

An Artificial Intelligence Based Recommendation System for Farmers in Agricultural Field IoT and Machine Learning

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Abstract: - Soils are astounding mixes of minerals, water, air, regular matter, and incalculable living creatures that are the spoiling gets by from once living things. Soils fill in as media for improvement of a wide scope of plants we can say soil is a significant element of farming. There are a couple of kinds of soils and every sort of soil can have different sorts of features and different kinds of yields create on different kinds of soils. We should realize which sort of our dirt is go better in our dirt. We can apply AI techniques to bunch soil and to expect the yield sensible.

Key Words: — *Soil arrangement, Land type, Chemical element, Geographical property, AI, KNN, SVM, and Regression.*

I. INTRODUCTION

There are so many soil strategies accessible in India. Every soil game plan have particular segment and every earth is fitting for different reap. On occasion or we can say each time it happens that farmer soil is best for some specific reap yet as he don't have even the remotest clue. The fundamental motivation driving the proposed work is to make a reasonable model for mentioning different sorts of soil approach information close by fitting yields ideas. Course of action are seen by AI procedures using diverse substance features and expected yields for that soil plan are proposed using geographical credits. Soil is one of the essential bits in commonplace field for yielding harvests. Soil request perspectives follow the presence data and valuable conditions. On the land surfaces of earth, social affair of soil makes a relationship between soil tests and different sorts of common component. The result of this exploration will result into significant decrease in the cost of these tests, which will save a great deal of endeavors and season of Indian soil testing research facilities.

II. LITERATURE SURVEY

Sk Al Zaminur Rahman, S.M. Mohidul Islam, Kaushik Chandra Mitra, "Soil Order using AI Techniques and Harvest Idea Dependent on Soil Arrangement" – In this paper we have proposed a model that can expect soil strategy with land type and as demonstrated by guess it can recommend reasonable yields. Two or three man-made insight assessments, for example, weighted k-Closest Neighbor (k-NN), Stowed Trees, and Gaussian part based Help Vector Machines (SVM)

are used for soil plan. Primer results show that the proposed SVM based strategy acts in a way that is better than many existing strategies.

Gholap, J., Ingole, A., Gohil, J., Gargade, S. likewise, Attar, V., 2012. Soil data assessment using portrayal methodology and soil trademark assumption. In this Paper agricultural assessment has been profited by particular advances like computerization, data mining. Today data mining is used in a colossal districts and various off-the-rack data mining structure things and zone express data mining application fragile items are available, yet data mining in agrarian soil datasets is a modestly a young investigation field.. It revolves around portrayal of soil using various counts available. Another huge expectation is to predict untested credits using backslide technique, and utilization of motorized soil test gathering.

Nidhi H Kulkarni, Dr. G N Srinivasan, Dr. B M Sagar, Dr. N K Cauvery, 2018. Improving Harvest Efficiency through A Yield Suggestion Framework Utilizing Esembling Method. – In this Paper, the esembling procedure is used to develop a model that joins the assumptions for different AI models together to propose the right gather subject to the earth express sort and characteristics with high precision. The free base understudies used in the outfit model are Arbitrary Backwoods, Guileless Bayes, and Direct SVM. Each classifier gives its own course of action of class marks with a commendable accuracy.

Abdullah Na, William Isaac, Shashank Varshney, Ekram Khan, "An IoT Based Framework for Far off Checking of Soil Attributes", This paper gives a high level cell phone based application which will measure the PH assessment of the earth, temperature and moisture persistently. The structure uses a microcontroller block, identifying square and correspondence block. Sensors are used in farm which can talk with phones using Bluetooth continuously. This paper gives techniques for distant examination of soil through various systems. This paper asked us to look for changed

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systems through which we can move the data we will get from sensors for planning and over the long haul creating the yield differences.

III. PROBLEM STATEMENT

At present there is no such a framework to discover crop and there illness so rancher get misfortune in cultivating and there isn't giving appropriate vainglory to rancher to take which crop on that whether our framework will handily discover the harvest by utilizing picture handling idea and AI idea we are gathering soil informational index to discover crop.. Henceforth, we proposed a framework Prediction of "An Artificial Intelligence Based Recommendation System for Farmers in Agricultural Field IoT and Machine Learning".

IV. EXISTING SYSTEM

The experts executed K-Means count to guess the pollution in the atmosphere. Classifying immense datasets stays an irksome and tangled endeavor with an additional presumption for updated execution makes it genuinely testing. There are a couple of systems wherein agrarian yield figure is done using fake neural association i.e. ANN. It is structures which can predict the more precision using meteorological data.

V. PROPOSED FRAMEWORK

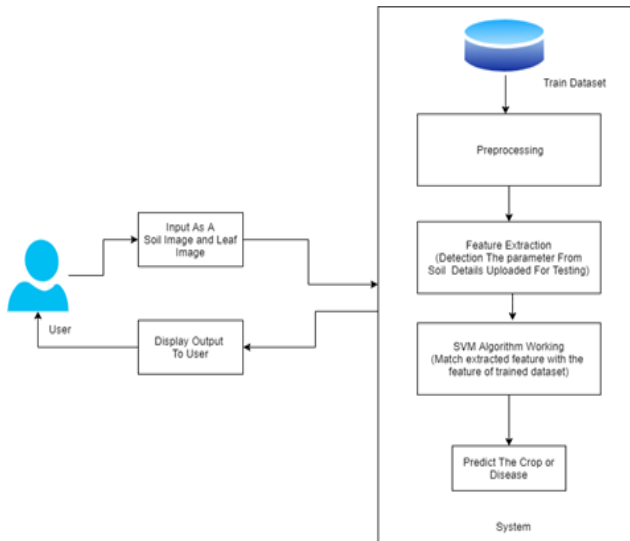


Fig.1. System Architecture

In this System, the datasets have been gathered and refined dependent on shared trait uses, for example, soil dampness, temperature, stickiness, vanishing, precipitation, daylight.

These informational collections should be gone into the data set.

Soil arrangement and land type join addresses the dirt class in the data set. The AI techniques are utilized to discover the dirt class (i.e. soil arrangement and land type). Three unique techniques are utilized: weighted K-NN, Gaussian Kernel based SVM, and Bagged Tree.

VI. ALGORITHMS

A. In K-Closest Neighbor (KNN)

The k-nearest neighbors (KNN) estimation is a clear, directed AI figuring that can be used to handle both request and backslide issues. It's not hard to complete and see, anyway has a critical detriment of ending up being in a general sense moves back as the size of that data being utilized creates.

B. Sponsorship Vector Machine (SVM)

SVM is a twofold classifier subject to controlled acknowledging which gives ideal execution over various classifiers. SVM masterminds between two classes by building up a hyperplane in high-dimensional component space which can be used for request.

VII. ADVANTAGES

- This venture gives soil arrangement.
- It likewise encourages rancher to choose which harvest is reasonable for that dirt.
- Assists with foreseeing the illness of the yield.
- Validation is given to the framework.
- Better comprehension of cultivating patterns in various territory Simple to foresee rops utilizing soil type.
- Simple to erect illnesses.

VIII. DISADVANTAGES

- They occasionally require more information. Yield may be less consistent if the correct data are not given.
- Lose due to wrong collect
- Waste of money

IX. CONCLUSION

A model is proposed for expecting soil plan and giving sensible gather yield thought to that specific soil. The model has been endeavored by applying various kinds of recreated insight calculation. Sacked tree and K-NN shows incredible accuracy yet among all the classifiers, SVM has given the most raised precision in soil gathering with less time. It gives

us more exactness when stood out from existing system and gives more benefit to farmers.

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