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Crop Yield Prediction based on Indian Agriculture using Machine Learning

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Abstract: In India, we all know that Agriculture is the backbone of the country. This paper predicts the yield of almost all kinds of crops that are planted in India. This script makes novel by the usage of simple parameters like State, district, season, area and the user can predict the yield of the crop in which year he or she wants to. The paper uses advanced regression techniques like Kernel Ridge, Lasso and ENet algorithms to predict the yield and uses the concept of Stacking Regression for enhancing the algorithms to give a better prediction. To be precise and accurate in predicting crop yield and deliver the end user with proper recommendations about required fertilizer ratio based on soil parameters.

Keywords: Crop Prediction

REFERENCES

- [1]. "data.gov.in." [Online]. Available: https://data.gov.in/
- **[2].** Ananthara, M. G., Arunkumar, T., & Hemavathy, R. (2013, February). CRY—an improved crop yield prediction model using bee hive clustering approach for agricultural data sets. In 2013 InternationalConference on Pattern Recognition, Informatics and MobileEngineering (pp. 473-478). IEEE.
- [3]. Awan, A. M., & Sap, M. N. M. (2006, April). An intelligent system based on kernel methods for crop yield prediction. In Pacific-AsiaConference on Knowledge Discovery and Data Mining (pp. 841-846). Springer, Berlin, Heidelberg.
- [4]. Bang, S., Bishnoi, R., Chauhan, A. S., Dixit, A. K., & Chawla, I. (2019, August). Fuzzy Logic based Crop Yield Prediction using Temperature and Rainfall parameters predicted through ARMA, SARIMA, and ARMAX models. In 2019 Twelfth International Conference onContemporary Computing (IC3) (pp. 1-6). IEEE.
- [5]. Bhosale, S. V., Thombare, R. A., Dhemey, P. G., & Chaudhari, A. N. (2018, August). Crop Yield Prediction Using Data Analytics and Hybrid Approach. In 2018 Fourth International Conference on ComputingCommunication Control and Automation (ICCUBEA) (pp. 1-5). IEEE.
- [6]. Gandge, Y. (2017, December). A study on various data mining techniques for crop yield prediction. In 2017 International Conferenceon Electrical, Electronics, Communication, Computer, and OptimizationTechniques (ICEECCOT) (pp. 420-423). IEEE.
- [7]. Gandhi, N., Petkar, O., & Armstrong, L. J. (2016, July). Rice crop yield prediction using artificial neural networks. In 2016 IEEE TechnologicalInnovations in ICT for Agriculture and Rural Development (TIAR) (pp. 105-110). IEEE.
- [8]. Gandhi, N., Armstrong, L. J., Petkar, O., & Tripathy, A. K. (2016, July). Rice crop yield prediction in India using support vector machines. In 2016 13th International Joint Conference on Computer Science and Software Engineering (JCSSE) (pp. 1-5). IEEE.
- [9]. Gandhi, N., Armstrong, L. J., & Petkar, O. (2016, July). Proposed decision support system (DSS) for Indian rice crop yield prediction. In 2016 IEEE Technological Innovations ICT for Agriculture and Rural Development (TIAR) (pp. 13-18). IEEE.

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- [10]. Islam, T., Chisty, T. A., & Chakrabarty, A. (2018, December). A Deep Neural Network Approach for Crop Selection and Yield Prediction in Bangladesh. In 2018 IEEE Region 10 Humanitarian Technology Conference (R10-HTC) (pp. 1-6). IEEE.
- [11]. Jaikla, R., Auephanwiriyakul, S., & Jintrawet, A. (2008, May). Rice yield prediction using a support vector regression method. In 2008 5th International Conference on Electrical Engineering/Electronics, Computer, Telecommunications and Information Technology (Vol. 1, pp. 29-32). IEEE.
- [12]. Kadir, M. K. A., Ayob, M. Z., & Miniappan, N. (2014, August). Wheat yield prediction: Artificial neural network based approach. In 2014 4th International Conference on Engineering Technology and Technopreneuship (ICE2T) (pp. 161-165). IEEE.