IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 7, May 2023

Smart Farming Application using Machine Learning Algorithm

Dr. K. B. Khanchandani, Shreya Gaikwad, Shraddha Bhore, Prem Hargunani, Atharva Joshi
Department of Electronics and Telecommunication
Shri Sant Gajanan Maharaj College of Engineering, Shegaon

Abstract: *The impact of climate change in India has been severe, especially on agricultural crops. Over the last two decades, many crops have seen a drastic decrease in yield, making it difficult for farmers to make a living. This has had a wide-reaching effect on the Indian economy, as agricultural products are a major source of income and employment. As a result, policy makers and farmers are looking for ways to improve the yield of crops. One potential solution is to predict the yield of a crop before it is harvested. With accurate predictions, policy makers and farmers could take appropriate measures for marketing and storage. This would help them to adjust and plan for the changing climate. Technologies such as satellite imaging, remote sensing, and on-site sensors can be used to monitor crop growth and make predictions about yield. Furthermore, the use of weather forecasts, farm management software, and data analysis can be used to optimize crop production. These technologies can provide valuable information about soil and water conditions, pest control, and weather patterns that can help farmers make decisions about when to plant and harvest. In conclusion, climate change is having a serious impact on the performance of agricultural crops in India. In order to increase crop yields, policy makers and farmers must take advantage of new technologies to make predictions and optimize production. As the climate continues to change, making accurate predictions is becoming increasingly important for farmers and agricultural workers. With reliable predictions, farmers can make adjustments to their practices in order to continue to provide for their communities and ensure the safety of their crops. By making adjustments, they can be prepared for the changing weather patterns and other environmental factors, allowing them to better meet the needs of their local population. Agriculture is an essential part of many communities, and with the changing climate, it is important to be able to predict and adjust to the environmental conditions. Accurate predictions provide farmers with the information they need to make the right decisions and take action to protect their crops and communities. This can be achieved through a combination of predictive models, data collection and analysis, and other technologies. By using this combination of tools, farmers can have a better understanding of the changing climate and how it will affect their operations. With this information, they can adjust their practices to better accommodate the changes and improve the lives of everyone involved. This can include taking steps to protect their crops from weather-related damage, improving soil quality and fertility, and reducing the impact of pests and diseases. By making these adjustments, farmers can ensure the success of their operations and that their communities have access to the food, resources, and livelihoods they need. Ultimately, more accurate predictions can help farmers protect their crops, their communities, and the environment*

Keywords: Precision farming

REFERENCES

[1]. P.Priya, U.Muthaiah M.Balamurugan.Predicting yield of the crop using machine learning algorithm. International Journal of Engineering Science Research Technology.

[2]. J.Jeong, J.Resop, N.Mueller and team.Random forests for global and regional crop yield prediction.PLoS ONE Journal.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 7, May 2023

[3]. Narayanan Balkrishnan and Dr. Govindarajan Muthukumarasamy.Crop production Ensemble Machine Learning model for prediction. International Journal of Computer Science and Software Engineering (IJCSSE).

[4]. S.Veenadhari, Dr. Bharat Misra, Dr. CD Singh.Machine learning approach for forecasting crop yield based on climatic parameters. International Conference on Computer Communication and Informatics (ICCCI).

[5]. Shweta K Shahane , Prajakta V Tawale.Prediction On Crop Cultivation. IInternational Journal of Advanced Research in Computer Science and Electronics Engineering (IJARCSEE) Volume 5, Issue 10, October 2016.

[6]. D Ramesh ,B Vishnu Vardhan. Analysis Of Crop Yield Prediction Using Data Mining Techniques. IJRET: International Journal of Research in Engineering and Technology.

[7]. Subhadra Mishra,Debahuti Mishra, Gour Hari Santra. Applications of Machine Learning Techniques in Agricultural Crop Production. Indian Journal of Science and Technology, Vol 9(38), DOI:10.17485/ijst/2016/v9i38/95032, October 2016.

[8]. Konstantinos G. Liakos,Patrizia Busato,Dimitrios Moshou, Simon Pearson ID,Dionysis Bochtis. Machine Learning in Agriculture. Lincoln Institute for Agri-food Technology (LIAT), University of Lincoln, Brayford Way, Brayford Pool,Lincoln LN6 7TS, UK, spearson@lincoln.ac.uk.

[9]. Baisali Ghosh. A Study to Determine Yield for Crop Insurance using Precision Agriculture on an Aerial Platform. Symbiosis Institute of Geoinformatics Symbiosis International University 5th & 6th Floor, Atur Centre, Gokhale Cross Road, Model Colony, Pune – 411016.

[10]. Jig Han Jeong, Jonathan P. Resop, Nathaniel D. Mueller, David H. Fleisher ,Kyungdahm Yun, Ethan E. Butler,Soo-Hyung Kim. Random Forests for Global and Regional Crop Yield Predictions. Institute on the Environment, University of Minnesota, St. Paul, MN 55108, United States of America.

[11]. Ecochem Online. (2009). Soil Health and Crop yields. Last modified January 28th 2009.Retrieved on March 4th 2009 from http://ecochem.com/healthy_soil.html

[12]. Food and Agricultural Organization. (2006). The state of Agricultural Commodity Markets. 37-39.

[13]. Aditya Shastry, H.A Sanjay And E.Bhanushree,"Prediction of crop yield using Regression Technique", International Journal of computing r12 (2):96- 102 2017,ISSN:1816-914] E.14]E. Manjula , S. Djodiltachoumy,"A Model for Prediction of Crop Yield",M. Young, *The Technical Writer's Handbook*, Mill Valley, CA: University Science, 1989. International Journal of Computational Intelligence and Informatics, Vol. 6: No. 4, March 2017

[14]. Mrs.K.R.Sri Preethaa, S.Nishanthini, D.SanthiyaK.Vani Shree ,"CropYield Prediction",International Journal On Engineering Technology and Sciences – IJETS™ISSN(P): 2349-3968, ISSN (O):2349-3976 Volume III,Issue III, March- 2016

[15]. Jharna Majumdar, Sneha Naraseeyappa and Shilpa Ankalaki, "Analysis of agriculture data using data mining techniques: application of big data"Majumdar et al. J Big Data (2017) 4:20 DOI 10.1186/s40537-017-0077-4

[16]. D. Ramesh and B. Vardhan, "Analysis of crop yield prediction using data mining techniques", International Journal of Research in Engineering and Technology, vol. 4, no. 1, pp. 47-473, 2015.

[17]. Yethiraj N G , " Applying data mining techniques in the field of Agriculture and allied sciences", Vol 01, Issue 02, December 2012.

[18]. Zelu Zia (2009). An Expert System Based on Spatial Data Mining used Decision Tree for Agriculture Land Grading. Second International Conference on Intelligent Computation Technology and Automation.Oct10-11,China