Tomato Plant Leaf Disease Detection Using Convolutional Neural Network

Radhika Dakhore[1], Shahjadi Sheikh[2], Aishwarya Masar[3], Aniket Zade[4], Prof. Aditya Bakshi[5]

U.G. Students, Department of Computer Science and Engineering[1,2,3,4]

Assistant Professor, Department of Computer Science and Engineering[5]

Jawaharlal Darda Institute of Engineering and Technology, Yavatmal, Maharashtra, India

Abstract: *Identification of the plant diseases is the key to preventing the losses in the yield and quantity of the agricultural product. Health monitoring and disease detection on plant is very critical for sustainable agriculture. In This synopsis discussed the methods used for the detection of Tomato plant diseases using their leaves images. The automatic identification and diagnosis of tomato leaves diseases are highly desired in field of agriculture information. Recently Deep Convolutional Neural networks (CNN) has made tremendous advances in many fields, close to computer vision such as classification, object detection, segmentation, achieving better accuracy than human-level perception. In spite of its tremendous advances in computer vision tasks, CNN face many challenges, such as computational burden and energy, to be used in mobile phone and embedded systems. In this study, we propose an efficient smart mobile application model based on deep CNN to recognize tomato leaf diseases. To build such application, our model has been inspired from Mobile Net CNN model and can recognize the 10 most common types of Tomato leaf disease. Trained on tomato leafs dataset, to build our application 7176 images of tomato leaves are used in the smart mobile system, to perform a Tomato disease diagnostics.*

Keywords: *Deep learning, Convolutional Neural networks, Tomato leaf disease detection, Smart Web Application.*

REFERENCES

[1]. M. Akila,P. Deepan Assistant Professor ,Department of CSE Arasu Engineering College Kumbakonam, "Detection and Classification of Plant Leaf Diseases by using Deep Learning Algorithm" ,International Journal of Engineering Research & Technology (IJERT)ISSN: 2278-0181Published by, www.ijert.org ICONNECT - 2k18 Conference Proceedings Volume 6, Issue 07Special Issue – 2018

[2]. Melike S ardogan, Adem Tuncer, Yunus Ozen Department of Computer Engineering Yalova University Yalova, Turkey," Plant Leaf Disease Detection and Classification based on CNN with LVQ Algorithm", 978-1-5386-7893-0/18/$31.00 2018 IEEE,(UBMK'18)3rd International Conference on Computer Science and Engineering 382

[3]. Rajashree Patil, Dr. Sampada Gulvani Assistant Professor, Associate of Computer Science, Vivekanand College, Kolhapur, India Department of Computer Application, Bharati Vidyapeeth Institute of Management, Kolhapur, India " Plant Disease Detection Using Neural Network : A Review",© 2019 JETIR February 2019, Volume 6, Issue 2 www.jetir.org (ISSN-2349-5162)

[4]. Hareem Kibriya, Rimsha Rafique, Wakeel Ahmad, S.M Adnan Department of Computer Science University of Engineering and Technology Taxila, Pakistan," Tomato Leaf Disease Detection Using Convolution Neural Network", Proceedings of 2021 18thInternational Bhurban Conference on Applied Sciences & Technology (IBCAST)Islamabad, Pakistan, 12 - 16 January, 2021

[5]. https://en.wikipedia.org/wiki/TensorFlow

[6]. https://en.wikipedia.org/wiki/Keras

[7]. https://fastapi.tiangolo.com

[8]. https://www.tensorflow.org/tfx/tutorials/serving/rest_simple