

Project Design Phase-I
Literature Survey

Date	15 October 2022
Team ID	PNT2022TMID44860
Project Name	Fertilizers Recommendation System For Disease Prediction
Maximum Marks	2 Marks

S.No.	Title	Journal / Publication / Conference	Author(s)	Observation
1.	Deep Neural Networks Based Recognition of Plant Diseases by Leaf Image Classification	Research Article	Srdjan Sladojevic, Marko Arsenovic, Andras Anderla, Dubravko Culibrk, and Darko Stefanovic	In this paper, a new approach of using deep learning methods was explored in order to automatically classify and detect plant diseases from leaf images. The developed model was able to detect leaf presence and distinguish between healthy leaves and 13 different diseases, which can be visually diagnosed. The complete procedure was described, respectively, from collecting the images used for training and validation to image preprocessing and augmentation and finally the procedure of training the deep CNN and fine-tuning. Different tests were performed in order to check the

				performance of the newly created model.
2.	Fertilizers Recommendation System For Disease Prediction In Tree Leave	International Journal	R. Neela, P. Nithya	This paper's 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 0.7 and 0.8 for SVM, the accuracy of identification of leaf disease of CNN is 0.6 and SVM is 0.8.
3.	Plant Disease Detection and Fertilizer Suggestion	Journal	Apurva Save, Aksham Gupta, Sarthak Pruthi	This model detects and distinguishes between a healthy plant and different diseases and provides suitable remedies so as to cure the disease. This paper proposed and developed a system which uses plant leaf images to detect different types of disease in crops, and also provides appropriate fertilizer suggestions.
4.	Recognition of Image-Based Plant Leaf Diseases Using Deep Learning Classification Models	Research article	Sakshi Takkar, Anuj Kakran, Veerpal Kaur, Manik Rakhra.	Protection of crops in an agriculture field is a very tedious task and still, there is a need for a qualitative study to know about the crops and their likely weeds, pathogens, and pests. The present methodology identifies diseases in plants to increase the productivity of crops in fields. The system is developed for the benefit of farmers and the agricultural sector. In this system, deep learning models were used for the detection of plant diseases using different leaf images to identify whether the leaf is healthy or diseased.

5.	Farmer's Assistant : A Machine Learning Based Application For Agricultural Solutions	Journal	Shloka Gupta Nishit Jain Akshay Chopad Aparna Bhonde	In this paper, we propose a user-friendly web application system based on machine learning and web-scraping called the 'Farmer's Assistant'. With our system, we are successfully able to provide several features - crop recommendation using Random Forest algorithm, fertilizer recommendation using a 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.
6.	Plant disease detection using convolutional neural network	International Journal	Prakanshu Srivastava Kritika Mishra , Vibhav Awasthi , Vivek Kumar Sahu and Mr. Pawan Kumar Pal	In this paper, an approach of using deep learning methods was explored to automatically classify and detect plant diseases from leaf images. The entire procedure was described, respectively, from collecting the pictures used for training and validation to image pre-processing and augmentation and eventually the procedure of coaching the deep CNN and fine-tuning. Different tests were performed to see the performance of the newly created model.
7.	Semi-automatic leaf disease detection and classification system for soybean culture IET	Research article	Sukhvir Kaur Shreelekha Pandey Shivani Goel	This paper mainly focuses on detecting and classifying the leaf disease of soybean plants. Using SVM the proposed system classifies the leaf disease in 3 classes like i.e. downy mildew,

	Image Processing			<p>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.</p> <p>Algorithm used: SVM.</p>
8.	A Brief Review on Plant Disease Detection using in Image Processing	International Journal	Rajneet Kaur Miss. Manjeet Kaur	<p>As, SVM is very complex in calculations and it is not the cost effective testing of each instance and inaccurate to wrong inputs. KNN algorithm is effectual classifier would be used to minimize the computational cost.</p> <p>In previous research it has been proven that KNN has a high accuracy rate. KNN classifier obtains highest result as compared to SVM.</p> <p>The comparison would be based upon two parameters Accuracy and Detection time. The study reviews and summarizes some techniques have been used for plant disease detection. A novel approach for classification of plant disease has been proposed.</p>