

Hybrid Detection Model for Crop Disease using CNN and SVM algorithm

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Abstract: *Plant and crop disease management practices have evolved significantly to limit harm. Utilizing big data analytic techniques, it is now possible to forecast the beginning of a change in the severity of diseases using new information and communication technology. The study's findings show that this approach is still in its early stages, with significant obstacles to overcome. The planned study's purpose is to look at a variety of machine algorithms for predicting plant diseases. A plant's response to the pathogen exhibits some obvious illness symptoms. Shape, size, etc are all visual characteristics that help identify the plant's status. The study paper covers all of these elements and using a variety of machine learning approaches to get a result. The proposed system model is tested on the Plant Disease dataset. Experiments reveal that the proposed model surpasses previous existing models with a classification accuracy of roughly 99 percent.*

Keywords: CNN, SVM, Machine learning, deep learning, crop disease, crop disease prediction

REFERENCES

- [1]. Peng Jiang, Yuehan Chen, Bin Liu, Dongjian He, and Chunquan Liang, „Real-Time Detection of Apple Leaf Diseases Using Deep Learning Approach Based on Improved Convolutional Neural Networks”, 2019
- [2]. Abdul Kadir, „A Model of Plant Identification System Using GLCM, Lacunarity, and Shen Features”, 2014
- [3]. Gianni Fenu and Francesca Maridina Mallocci, „Forecasting Plant and Crop Disease: An Explorative Study on Current Algorithms.”, 2021
- [4]. Rupanjali D. Baruah, R.M. Bhagat, Sudipta Roy, L.N. Sethi, „Crop Disease Detection Using Deep Learning.”, 2018
- [5]. G. Prem Rishi Kranth, M. Hema Lalitha, Laharika Basava, Anjali Mathur “Plant Disease Prediction using Machine Learning Algorithms”, 2018

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