Eitel, J. Vertens, and W. Burgard. From Plants to Landmarks: Time-invariant Plant Localization that uses Deep Pose Regression in Agricultural Fields. In IROS Workshop on AgriFood Robotics, 2017.
- 15. Balan B, Tech M. "Sensor based smart agriculture using IOT," *International Journal of MC Square Scientific Research*, vol. 9, no. 2, 2017.
- R. Kummerle, B. Steder, C. Dornhege, A. Kleiner, G. Grisetti, and W. Burgard. Enormous scale outline based pound utilizing airborne pictures as earlier data. Free Robots, 30(1):25–39, Jan 2011.
- 17. T.B. Kwon and J.B.Song. Another part ordinarily saw from air and ground for outside repression with rise map worked by raised mapping structure. Diary of Field Robotics, 28(2):227–240, 2010.
- K. Y. K. Leung, C. M. Clark, and J. P. Huissoon.Constrainment in urban conditions by sorting out ground level video pictures with an airborne picture. In 2008 IEEE International Conference on Robotics and Automation, pages 551–556, May 2008.
- S. Leutenegger, M. Chli, and R. Siegwart. Vivacious: Binary solid invariant adaptable keypoints. In Proc. of the IEEE Intl. Conf. on Computer Vision (ICCV), 2011.
- P. Lottes, J. Behley, N. Chebrolu, A. Milioto, and C. Stachniss. Joint stem exposure and harvest weed depiction for plant-express treatment in exactness creating. In Proceedings of the IEEE/RSJ Int. Conf. on Intelligent Robots and Systems (IROS), 2018.
- D.G. Lowe. Explicit Image Features from Scale-Invariant Keypoints. Intl. Diary of Computer Vision (IJCV), 60(2):91–110, 2004.