

LITERATURE SURVEY

From the research article, the researcher expresses that a large amount of data which is collected and stored for analysis. Making appropriate use of these data often leads to considerable gains in efficiency and therefore economic advantages.

1.The Impact of Data Analytics in Crop Management based on Weather Conditions:

Swarupa Rani A/ 2017

Discussed the application of mathematical model like fuzzy logic designs in optimization of the crop yield, artificial neural networks in validation studies, genetic algorithms designs in accessing the fitness of the model applied, decision trees, and support vector machines to study soil, climate conditions and water regimes related to crop growth and pest management in agriculture.

2.The impact of data analytics in digital agriculture:

Nabila Chergui, M-Tahar Kechadi, Michael McDonnell

2020 International Multi-Conference on: "Organization of Knowledge and Advanced Technologies"(OCTA)

The advanced development in Information and Communication Technologies (ICT) and its adoption in the agriculture area open the field to the appearance of Digital Agriculture; which created new processes for making farming more productive, efficient, controllable while respecting the environment. Data analytics is among key of information technology used in Digital Agriculture for their ability to analyse a vast amount of data to extract new knowledge and to help agriculture understand better the farming tasks and make better decisions. Big data in its turn offers a support to farmers to extract new insights from their data and to make more accurate decision. This work presents a systematic review of methods and techniques of (data & big data) mining and their applications to Digital Agriculture from the big data view point. In this study, we will focus on crop yield. We first introduce the crop yield management process and its components, and then we focus on the crop yield monitoring. We then present a classification of data analytics techniques applied for the crop yield monitoring tasks. This is followed by discussing each category of the classification throughout a panoply of existing works and show their used techniques, then we provided a general discussion on the applicability of big data analytics into the field of digital agriculture.

3.Accuracy analysis mechanism for agriculture data using the ensemble neural network method:

Hsu-Yang Kung, Ting-Huan Kuo, Chi-Hua Chen, Pei-Yu Tsai

With the rise and development of information technology (IT) services, the amount of data generated is rapidly increasing. Data from many different places are inconsistent. Data capture, storage and analysis have major challenges. Most data analysis methods are unable to handle such large amounts of data. Many studies employ neural networks, mostly specifying the number of hidden layers and neurons according to experience or formula. Different sets of network topologies have different results, and the best network model is selected. This investigation proposes a system based on the ensemble neural network (ENN). It creates multiple network models, each with different numbers of hidden layers and neurons. A model that does not achieve the accuracy rate is discarded. The proposed system derives the weighted average of all remaining network models to improve the accuracy of the prediction. This study applies the proposed method to generate agricultural yield predictions. The agricultural production process in Taiwan is more complex than those of manufacturing or other industries. The Council of Agriculture provides agricultural forecasting primarily based on the planted area and experience to predict the yield, but without consideration of the overall planting environment. This work applies the proposed data analysis method to agriculture.

DRAWBACK:

The method based on ENN has a much lower error rate than traditional back-propagation neural networks, while multiple regression analysis has an error rate of 12.4%. Experimental results reveal that the ENN method is better than traditional back-propagation neural networks and multiple regression analysis.