



IJIRCCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 11, Special Issue 1, February 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.165

9940 572 462

6381 907 438

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www.ijircce.com

Estimation of Crop Yield Using Data Analytics

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ABSTRACT: Farming sector in Republic of India is facing rigorous downside to maximise the crop productivity. over sixty % of the crop still depends on monsoon downfall. Recent developments in info Technology for agriculture field has become a stimulating analysis space to predict the crop yield. {the downside|the matter} of yield prediction may be a major problem that is still to be resolved supported offered knowledge. data processing techniques square measure the higher selections for this purpose. totally different data processing techniques square measure used and evaluated in agriculture for estimating the long run year's crop production. This paper presents a short analysis of crop yield prediction victimisation Multiple simple regression (MLR) technique and Density based mostly cluster technique for the chosen region i.e. East Godavari district of Andhra Pradesh in Republic of India. Key Words: data processing , MLR ,Cluster technique.

KEYWORDS: Smart Industry, IBM cloud, IBM cloudant DB, IBM platform, DATA ANALYTICS device.

I. INTRODUCTION

In gross domestic product of Republic of India, additional that nineteen share is from Agriculture. Agriculture is initial and foremost issue that is very important for survival. Machine learning (ML) might be an important perspective for effort real-world and operative answer for crop yield issue. Considering the current system together with manual reckoning, climate sensible pesterer management and satellite representational process, the result obtained are not extremely correct. This paper focuses chiefly on predicting the yield of the crop by applying varied machine learning techniques. Human survival depends on agriculture as a result of it provides basic desires. Indian agriculture makes up over 1/2 the population (55%) and is standard. There ar bottlenecks to increasing crop production in Republic of India as a result of weather conditions vary. it's become progressively troublesome to realize target crop yields in business enterprise. it's necessary to think about variety of things that directly have an effect on the assembly and productivity of crops. In agriculture, crop yield prediction is a vital issue. So, it's vital to analyse the Crop Production knowledge of Indian Agriculture market. This project is aimed to form fruitful visualisation exploitation Cognos Analytics on cloud for aforesaid knowledge. during this project prediction is completed to search out the insights from Crop Production knowledge of Indian market.

II. OBJECTIVE

The most objectives are;

- To get most correct estimation of crop yield
- To estimate financial gain victimization IBM COGNOS.
- To determine crop production in Asian nation.
- To show higher call for farming.

III. LITERATURE REVIEW

Dhivya B H, Manjula R, Hindu deity Bharathi S, Madhumathi R. A Survey on Crop Yield Prediction supported Agricultural info, International Journal of Innovative analysis in Science, Engineering and Technology. 2017; 6(3). The industrials wastes generated from altogether completely different operation performed by varied industries unit perceptibly difficult. The wastes that unit generated from the assorted industries contains the property like acidity, suspended waste solids, alkalinity, inorganic solids, soma and dissolved organics all the on prime of wastages and chemicals unit gift among the domestic waste normally. of those unwanted water wastes cannot be treated as in same technique as treating the normal domestic waste waste merely. To treat of those waste discharged by altogether completely different factories in waste wants specifically designed sequence of ways.

The water quality instrument that we have enforced checks the quality of water in real time through varied sensors (one for each parameter: pH, natural phenomenon, temperature) to measure the quality of water. The ZigBee module among the system transfers info collected by the time 5 sensors to the microcontroller wirelessly, and a GSM module transfers wirelessly the knowledge faraway from the microcontroller to the nice phone/PC. The system to boot has proximity sensors to alert the officers by effort a message to them via the GSM module simply just in case someone tries to contaminate the water body. this method can keep a strict check on the pollution of the water resources associated be ready to offer AN surroundings for safe liquid. this text investigates water quality look systems through wireless device networks. look water standards may well be a sophisticated technique as a result of it's several laboratory testing ways and is time overwhelming. to beat this drawback, period of time look of water prosperity through the utilization of IoT has been projected. internet of Things along with GSM meter and device for efficiency, management water quality. Here we've a bent to run a system to watch water quality through altogether completely different sensors - cloudiness, pH, temperature, natural phenomenon and water level moreover. The controller accesses the data controlled by exploitation sensors.

