V.S.B.ENGINEERING COLLEGE, KARUR

Department of Computer Science and Engineering

IBM NALAIYA THIRAN

LITERATURE SURVEY

TITLE : FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASE PRODUCTION

DOMAIN NAME : ARTIFICIAL INTELLIGENCE, DEEP LEARNING

LEADER NAME : SRI SARAN K

TEAM MEMBERS : SATHISH BALAJI M, SABARINATHAN B, SUJITH VP

MENTOR NAME : ANANDAN D

ABSTRACT

Agriculture is the most important sector in today's life. Most plants are affected by a wide variety of bacterial and fungal diseases. Diseases on plants placed a major constraint on the production and a major threat to food security. Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality. In recent years, the number of diseases on plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in cultivation methods, and inadequate plant protection techniques.

An automated system is introduced to identify different diseases on plants by checking the symptoms shown on the leaves of the plant. Deep learning techniques are used to identify the diseases and suggest the precautions that can be taken for those diseases.

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 analyze 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.

LITERATURE SURVEY

In 2018, Komal Bodake et al [1], developed a soil based fertilizer recommendation system that can

be used for regional soil analysis. The advanced farming involves various techniques as IOT, Cloud

computing and data mining. This helps the farmers to gather details regarding the fertilizers he can

use from his soil sample. The tool was constructed in such a way involving regional languages. This makes it understandable to all the farmers and yield maximum production.

In 2020, Shravani V et al [2], proposed a suggestion for crop and soil classification using machine learning approach. The results of such classification can be further combined with crop dataset to predict those crops that are suitable for the soil series of a particular region and its climatic conditions. Soil and crop dataset used by them comprises of chemical attributes and geographical attributes. In the proposed method algorithms like SVM and Ensembling technique were used to classify the soil series data and predict the suitable crops.

In 2017, Rohit Kumar Rajak et al [3], proposed a new method for crop recommendation system to maximize the crop yield using machine learning technique. Their method was characterized by a soil database collected from the farm, crop provided by agricultural experts and the achievement of parameters such as soil quality through soil testing lab dataset. The data from the soil testing lab was fed to the recommendation system that will use the collected data and do ensemble model with majority voting technique using support vector machine (SVM) and ANN as the learners to recommend a crop for site specific parameter with high accuracy and efficiency. Their future work was to improve their data set with large number of attributes.

In 2020, Yoganand S et al [4], addressed the problem of preventing crop disease using a naïve model which was monitored with the help of sensors. Internet of things (IoT) is a promising technology which provides efficient and relevant solutions towards the modernization of agricultural domains. Humidity and Temperature sensor was deployed to verify the humidity and the atmospheric temperature of the plant. Similarly soil moisture sensor was deployed to get status of the soil. Sensors, webcam, GSM and Controllers were used by them for receiving the data from the groundnut farm. The received data was analyzed using machine learning models (XG boost) and so the prediction of crop disease was done. Thus a novel approach for preventing the crop disease (Groundnut Crop) was proposed and their prediction was intimated to farmers through SMS/E-mail.

REFERENCES

[1] Komal Bodake, Rutuja Ghate, Himanshi Doshi, Priyanka Jadhav, BalasahebTarle, "Soil based Fertilizer Recommendation System using Internet of Things". MVP Journal of Engineering SCIENCE, June 2018.

[2] Shravani V, Uday Kiran S, Yashaswini J S, Priyanka D, "Soil Classification And Crop Suggestion Using Machine Learning". International Research Journal of Engineering and Technology (IRJET), ISSN: e-ISSN: 2395-0056, p-ISSN: 2395, 6 June 2020.

[3] Rohit Kumar Rajak, Ankit Pawar, Mitalee Pendke , Pooja Shinde, Suresh Rathod,"CROP Recommendation System to Maximize Crop Yield using Machine Learning Technique". International Research Journal of Engineering and Technology (IRJET), ISSN No: e-ISSN: 2395-0056, p-ISSN: 2395-0072, 12 December 2017.

[4] Yoganand S, Narasingaperumal, Pratap Reddy P, Rahul S, "Journal Name: International Research Journal of Engineering and Technology (IRJET)". ISSN No: e-ISSN: 2395-0056, p-ISSN: 2395-0072, March 3 2020.