# Statistical Based Agricultural Data Analysis

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*Abstract—* This Paper is Basically applied to the Advancement in Farming by technological Evolution as the growth in Computing and information Assessment, Retrieval and Storage have provided vast amount of Data. Data mining Techniques have been extensively seed n large amount of Datasets and Variables. But the main challenge is to extract information from this data which results n various methodologies and techniques such as Data Mining that can easily provide Results and Conclusions. Data Mining is emerging research field in Agriculture crop yield analysis. In this paper our focus is on the applications of Data Mining techniques in agricultural field. Different Data Mining techniques are in use, such as HM, K-Nearest Neighbor(KNN), Decision Tree(DT) and Support Vector Machines(SVM) in Agricultural Data as a tool for mining. Different Data sets are evaluated and hence outcomes with Different Data Mining Techniques. This paper discusses a process model for analyzing data, and describes the support that provides for this model.

*Key words:* K-Nearest Neighbor (KNN), Support Vector Machines (SVM)

## I. INTRODUCTION

Data Mining is the Process of extracting and providing useful data from raw data sets and large data sets of information. it is the process of discovering previously unknown and potentially interesting patterns in large datasets. Data Mining Enhances the coherence and inter-operability of digital content of various datasets and supports efficient and effective archiving and reuse of knowledge in the domain of Indian Agriculture and rural livelihood development.it focuses on Knowledge Acquisition, Knowledge Organization, Knowledge Visualization techniques and technologies that can bridge the gap. Agricultural extension plays a key role n rising productivity by offering technical advice, helping farmers to identify problems and opportunities, sharing information. Agricultural extension is passing through a major transformation for various domestic and global reasons.

In this paper, users most valued access to market information, land records and information on rural development programmes. In the cooperative project, question-and-answer services, accounting, and farm management information were valued most. In the private company experiment, participating farmers valued various types of information on practices, productivity and climatic factors, and rural development programmes.

Different techniques were proposed for mining data over the years. A detailed and elaborated various Data Mining techniques were discussed. The main features of the information system includes data assessment retrieval facilities for users from any place in the statistical and detailed information form about crop, fertilizer, climate, price, suitable  soil concentration for the corresponding crops .

## II. LITERATURE SURVEY

The agricultural information system will affiliate farmer for data availability on a customer farmer portal with crops details and its users and researches can get online information about the crops. For agricultural sector in Indian Society it is very difficult for the Farmers society to provide the detailed information and directly meet the Customers without the intermediate party or organisation. Various old methods are available which is being implemented till now causes a big loss for farmers society and a minor gain for Indian economy.

a) it provides a easy useful and secure way for data management and extraction of large data sets
b) Number of crops availability is huge in numbers so managing agricultural data analysis become more manageable and easy
c) Farmer facing problems for their economy and financial sustainability will be improved and they will get direct solution to their problem by implementing this model
d) It will increase and improve the farmer customer relationship as the proposed system is the meeting digital market space for both of them

## III. PROPOSED APPROACH

### A. Developing Innovative Applications in Agriculture Using Data Mining

Data mining technique as input to the various kind of data or crashed and raw data. Various algorithms are used and adopted as a divide & conquer strategy. First it compresses the database representing frequent items into a frequent pattern  then divides the compressed database into a set of conditional database, each associated with one frequent item and mines each such database separately .The method considerably decreases the search cost.

### B. Data Mining Techniques

Data Mining techniques are mainly divided in two groups, classification and clustering techniques [8]. Classification techniques are designed for classifying unknown samples using information provided by a set of classified samples. This set is usually referred to as a training set as it is used to train the classification technique how to perform its classification.
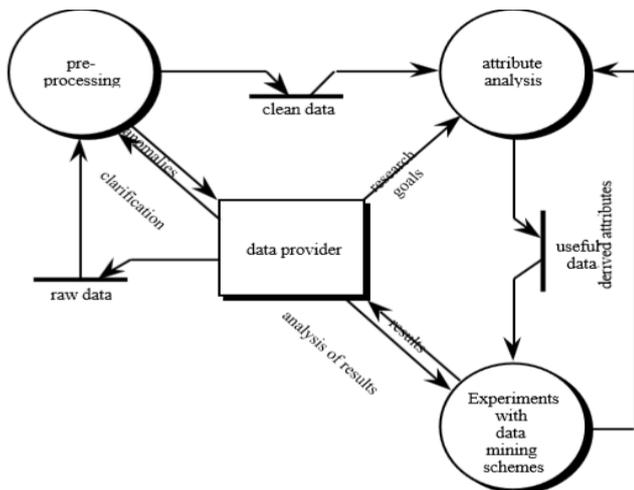
Fig. 1: Process Model for a Machine Learning Application

*C. A Regression*

Regression is a method of finding Correlation between different metric variables, fields or datasets. It is Learning a function that analyses and provides a data item into real valued prediction figure. Strong relationship or weak relationship between the variables is also calculated based on certain assumptions. The Strength of the System or at what level the considered model is fitted can be done by regression Analysis.

Multiple Linear Regression (MLR) is the method used to model the linear relationship between a dependent variable and one or more independent variable(s). The dependent variable is sometimes termed as predicting i.e. Rainfall and independent variables are called predictors i.e. Year, Area of sowing, Production. The computational needs of agriculture data and how data mining techniques can be used as a tool for knowledge management in agriculture. Data warehouses can be prepared to hold agriculture data, which makes transaction management, information retrieval and data analysis much easier

## IV. CONCLUSION

This paper is an solution to provide an overview of some previous researches and studies done in the direction of applying data mining and specifically mining techniques in the agricultural domain and the profitability of farmers work enhancement. We have also tried to evaluate the current status and possible future trends in this area. Agriculture or farming forms the backbone of any country economy, since a large population lives in rural areas and is directly or indirectly dependent on agriculture for a living. The large amount of data generated and stored can be used in the process. The inclusion is simple but effective techniques will help in development of the agriculture and industrial fields. This work performs the minimum statistics on agricultural data more efficiently and easily. It is an initial proposal to show that Online Agricultural Product System is feasible and convenient. Major benefit of this type of information system to Indian agricultural sector is when it became operational as planters, importers, exporters and growing the economy as well for farmers, customers and Country for sure.

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