Description: The approach of exploitation multispectral remote sensing (RS) to estimate soil accessible nutrients (SANs) has been recently developed and shows promising results. this method overcomes the constraints of sometimes used ways by building a math model that connects RS-based crop growth and nutrient content. However, the stableness and accuracy of this model want improvement. throughout this text, we've a bent to replaced the math model by integration the world Food Studies (WOFOST) model and datum of remote sensing (TRS) observations to substantiate stability and accuracy. datum of HJ-1 A/B info was assimilated into the WOFOST model to extrapolate crop growth simulations from one purpose to AN outsize area using a particular assimilation technique. as a results of nutrientlimited growth among the season is required and conjointly the SAN parameters can exclusively be used at the highest of the season among the initial model, the WOFOST model was modified. Notably, the calculation order was changed, and new soil nutrient uptake algorithms were enforced among the model for nutrient-limited growth estimation. Finally, experiments were conducted among the spring maize plots of Hongxing Farm to analyze the results of nutrient stress on crop growth.

IV. PLANNED TECHNIQUE

This system projected on basis of knowledge analytics . information analytics approaches square measure utilized in several fields, starting from supermarkets to guage the behavior of consumers to the prediction of customers' phone use. Machine learning is additionally being employed in agriculture for many years. Crop yield prediction is one amongst the difficult issues in exactitude agriculture, and lots of models are projected and valid thus far. This drawback needs the employment of many datasets since crop yield depends on many various factors like climate, weather, soil, use of plant food, and seed selection. this means that crop yield prediction isn't a trivial task; instead, it consists of many difficult steps. Nowadays, crop yield prediction models will estimate the particular yield fairly, however a higher performance in yield prediction remains fascinating.

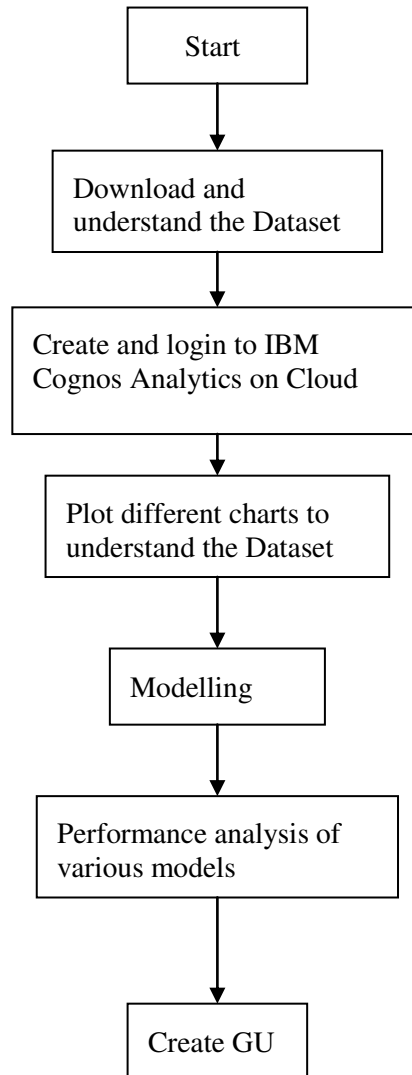


Fig. 1 Flow Chart

V. PROJECT SUMMARY

In GDP of Bharat, additional that nineteen share is from Agriculture. Agriculture is 1st and foremost issue that is vital for survival. Machine learning (ML) may be an important perspective for deed real-world and operative resolution for crop yield issue. Considering this system together with manual numeration, climate good blighter management and satellite mental imagery, the result obtained arent extremely correct. This paper focuses chiefly on predicting the yield of the crop by applying numerous machine learning techniques.

