

Ideation Phase

Define the Problem Statements

Date	19 September 2022
Team ID	PNT2022TMID49326
Project Name	Project - Fertilizers Recommendation System For Disease Prediction
Maximum Marks	2 Marks

Fertilizers Recommendation System For Disease Prediction

In India, The Agriculture industry is extremely vital and crucial for economic and social development and jobs. In India, the agricultural sector provides a living for almost 48% of the population. As per the 2019-2020 economic survey, an Indian farmer's median wage in 16 states is Rupees 2500. Most of the Indian population depends on agriculture for their livelihood. Agriculture gives an opportunity of employment to the village people to develop a country like India on large scale and give a push in the economic sector. And the outcomes for the farmer of choosing the wrong crop for land is moving towards metro city for livelihoods, suicide, quitting the agriculture and give land on lease to industrialist or use for the non-agriculture purpose. The outcome of wrong crop selection is less yield and less profit.



Literature survey

Title:

Data analytics for crop recommendation system

Author:

R.Patel

Year:

2016

Description:

Agriculture is becoming increasingly information and knowledge center today. Due to the large rural population, agriculture plays a vital role in Indian economy. In the current scenario, a large number of data is generated from various sources like weather, climate, crop production, consumed by stakeholders, location specific crop disease in farm practice. But it is not used effectively and optimally by the experts due to lack of information flow. Thus, to bridge the gap between users and information, data analytic can be one of the solution. Crop recommendation system model integrating with data analytic has been proposed. The system consist of components; web services, data analytic, and web application development. The weather and agriculture web services were built to interaction with various data sources. The web services are developed using in Net Beans IDE. Regression Analysis and Time Series Analysis are used to analyses the trends and pattern of agriculture Growth and Production. Crop Recommendation System is carried out for cotton crop in Ahmedabad District, Gujarat. The proto type is developed using MySQL, Java, NetBeans IDE, and RStudio.

Title:

CNN based leaf disease identification and remedy recommendation system

Author:

RA Shetty

Year:

2019

Description:

Agriculture is one field which has a high impact on life and economic status of human beings. Improper management leads to loss in agricultural products. Farmers lack the knowledge of disease and hence they produce less production. Kisan call centers are available but do not offer service 24*7 and sometimes communication too fail. Farmers are unable to explain disease properly on call need to analysis the image of affected area of disease. Though, images and videos of crops provide better view and agro scientists can provide a better solution to resolve the issues related to healthy crop yet it not been informed to farmers. It is required to note that if the productivity of the crop is not healthy, it has high risk of providing good and healthy nutrition. Due to the improvement and development in technology where devices are smart enough to recognize and detect plant diseases. Recognizing illness can prompt faster treatment in order to lessen the negative impacts on harvest. This paper therefore focus upon plant disease detection using image processing approach This work utilizes an open dataset of 5000 pictures of unhealthy and solid plants, where convolution system and semi supervised techniques are used to characterize crop species and detect the sickness status of 4 distinct classes.

Title:

Soil toxicity prediction and recommendation system using data mining in precision agriculture

Author:

G.Chillarge

Year:

2018

Description:

India is agricultural land. India ranks second worldwide in agriculture output, but GDP share is declining. There are many factors contribute for declining agriculture GDP which are inadequate irrigation, inadequate power supply, changing environmental conditions, conventional agricultural method etc. In this paper, the proposed system can help farmers by making them aware about their soil conditions. Farmers can maximize crops yield by knowing proportion of nutrients present in the soil. Soil toxicity affects the soil nutrients which indirectly affects crops health. The proposed system predicts the level of toxicity present in the soil and makes farmer aware about it. Many farmers are depending on rainfall which is the one of the factor for poor growth and decreases crops yield. Thus the proposed system recommends the farmer about the crop, fertility of soil, level of toxicity and water supply. For this recommendation system, sensor's accuracy is very important as well as classification algorithm. For classification, decision tree J48 algorithm is used which is simple to implement and having more accuracy as compared with other classification algorithms. Issue of power supply can be overcome by using solar panel system.

Title:

Optimised fertiliser suggestion in smart agriculture system based on fuzzy inference rule

Author:

K. Annapurani

Year:

2021

Description:

Rice crop is one of the major cultivating crops in India, especially in south India. Fertilizer plays an important role to achieve the highest rice yield. Each crop needs an adequate amount of fertilizer for its growth. Inadequate and overdose of fertilizer leads to nutrient deficiency and lesser yield of crops. Rice has a unique fertilizer recommendation based on climatic conditions and soil types but the issue is the random use of fertilizers by the farmer, without knowing their own land soil nutrition. Soil consists of primary nutrients and secondary nutrients. This supplement is used for crop growth. This paper discusses a proposed methodology of an optimized fertilizer simulation model for Cuddalore and Salem district and its sub talukas for rice and maize crops. In this research work, the fuzzy logic technique is used because this is one of the best ways for problem-solving techniques. In this fuzzy logic, Mamdani fuzzy logic-based tool is used. The Mamdani fuzzy logic tool is used for the suggestion of the fertilizers required according to the minerals present in their soil. In result total 45 rules are created for recommending the fertilizer use for paddy and maize crops.

Title:

ML based sustainable precision agriculture: A future generation perspective

Author:

D.Ramesh

Year:

2020

Description:

Agriculture is an essential source of survival and also accounts for the economic growth of any country. Rapid advancement in precision agriculture has helped agriculture and its ancillary enter into the era of machine learning and big data technologies. The advanced technology would help in the improvement in various dimensions of the agro-sector. The agro science community needs to create its architectural model to enjoy the advantages of parallel computing and storage management of large datasets, which would help to discover novel analytical structure to extract useful information from the data patterns. These patterns would help understand the field and various issues and also help in identifying the solutions to eradicate multiple problems. Machine learning offers favorable computational as well as analytical solutions for the integrated study of different types of datasets from various sources. This study introduces the core concept of machine learning and systematic processes to comprehend its application in agriculture. It also discusses various machine learning algorithms that can be utilized to build models to address various agricultural issues.



