FERTILIZER RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

Department Of CSE,
PSG Institute of Technology and Applied Research, Coimbatore.

Team Members

KEERTHANA D S   - 715519104019
PANTRA MANASA   - 715519104032
SOWMI C S   - 715519104050
MANORANJITH P   - 715519104304

Mentor

Mr.ARAVINDHRAJ N
ASSISTANT PROFESSOR,
DEPARTMENT OF CSE,
PSG ITECH.

ABSTRACT

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. 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.

S.NO.	Journal Paper Title	Author's Name	Source	Finding
1.	Plant Leaves Disease detection using Image Processing Techniques	Ms. Kiran R. Gavhale, Ujwalla Gawande,	IOSR Journal of Computer Engineering (IOSR-JCE) e-ISSN: 2278-0661, p- ISSN: 2278-8727Volume 16, Issue 1, Ver. V (Jan. 2014), PP 10-16	This paper mainly focuses on the detecting and classifying the leaf disease of soybean plant. Using SVM the proposed system classifies the leaf disease in 3 classes like i.e. downy mildew, frog eye, and septoria leaf blight etc. The proposed system gives maximum average classification accuracy reported is ~90% using a big dataset of 4775 images. Algorithm used: SVM.

S.NO.	Journal Paper Title	Author's Name	Source	Finding
2.	Design of Intelligent Agriculture Management Information System Based on IOT	Duan Yan-e,	IEEE,4th, Fourth International reference on Intelligent Computation Technology and Automation, 2011	The current paper proposes an android application for irrigation and plant leaf disease detection with cloud and IoT. For monitoring irrigation system they use soil moisture and temperature sensor and sensor data send to the cloud. The user can also detect the plant leaf disease. K-means clustering used for feature extraction. Algorithm used: K-means clustering

S.NO.	Journal Paper Title	Author's Name	Source	Finding
3.	Fertilizers Recommendation System For Disease Prediction In Tree Leave	R. Neela, P	International journal of scientific & technology research volume 8, issue 11, November 2019	The author proposes a method which helps us predict crop yield by suggesting the best crops. It also focuses on soil types in order to identify which crop should be planted in the field to increase productivity. In terms of crop yield, soil types are vital. By incorporating the weather details of the previous year into the equation, soil information can be obtained.

S.NO.	Journal Paper Title	Author's Name & Year	Source	Finding
4.	Healthy Farm: Leaf Disease Estimation and Fertilizer Recommendation System using Machine Learning	Swapnil Jori1, Rutuja Bhalshankar2, Dipali Dhamale3, Sulochana Sonkamble	International Journal of All Research Education and Scientific Methods (IJARESM), ISSN: 2455-6211	The current work examines and describes image processing strategies for identifying plant diseases in numerous plant species. BPNN, SVM, K-means clustering, and SGDM are the most common approaches used to identify plant diseases.

S.NO.	Journal Paper Title	Author's Name	Source	Finding
5.	Farmer's Assistant: A Machine Learning Based Application for Agricultural Solutions.	Shloka Gupta ,Nishit Jain ,Akshay Chopade	International Research paper, Machine Learning Cornell University	The paper mainly focuses oncrop recommendation using Random Forest algorithm, fertilizer recommendation using rule based classification system, and crop disease detection using Efficient Net model on leaf images. The user can provide the input using forms on our user interface and quickly get their results. In addition, we also use the LIME interpretability method to explain our predictions on the disease detection image, which can potentially help understand why our model predicts what it predicts, and improve the datasets and models using this information.

S.NO.	Journal Paper Title	Author's Name	Source	Finding
6.	Detection of Leaf Diseases and Classification using Digital Image Processing	R.MeenaPrakash, Saraswathy, G.Ramalakshmi, K.H. Mangaleswari, T.Kaviya	International Conference on Innovations in Information, Embedded and Communication Systems(ICIIECS), IEEE, 2017. [	The proposed method uses SVM to classify tree leaves, identify the disease and suggest the fertilizer. The proposed method is compared with the existing CNN based leaf disease prediction. The proposed SVM technique gives a better result when compared to existing CNN. For the same set of images, F-Measure for CNN is 0.7and 0.8 for SVM, the accuracy of identification of leaf disease of CNN is 0.6 and SVM is 0.8.

Thank You