Plant Disease Classification using Deep Learning& Image Processing

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Abstract: *Identification of the plant diseases is the key to prevent the losses in the yield and quantity of the agricultural product. The studies of the plant diseases mean the studies of visually observable patterns seen on the plant. Health monitoring and disease detection on plant is very critical for sustainable agriculture. It is very difficult to monitor the plant diseases manually. It requires tremendous amount of work, expertise in the plant diseases, and also require the excessive processing time. Hence, image processing is used for the detection of plant diseases by capturing the images of the leaves and comparing it with the data sets. The data set consist of different plant in the image format. Apart from detection users are directed to an e-commerce website where different pesticides with its rate and usage directions are displayed. This website can be efficiently used for comparing the MRP's of different pesticides and purchase the required one for the detected disease. This paper aims to support and help the green house farmers in an efficient way.*

Keywords: Image Processing, Plant Disease Detection, Neural Network, Deep Learning, Segmentation.

REFERENCES

[1]. Mohanty, S. P., Hughes, D. P., &Salathé, M. (2016). Using deep learning for image based plant disease detection. Frontiers in Plant Science, 7(September),[1419].https://doi.org/10.3389/fpls.2016.01419

[2]. Santhosh Kumar S, and B. K. Raghavendra. Diseases Detection of Various PlantsLeavesUsing Image Processing Techniques: A Review. 2019 5th International Conference on Advanced Computing & Communication Systems (ICACCS)

[3]. Jyotsna Bankar, and Nitin R Gavai. Convolutional Neural Network based Inceptionv3 Model for Animal Classification. International Journal of Advanced Research inComputer and communication Engineering, May 2018

[4]. Abirami Devaraj, Karunya Rathan, SarvepalliJaahnavi, and K Indira. Identification ofPlant Disease using Image Processing Technique. 2019 International Conference on Communication and Signal Processing (ICCSP).

[5]. Mercelin Francis, and C. Deisy. Disease Detection and Classification in Agricultural Plants Using Convolutional Neural Networks — A Visual Understanding. 2019 6thInternational Conference on Signal Processing and Integrated Networks (SPIN).

[6]. S. Sankaran, A. Mishra, R. Ehsani, and C. Davis, ―A review of advanced techniquesfor detecting plant diseases,‖ Computers and Electronics in Agriculture, vol. 72, no. 1,pp. 1–13, 2010

[7]. Punajari, J.D., Yakkundimath, R., Byadgi, A.S., 'Image Processing Based Detection of Fungal Diseases In Plants', International Conference on Information and Communication Technologies, Volume 46, pp. 1802-1808, 2015

[8]. Zulkifli Bin Husin, Abdul Hallis Bin Abdul Aziz, Ali Yeon BiMdShakaffRohaniBinti S Mohamed Farook, "Feasibility Study on Plant Chili Disease Detection Using Image Processing Techniques", 2012 Third International Conference on Intelligent Systems Modelling and Simulation