

Farmer's Friend: An AI Model to Predict Crop Yield and Provide Suggestion

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Abstract: *A framework for agricultural yield forecasting and fertilizer suggestion is amongst the most critical demands of the moment. Water shortages as well as other soil degradation have grown increasingly prevalent in recent years, causing enormous loss of human life and livelihood all across the world. Crop output unpredictability has increased as a result of increasing incidences of global climate change and fluctuating weather. Due to the unpredictability, agricultural productivity has likewise been difficult to anticipate. This necessitates the development of a crop yield forecast and fertilizer suggestion method, which has been accomplished in this research article with minimal error. As a result, in order to improve the process of agricultural production prediction, this study examines the deployment of machine learning technologies. Linear clustering, Artificial Neural Networks, and Decision Making are all used in this research's technique. The technique has been assessed for the existence of any errors that have resulted in good operational outcomes.*

Keywords: Linear Clustering, Artificial Neural Network, and Decision Making, etc.

REFERENCES

- [1]. S. Puengsungwan and K. Jirasereeamornkul, "Internet of Things (IoT) based hydroponic lettuce farming with solar panels," 2019 International Conference on Power, Energy and Innovations (ICPEI), 2019, pp. 86-89, doi: 10.1109/ICPEI47862.2019.8944986.
- [2]. D. Sunehra and M. Srinidhi, "Implementation of Smart Urban Farming using Raspberry Pi, Arduino and Node-RED Platform," 2020 IEEE International Conference for Innovation in Technology (INOCON), 2020, pp. 1-6, doi: 10.1109/INOCON50539.2020.9298357.
- [3]. B. Ban, J. Lee, D. Ryu, M. Lee and T. D. Eom, "Nutrient Solution Management System for Smart Farms and Plant Factory," 2020 International Conference on Information and Communication Technology Convergence (ICTC), 2020, pp. 1537-1542, doi: 10.1109/ICTC49870.2020.9289192.
- [4]. T. Xiong and S. Wang, "Intelligent farm management and control system based on Raspberry Pi," 2019 IEEE 3rd Advanced Information Management, Communicates, Electronic and Automation Control Conference (IMCEC), 2019, pp. 1286-1290, doi: 10.1109/IMCEC46724.2019.8983869.
- [5]. N. Islam, B. Ray and F. Pasandideh, "IoT Based Smart Farming: Are the LPWAN Technologies Suitable for Remote Communication?" 2020 IEEE International Conference on Smart Internet of Things (SmartIoT), 2020, pp. 270-276, doi: 10.1109/SmartIoT49966.2020.00048.
- [6]. S. R. V. G. K. M and L. J. K., "Intelligent Farming using Delta Robot," 2020 International Conference on Power, Energy, Control and Transmission Systems (ICPECTS), 2020, pp. 1-5, doi: 10.1109/ICPECTS49113.2020.9337002.
- [7]. N. Bore et al., "AGWS: Blockchain-enabled Small-scale Farm Digitization," 2020 IEEE International Conference on Blockchain and Cryptocurrency (ICBC), 2020, pp. 1-9, doi: 10.1109/ICBC48266.2020.9169450.
- [8]. H. chung, D. kim, S. lee and S. Cho, "Smart Farming Education Service based on u-learning environment," 2019 21st International Conference on Advanced Communication Technology (ICTACT), 2019, pp. 471-474, doi: 10.23919/ICTACT.2019.8701949.



- [9]. H. P. Thakor and S. Iyer, "Development and Analysis of Smart Digi-farming Robust Model for Production Optimization in Agriculture," 2019 6th International Conference on Computing for Sustainable Global Development (INDIACom), 2019, pp. 461-465.
- [10]. X. Jiang et al., "Wireless Sensor Network Utilizing Flexible Nitrate Sensors for Smart Farming," 2019 IEEE SENSORS, 2019, pp. 1-4, doi: 10.1109/SENSORS43011.2019.8956915.