LITERATURE SURVEY ON

ESTIMATE THE CROP YEILD USING DATA ANALYTICS

Domain: Data Analytics

Team id: PNT2022TMID29629

Batch no: B7-1A3E

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Paper 1: Crop Yield Prediction Using Deep Neural Networks.

Publication year: Aug 2022.

Author name: Akash Malviya, Prof. Dilip Singh Solanki.

Journal name: International Journal for Research in Applied Science & Engineering Technology (IJRASET).

Summary: In this paper, a deep neural network approach has been proposed along with the discrete wavelet transfrom to forecast crop yields. The wavelet transform has been used as a filtering technique to remove local disturbances from the data, and deep neural networks have been used for pattern recognition and forecasting. The evaluation of the proposed system has been evaluated in terms of the mean absolute percentage error, accuracy and regression. It has been found that the proposed work outperforms existing baseline techniques in terms of the accuracy of forecasting.

Methodology used: crop yield forecasting, discrete wavelet transforms, deep neural networks, mean absolute percentage error, accuracy.

Paper 2: Crop Yield and Price Prediction System for Agriculture Application

Publication year: 07, July-2022.

Author name: Prameya R Hegde, Ashok Kumar A R.

Journal name: International Journal of Engineering Research & Technology (IJERT).

Summary: In this paper, the webpage is built using the Python Flask framework. Back end predictive model is designed using machine learning algorithms. developing a predictive model includes the collection of data, data cleaning, building a model, validation, and deployment. The aim is to provide a user-friendly interface for farmers and this model should predict crop yield and price value accurately for the provided real-time values.

Methodology used: Data Acquisition: Three different types of data were gathered. The Dataset used for the experiment in this research is originally collected from the Kaggle repository and data.gov.in

Paper 3: Deep learning for crop yield prediction: a systematic literature review.

Publication year: 19 January 2022.

Author name: Alexandros Oikonomidisa, Cagatay Catalb and Ayalew Kassahuna.

Journal name: New Zealand Journal of Crop and Horticultural Science.

Summary: In this paper, the aims to provide an overview of the state-of-the-art application of Deep Learning in crop yield prediction. We performed a Systematic Literature Review (SLR) to identify and analyze the most relevant papers. One of the most important challenges is the lack of a large training dataset and thus, the risk of overfitting and as a result, lower model performance in practice. For researchers in this field, it is valuable to indicate the current challenges and the possibility for further research, because they tend to focus on the importance of missing research topics.

Methodology used: Crop yield prediction; deep learning; systematic literature review; machine learning; precision agriculture.

Paper 4: Crop Yield Prediction using Different Machine Learning Techniques.

Publication year: May-June-2021.

Author name: Pallavi Shankarrao Mahore, Dr. Aashish A. Bardekar.

Journal name: International Journal of Scientific Research in Computer Science, Engineering and Information Technology.

Summary: In this paper, soil and weather parameters such as soil type, soil fertility, maximum temperature, minimum temperature, rainfall is used to identify suitable crops for specified farm or land.

Paper 5: Crop yield Prediction Using Machine Learning Algorithm.

Publication year: August 2020.

Author name: Nikita S.Sapike, Prof.S.S.Sambare.

Journal name: Journal of Emerging Technologies and Innovative Research (JETIR).

Summary: In this paper, an Association Rule Mining technique integrating features of the Eclat algorithm and Genetic algorithm into the proposed method. The idea is to use the eclat technique of association rule mining to create rules and to use genetic algorithms to further refine those rules.

Methodology used: Apriori algorithm, classification, Association Rule Mining technique, Machine Learning

Paper 6: Prediction of Soil and Crop Yield by Big Data Analysis

Publication year: May – June 2020.

Author name: Venkata Chennareddy, Ramanayagam S.

Journal name: International Journal of Scientific Research and Engineering Development (IJSRED).

Summary: In this paper, the proposed approach is to give farmers instructions on other crops that are suitable for their land conditions in the area. Various data mining techniques can be used and evaluated in agriculture to predict future crop production. Various classification algorithms are applied to assess soil fertility. This paper focuses on the classification of soil fertility rate using K-Means, Random Tree and Apriori.

Methodology used: The statistical method K-means clustering algorithm technique and data mining method namely Random Tree and Apriori algorithm were taken up for the estimation of crop yield analysis.

Paper 7: Estimation of Major Agricultural Crop with Effective Yield Prediction using Data Mining.

Publication year: May 2019.

Author name: Rajesh Kumar Maurya, Sanjay Kumar Yadav, Tarun Kumar Sharma.

Journal name: International Journal of Innovative Technology and Exploring Engineering (IJITEE).

Summary: In this paper, the most difficult task is to bring meaningful information and knowledge out of the raw agricultural data. Data mining can tailor data knowledge to estimate the crop yield. The aim of this research paper is to estimate crop yield by implementing data mining techniques.