VI. PURPOSE

Human survival depends on agriculture as a result of it provides basic desires. Indian agriculture makes up over 1/2 the population (55%) and is standard. There area unit bottlenecks to increasing crop production in Bharat as a result of climate vary. it's become more and more tough to attain target crop yields in commercial enterprise. it's necessary to contemplate variety of things that directly have an effect on the assembly and productivity of crops. In agriculture, crop yield prediction is a vital issue. So, it's necessary to analyse the Crop Production information of Indian Agriculture market. This project is aimed to form fruitful visualisation exploitation Cognos Analytics on cloud for aforesaid information. during this project prediction is finished to seek out the insights from Crop Production information of Indian market.

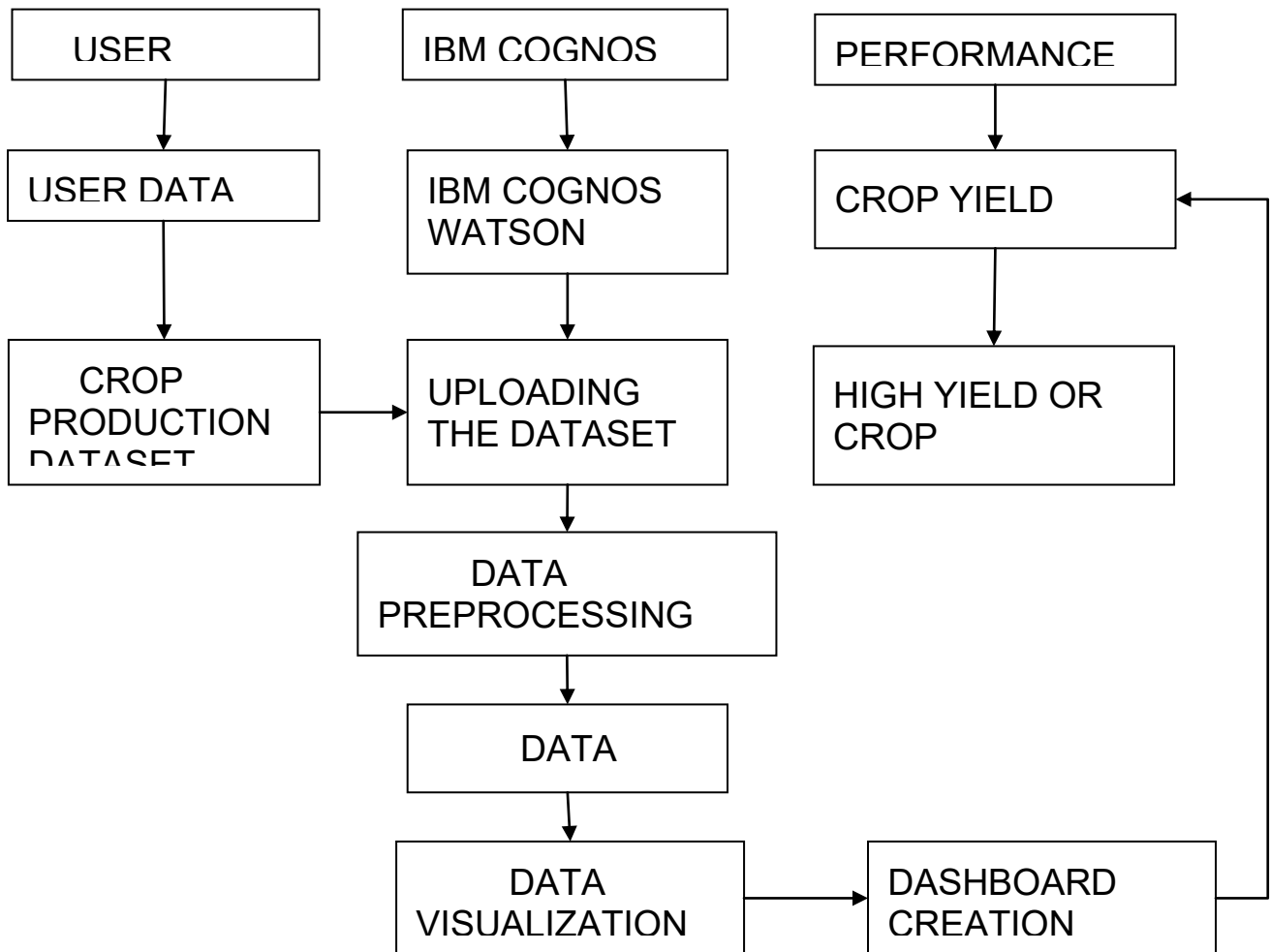


Fig 2 Block Diagram

VII. IDEATION

Crop yield will vary with places, season, area, etc. Farmers face heaps of losses because of poor coming up with and improper planting of crops. so as to fulfill the food demand of a growing population, we tend to square measure presently in dire would like of another revolution. Globally, there's a decrease in tillable land and a decrease in tillable water resources, creating it nearly not possible to report higher crop yields. Agro-based huge information analytics plays a major role in increasing crop yields by providing the optimum conditions for plants to grow, reducing yield gaps, and reducing crop injury. As a result, during this project we are going to be making a dashboard and analysing some necessary visualizations to achieve additional insight into India's crop production. supported the prediction, farmers will set up their harvest and sale for the harvest. It helps them to avoid wasting cash and increase their financial gain.

VIII. PREPARING INFORMATION SET

The demo informationset is currently equipped to machine learning model on the idea of this data set the model is trained. each new detail stuffed at the time of form acts as a take a look at information set. once the operation of testing, model prediction primarily based upon the reasoning it concludes on the idea of the coaching information sets. Satellite mental imagery (Remote Sensing Data), has been wide used for predicting crop yield. This dataset is collected