



IJIRCCCE

e-ISSN: 2320-9801 | p-ISSN: 2320-9798



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

Volume 11, Issue 3, March 2023

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

Impact Factor: 8.379

9940 572 462

6381 907 438

ijircce@gmail.com

www.ijircce.com

Plant Leaf Disease Prediction

Prajakta Mahajan ¹, Aneeqa Inamdar ², Anuja Bahirat ², Ankita Nimbalkar ², Vrucha Dhaybar ²

Project Guide, Department of Computer Engineering, Pimpri Chinchwad Polytechnic College, Nigdi, Pune, India¹

Student, Department of Computer Engineering, Pimpri Chinchwad Polytechnic College, Nigdi, Pune, India²

ABSTRACT: Plant diseases can be the common cause of the less production eventually resulting in low income to farmers. Researchers are at their best efforts to find a solution for the detection of plant diseases to increase farm productivity. In this we propose a novel approach of disease detection and prediction for tomato plant leaves using machine learning techniques. Training of the models was performed with the use of a kaggle dataset, which included 7 distinct classes of [plant, disease] combinations, including healthy tomato crops. Machine learning algorithm which is well-suited for detection and prediction problems will be used for predicting healthy and unhealthy leaves affected by two types of diseases septoria spot and bacteria spot

I. INTRODUCTION

Disease in plants can be caused by several factors which can result in economical and production loss. Climate change is one of the most important factor that decide the fortune of the plants. There are several pathogens that can cause tomato plant disease. Pathogens can be insects or micro-organisms like viruses and bacteria.

The rate of infection in tomato plants are dependent of factors like wind pattern, temperature, humidity, varietal resistance and plant's health. Disease like leaf bacterial spot is caused in moist weather and splattering rains, leaf curl disease is characterized by stunting of the plants with downward rolling and crinkling of the leaves, mosaic which is characterized by light and dark green spot on leaves. Plants are a very important part of human life. They have variety of use as food, medication, raw materials and maintaining a balanced ecosystem. Plant disease is a deterioration of normal state of plant that interrupts and modifies its functionality

II. PROBLEM DEFINITION

Current agriculture system fully maintained by humans, they do not use any technology. Humans are relies on visual observation. The process is time consuming and there might be error in observation. Confusion in recognition of similar diseases.

III. METHODOLOGY

The primary goal of this project is to construct a Machine Learning algo to efficiently predict tomato leaf diseases. The seven common diseases that affect tomato leaves include target spot, mosaic virus, yellow leaf curl virus, bacterial spot, early blight, late blight and septoria leaf spot. The proposed technique involves four major phases, namely: data acquisition, pre-processing, training, and data prediction.

IV. LITERATURE SURVEY

Title : A Framework for Detection and Classification of Plant Leaf and Stem Diseases

Dheeb Al Bashish, evaluated the proposed work for crop leaf disease recognition using feed-forward propagation algorithm and well performed with approximately 93 percent efficiency. Early scorch, cottonmold, late scorch, and small whiteness diseases that affect crops were monitored for a solution.

Title : An artificial neural network approach to identify fungal diseases of cucumber (Cucumis sativus L.) Plants using digital image processing

Keyvan Asefpour Vakilian, have been developed to extend the precision in the identification of two kinds of fungal diseases and the experimental result demonstrates approximately 92 % accuracy.

Title: Diagnosis of Pomegranate Plant Diseases using Neural Network

Mrunmayee Dhakate , proposed a system to recognize and classify diseases like leaf spot, bacterial blight, fruit spot and fruit rot diseases of pomegranate plant using back-propagation algorithm and the experimental result shows around 90% accuracy.

Title : Groundnut Leaf Disease Detection and Classification by using Back Propagation Algorithm

Ramakrishnan M , proposed work on the identification of groundnut plant disease Cercospora (leaf spot) using Backpropagation method. The experimental results and observation shows out of 100 sample diseased leaf images they classified four types of diseases and secured 97.41% of accuracy.

VI. CONCLUSION

Agriculture is still one of the largest sectors on which the majority of the Indian population depends. Disease detection in these plants is therefore critical to economic growth. Tomato is one of the main crops generated in big amounts. Therefore, in the tomato crop, this paper seeks to detect and predict diseases. Our proposed network can be very useful for the identification and prediction of tomato leaf disease using machine learning.

REFERENCES

1. K. Lakshmisudha, S. Hegde, N. Kale and S. Iyer, "Smart Precision Based Agriculture Using Sensors," International Journal of Computer Applications, vol. 146, no. 11, pp. 975-887, July 2011.
2. N. Gondchawar and D. R. Kawitkar, "IoT Based Smart Agriculture," International Journal of Advanced Research in Computer and Communication Engineering (IJARCCCE), vol. 5, no. 6, June 2016.
3. M. Gayatri, J. Jayasakthi and D. G. Anandhamala, "Providing Smart Agriculture Solutions to Farmers for Better Yielding Using IoT," in IEEE International Conference on Technological Innovations in ICT for Agriculture and Rural Development, TIAR, 2015.
4. C. Dwarkani, G. Ram, R. Jagannathan and S. Privatharshini, "Smart Farming System Using Sensors for Agricultural Task Automation," in IEEE International Conference on Technological Innovations in ICT for Agriculture and Rural Development , TIAR, 2015.



INNO  SPACE
SJIF Scientific Journal Impact Factor

Impact Factor: 8.379

 **doi**[®]
CROSS **ref**

ISSN INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA



INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH

IN COMPUTER & COMMUNICATION ENGINEERING

 9940 572 462  6381 907 438  ijircce@gmail.com



www.ijircce.com

Scan to save the contact details