V.S.B. ENGINEERING COLLEGE, KARUR
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
IBM NALAIYA THIRAN
LITERATURE SURVEY

TITLE   : Fertilizers Recommendation System for Disease Prediction

TECHNOLOGY   : Artificial Intelligence

DOMAIN NAME   : Rural and Agriculture Development

LEADER NAME   : Narmatha. N

TEAM MEMBER NAME   : 1. Dharani. S

                          2. Dharshini. R

                          3. Nandhini. M

MENTOR NAME   : Manikandan. T

                          Assistant Professor, Department of CSE

                          V. S. B. Engineering College, Karur.

ABSTRACT:

        Farming is the primary part of nation advancement. Many individuals have their existence from agriculture field, which gives completely connected with agriculture items. Plant sickness, particularly on leaves, is one of the central point of decreases in both quality and amount of the food crops. In agriculture viewpoints, on the off chance that the plant is impacted by leaf illness, it lessens the development of the farming level. Finding the leaf infection is a significant job of agribusiness safeguarding. Artificial intelligence is having its immense applications in different areas. Because of its capacity to see the issues, fostering the suitable purposes behind that and to lay out ideal answers for it, Artificial intelligence can go about as an extraordinary guide in tending to the sicknesses of yields. Artificial intelligence methods have been passed on to convey results with better precision and heartiness. Further, it empowered specialists to identify the complicated details of each condition and deal an answer that could be an ideal fit for the individual issue. Different simulated intelligence procedures like CNN, ANN and DL have been effectively utilized for illness discovery in Rice, Wheat, Maize, Cotton, Tomato, Peas, Potato, Cucumber, Cassava, Berries, Peach, Grapes, olives, Mango, Banana, Apple, Sweet paper, Tea, and so on.

INTRODUCTION:

        Detection and recognition of plant diseases using machine learning are very efficient in providing symptoms of identifying diseases at its earliest. Plant pathologists can analyse the

digital images using digital image processing for diagnosis of plant diseases. Application of computer vision and image processing strategies simply assist farmers in all of the regions of agriculture. Generally, the plant diseases are caused by the abnormal physiological functionalities of plants. Therefore, the characteristic symptoms are generated based on the differentiation between normal physiological functionalities and abnormal physiological functionalities of the plants. Mostly, the plant leaf diseases are caused by Pathogens which are positioned on the stems of the plants. These different symptoms and diseases of leaves are predicted by different methods in image processing. These different methods include different fundamental processes like segmentation, feature extraction and classification and so on. Mostly, the prediction and diagnosis of leaf diseases are depending on the segmentation such as segmenting the healthy tissues from diseased tissues of leaves.

LITEREATURE SURVEY:

The author says that in India, the largest source of subsistence is agriculture and its federated sectors. In rural regions, there are about 82% of small and marginal farmers, and 70% of rural households depend primarily on agriculture only. The proposed system recommends the suitable crops for the lands with varied soil nutrients. The appropriate fertilizers that are suitable for specific soil nutrient and crop sown are also recommended. Plant physiology can be damaged due to fungal, viral or bacterial diseases. Plants affected from the above pathogens are detected. Random forest classifier gives an accuracy of 98% for recommendation system, and PyTorch neural network gives an accuracy of 99.2% for disease prediction [1]. The Author states that Agriculture is the main aspect for the economic development of a country. Agriculture is the heart and life of most Indians. The soil type, fertilizer recommendation, diseases in plants and leaves. Plant disease, especially on leaves, is one of the major factors that reduce the yield in both quality and quantity of the food crops. Finding the leaf disease is an important role to preserve agriculture. Smart analysis and Comprehensive prediction model in agriculture helps the farmer to yield right crop at the right time. The main benefits of the proposed system are as follows: Yield right crop at the right time, Balancing the crop production, control plant disease, Economic growth, and planning to reduce the crop scarcity. Hence to Detect and recognize the plant diseases and to recommend fertilizer it is necessary to provide symptoms in identifying the disease at its earliest [2]. The Author claims that Agriculture is the mainstay of a rising economy in India. Traditionally farmers followed ancestral farming patterns and norms. However, a single farmer cannot be expected to take into account all innumerable factors that contribute to crop growth. A single misguided or imprudent decision by the farmer can have undesirable ramifications. With the advancements in various domains, intelligent agricultural system is needed for upliftment of Indian economy. The collaboration of recommender system with machine learning will lead to

Intelligent Agriculture System that helps the farmer community in their decision making of farm management and agribusiness activities such as i) Predicting agriculture commodity market price before cultivation, ii) Determining best cultivars to plant iii) Determine optimum cultivation date v) Evaluate demand and supply risk vi) Investment Prioritizing. It also helps farmer to perform the activities like crop management including applications on yield prediction, disease detection, weed detection, crop quality, and growth prediction etc. This chapter describes the case study on "Crop Disease Detection and Yield prediction". The study includes identification of crop condition, disease detection, prediction about specific crop and recommendation using machine learning algorithms. It gives an idea about how recommender system is used in agriculture for disease detection and prediction [3].

REFERENCE:

[1]   SuriyaKrishnaan, K., Kumar, L. C., & Vignesh, R. (2022). Recommendation System for Agriculture Using Machine Learning and Deep Learning. In Inventive Systems and Control (pp. 625-635). Springer, Singapore.

[2]   Selvi, P. P., & Poornima, P. Soil Based Fertilizer Recommendation System for Crop Disease Prediction System.

[3]   Akulwar, P. (2020). A recommended system for crop disease detection and yield prediction using machine learning approach. Recommender System with Machine Learning and Artificial Intelligence: Practical Tools and Applications in Medical, Agricultural and Other Industries, 141-163.