exploitation the sensors mounted on satellites or planes, that observe the energy (electromagnetic waves), mirrored or diffracted from surface of the planet. Remote sensing information encompasses a ton of energy bands to supply, however primarily solely few of them are used for crop yield prediction. Yet, there are some those who have tried generating relevant options exploitation the bands that are usually unheeded, and that they are triple-crown with up



results thereupon. just in case of this dataset, most of the people seldom explore the high-order moments of the options. supported these datasets folks have used algorithms like Regression models, Random Forest and Nearest Neighbor etc.

Scope

The scope of this project is to research a dataset of crop records for agricultural sector mistreatment machine learning technique. To distinctive crop predicting by farmer is harder. Watry to scale back this risk issue behind choice of the crop.

The input appears like previous photos it's seen before, the “image” reference signal ar progressing to be mixed into, or convolved with, the input. the following sign is then passed on to succeeding layer. So, the laptop understands every constituent. throughout this case, the white pixels unit said to be -1 whereas the black ones unit one. this is {often|this can be} often merely the suggests that it's enforced to differentiate the pixels in associate passing basic binary classification. very little patches of the pixels said as filters unit taken and it's matched with the corresponding shut locations to establish whether or not or not it's matched. By this, the Convolutional Neural Network can confirm the similarities than directly creating an effort to match the full image.

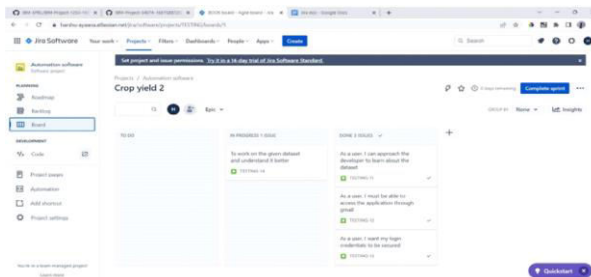


Fig. 3 Reports from jira

IX CODING & SOLUTIONING

The model used for the project is Random Forest. Random forests or random call forests is associate degree ensemble learning technique for classification, regression and alternative tasks that operates by constructing a large number of call trees at coaching time. For classification tasks, the output of the random forest is that the category chosen by most trees. For regression tasks, the mean or average prediction of the individual trees is came. Here Random Forest Regressor is employed. Following is that the code employed in the project.