Methodology used: Statistical Approaches, DM Technique, production estimation, tracking patterns, Classification, Cluster based Analysis, Linear regression Analysis (LRA), Multiple Regression Analysis (MRA) using SPSS.

Paper 8: Agriculture Data Analytics in Crop Yield Estimation: A Critical Review.

Publication year: 3, December 2018.

Author name: B M Sagar, Cauvery N K.

Journal name: Indonesian Journal of Electrical Engineering and Computer Science.

Summary: This paper study gives insights on various data analytics methods applied to crop yield prediction and also signifies the important lacunae points in the proposed area of research.

Methodology used: Agriculture data Crop yield Data analytics Prediction Smart farming.

Paper 9: Analysis of Crop Yield Prediction Using Data Mining Technique to Predict Annual Yield of Major Crops.

Publication year: Dec 2018.

Author name: B. Devika, B. Ananthi.

Journal name: International Research Journal of Engineering and Technology (IRJET).

Summary: In this paper, to predict the crop yield with the help of data mining technique, advanced methods can be introduced to predict crop yield and it also helps the farmer to choose the most suitable crop, thereby improving the value and gain of the farming area.

Methodology used: Data Mining, Classification, Crop Yield, Accuracy, K-Nearest Neighbor (KNN), Linear Regression

Methodology used: Agriculture, Crop Yield, Random Forest, Support Vector Machine, Weather, K Nearest neighbor.

Paper 10: Analysis of Crop Yield Prediction Using Data Mining Techniques.

Publication year: Jan-2015.

Author name: D Ramesh, B Vishnu Vardhan.

Journal name: International Journal of Research Engineering and Technology (IJRET).

Summary: This paper presents a brief analysis of crop yield prediction using Multiple Linear Regression (MLR) technique and Density based clustering technique for the selected region i.e., East Godavari district of Andhra Pradesh in India.

Methodology used: The statistical method namely Multiple Linear Regression technique and Data Mining method namely Density-based clustering technique.

TITLE	AUTHOR	YEAR	CONCEPT OF THE PAPER	TECHNIQUES USED
Crop Yield Prediction Using Deep Neural Networks.	Akash Malviya, Prof. Dilip Singh Solanki.	2022	In this paper, a deep neural network approach has been proposed along with the discrete wavelet transfrom to forecast crop yields.	Deep neural networks
Crop Yield and Price Prediction System for Agriculture Application	Prameya R Hegde, Ashok Kumar A R.	2022	In this paper, the webpage is built using the Python Flask framework. Back end predictive model is designed using machine learning algorithms.	Python Flask, Machine learning algorithm
Deep learning for crop yield prediction: a systematic literature review.	Alexandros Oikonomidisa, Cagatay Catalb and Ayalew Kassahuna.	2022	In this paper, the aims to provide an overview of the state-of-the-art application of Deep Learning in crop yield prediction.	Deep learning algorithm
Crop Yield Prediction using Different Machine Learning Techniques.	Pallavi Shankarrao Mahore, Dr. Aashish A. Bardekar.	2021	In this paper, soil and weather parameters such as soil type, soil fertility, maximum temperature, minimum temperature, rainfall is used to identify suitable crops for specified farm or land.	Machine learning techniques

Crop yield Prediction Using Machine Learning Algorithm.	Nikita S.Sapike, Prof.S.S.Sambare.	2020	In this paper, an Association Rule Mining technique integrating features of the Eclat algorithm and Genetic algorithm into the proposed method.	Machine learning algorithm
Prediction of Soil and Crop Yield by Big Data Analysis	Venkata Chennareddy, Ramanayagam S.	2020	In this paper, the proposed approach is to give farmers instructions on other crops that are suitable for their land conditions in the area.	Big data Analytics
Estimation of Major Agricultural Crop with Effective Yield Prediction using Data Mining.	RajeshKumar Maurya, Sanjay KumarYadav, Tarun Kumar Sharma.	2019	The aim of this research paper is to estimate crop yield by implementing data mining techniques.	Data Mining
Agriculture Data Analytics in Crop Yield Estimation: A Critical Review.	B M Sagar, Cauvery N K.	2018	This paper study gives insights on various data analytics methods applied to crop yield prediction and also signifies the important lacunae points in the proposed area of research.	Data Analytics
Analysis of Crop Yield Prediction Using Data Mining Technique to Predict Annual Yield of Major Crops.	B. Devika, B. Ananthi.	2018	In this paper, to predict the crop yield with the help of data mining technique, advanced methods can be introduced to	Data Mining

			predict crop yield and it also helps the farmer to choose the most suitable crop, thereby improving the value and gain of the farming area.	
Analysis of Crop Yield Prediction Using Data Mining Techniques.	D Ramesh, B Vishnu Vardhan.	2015	This paper presents a brief analysis of crop yield prediction using Multiple Linear Regression (MLR) technique and Density based clustering technique for the selected region i.e. East Godavari district of Andhra Pradesh in India.	Data Mining