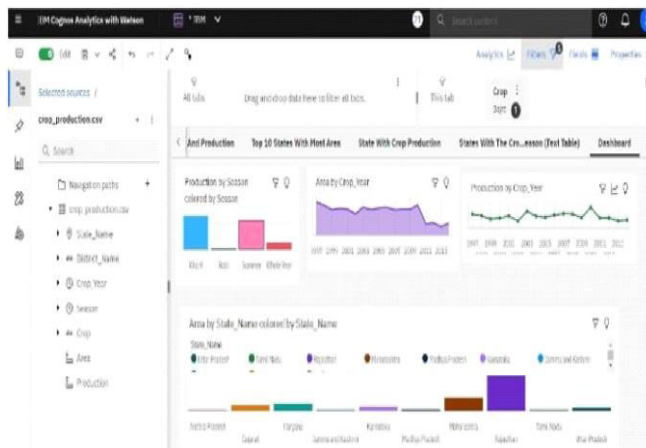


Fig.4 Output

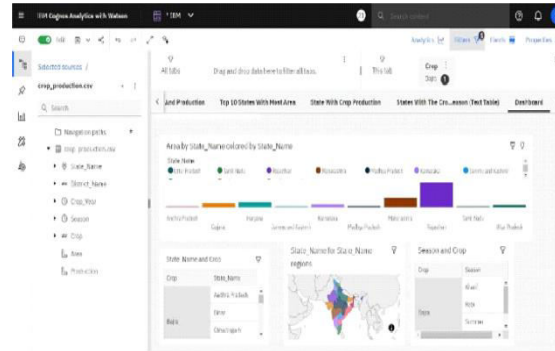


Fig.5 Manual

X. DATA SETS

Dataset supported lane dataset and user lane dataset is formed. The dataset includes form of sequences of images. These footage unit of measurement the forehead driving scenes on the highways. each sequence contains continuous frames collected in one second. to boost the dataset, the user can additionally label every ordinal image in each sequence. the higher the amount of sequences b the larger it expands the vary of the lane dataset.

XI. RESULT

The formula is utilized to see the video sequences in various environmental eventualities, in addition as daytime, high speed, night, rainy days, and so on. These scenes to boot embody corners, vehicle interference, occlusion, durable illumination, ground strip interference, and so on. The take a glance at results unit of measurement shown at intervals the figure.

XII. CONCLUSION

The analytical method started from knowledge improvement and process, missing worth, exploratory analysis and eventually model building and analysis. Finally we have a tendency to predict the crop exploitation machine learning rule with completely different results. This brings a number of the subsequent insights concerning crop prediction. As most varieties of crops are going to be coated underneath this method, farmer might get to grasp concerning the crop which can ne'er are cultivated and lists out all potential crops, it helps the farmer in higher cognitive process of that crop to cultivate. Also, this method takes into thought the past production of information which is able to facilitate the farmer get insight into the demand and therefore the value of assorted crops in market.

REFERENCES

- [1] Dhivya B H, Manjula R, Shiva Bharathi S, Madhumathi R. A Survey on Crop Yield Prediction supported AgriculturalData, International Journal of Innovative analysis in Science, Engineering and Technology. 2017; 6(3).
- [2] V.Badrinarayanan, A. Handa, and R. Cipolla, "SegNet: A deep convolutional encoder-decoder design for sturdy linguistics pel wise labelling," arXiv preprint arXiv: 1505.07293, 2019.
- [3] M. Cordts, M. Omran, S. Ramos, T. Rehfeld, M. Enzweiler, R. Benenson, U. Franke, S. Roth, and Schiele, "The cityscapes dataset for linguistics urban scene understanding," in Proc. of the IEEE Conference on pc Vision and Pattern Recognition (CVPR), 2019.

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SJIF Scientific Journal Impact Factor

Impact Factor: 8.165

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