Plants Disease Identification and Classification Through Leaf Images: A Survey

DOI: 10.1007/s11831-018-9255-6
Archives of Computational Methods in Engineering, 2019, 26, 507-530.

#	Paper	IF	Citations
136	An Ontology-based Approach to Plant Disease Identification System. **2018**,		5
135	Diagnosis and recognition of grape leaf diseases: An automated system based on a novel saliency approach and canonical correlation analysis based multiple features fusion. **2019**, 24, 100349		26
134	Solving Current Limitations of Deep Learning Based Approaches for Plant Disease Detection. **2019**, 11, 939		116
133	Algorithms for Speeding-Up the Deep Neural Networks For Detecting Plant Disease. **2019**,		1
132	A Formal Model for Managing Multiple Observation Data in Agriculture. **2019**, 15, 79-100		1
131	Multilayer Convolution Neural Network for the Classification of Mango Leaves Infected by Anthracnose Disease. **2019**, 7, 43721-43729		96
130	A Computer Vision System for Guava Disease Detection and Recommend Curative Solution Using Deep Learning Approach. **2019**,		2
129	Convolution Neural Network based Several Orange Leave Disease Detection and Identification Methods: A Review. **2019**,		1
128	Use of deep learning techniques for identification of plant leaf stresses: A review. **2020**, 28, 100443		10
127	Summary of Leaf-based plant disease detection systems: A compilation of systematic study findings to classify the leaf disease classification schemes. **2020**,		4
126	Hyperspectral Leaf Image-Based Cucumber Disease Recognition Using the Extended Collaborative Representation Model. **2020**, 20,		3
125	VddNet: Vine Disease Detection Network Based on Multispectral Images and Depth Map. **2020**, 12, 3305		12
124	Entropy-controlled deep features selection framework for grape leaf diseases recognition. **2020**,		22
123	Tomato Diseases and Pests Detection Based on Improved Yolo V3 Convolutional Neural Network. **2020**, 11, 898		58
122	Real-Time Machine-Learning Based Crop/Weed Detection and Classification for Variable-Rate Spraying in Precision Agriculture. **2020**,		15
121	Mango leaf disease recognition using neural network and support vector machine. **2020**, 3, 185-193		13
120	Deep Learning in Plant Diseases Detection for Agricultural Crops. **2020**, 11, 41-58		24

119	Classification of olive leaf diseases using deep convolutional neural networks. **2021**, 33, 4133-4149	14
118	Plant disease detection using computational intelligence and image processing. **2021**, 128, 19-53	30
117	Plant Disease Recognition from Leaf Images Using Convolutional Neural Network. **2021**, 169-176	0
116	A Review on Artificial Intelligence Techniques for Disease Recognition in Plants. 1022, 012032	5
115	Robotic Spraying for Precision Crop Protection. **2021**, 117-150	0
114	Fused and Modified Evolutionary Optimization of Multiple Intelligent Systems Using ANN, SVM approaches. **2021**, 66, 1479-1496	1
113	AI Based Automated Model for Plant Disease Detection, a Deep Learning Approach. **2021**, 199-213	1
112	Forecasting Plant and Crop Disease: An Explorative Study on Current Algorithms. **2021**, 5, 2	10
111	Identification of Tobacco Crop Based on Machine Learning for a Precision Agricultural Sprayer. **2021**, 9, 23814-23825	7
110	Anomaly Detection in Vitis Vinifera Using Neural Networks and Radon Transform. **2021**, 707-717	0
109	An Efficient Bag-of-Features for Diseased Plant Identification. **2021**, 159-172	
108	A Generic Approach for Wheat Disease Classification and Verification Using Expert Opinion for Knowledge-Based Decisions. **2021**, 9, 31104-31129	5
107	WITHDRAWN: Recognition of Apple Leaf Diseases using Deep Learning and Variances-Controlled Features Reduction. **2021**, 104027	25
106	Potato Plant Leaves Disease Detection and Classification using Machine Learning Methodologies. 1022, 012121	7
105	Enhanced adaptive creation of visualisation network by detection of leaves. **2021**,	
104	A Study of Adversarial Attacks and Detection on Deep Learning-Based Plant Disease Identification. **2021**, 11, 1878	1
103	A Review of Machine Learning Approaches in Plant Leaf Disease Detection and Classification. **2021**,	9
102	Plant Leaf Disease Recognition Using Depth-Wise Separable Convolution-Based Models. **2021**, 13, 511	5

101	Automatic feature extraction and detection of plant leaf disease using GLCM features and convolutional neural networks. **2021**,		5
100	Machine Learning and Deep Learning Based Computational Techniques in Automatic Agricultural Diseases Detection: Methodologies, Applications, and Challenges. *Archives of Computational Methods in Engineering*, 1	7.8	7
99	Height Estimation Clamp by using Vision System. **2021**,		
98	Internet of Things and Machine Learning Applications for Smart Precision Agriculture.		1
97	An Approach for Rice Bacterial Leaf Streak Disease Segmentation and Disease Severity Estimation. **2021**, 11, 420		9
96	Hybrid intelligent technology for plant health using the fusion of evolutionary optimization and deep neural networks. e12756		0
95	Artificial Intelligence in Smart Farms: Plant Phenotyping for Species Recognition and Health Condition Identification Using Deep Learning. **2021**, 2, 274-289		4
94	Automated Plant Leaf Disease Detection and Classification Using Fuzzy Based Function Network. 1		6
93	A Survey of Deep Convolutional Neural Networks Applied for Prediction of Plant Leaf Diseases. **2021**, 21,		27
92	Deep learning applied to plant pathology: the problem of data representativeness. 1		3
91	Predicting rice diseases across diverse agro-meteorological conditions using an artificial intelligence approach. **2021**, 7, e687		5
90	Analysis of Diseases in Plants Leaves Using Deep Learning Techniques. **2021**, 973-983		
89	Identification and Classification of Botrytis Disease in Pomegranate with Machine Learning. **2020**, 582-598		2
88	Using Deep Learning Techniques to Detect Rice Diseases from Images of Rice Fields. **2020**, 225-237		4
87	Identification of Plant Leaf Diseases Based on Inception V3 Transfer Learning and Fine-Tuning. **2019**, 118-127		5
86	Classification and Prediction of Rice Crop Diseases Using CNN and PNN. **2021**, 31-40		1
85	"Macrobot": An Automated Segmentation-Based System for Powdery Mildew Disease Quantification. **2020**, 2020, 5839856		8
84	Fusion Approach-Based Horticulture Plant Diseases Identification Using Image Processing. **2020**, 119-132		3

83	Leaf-Based Plant Disease Detection Systems Depiction: An Overview of Outcomes of Statistical Studies for the Identification of Classification Schemes for Leaf Diseases. **2021**, 341-352	0
82	Grapevine Nutritional Disorder Detection Using Image Processing. **2019**, 184-196	
81	A Computer Based Image Processing Approach to Identify Rice Blast. **2020**,	
80	Deep Learning for Plant Disease Identification from Disease Region Images. **2020**, 65-75	1
79	Efficient Framework for Identification of Soybean Disease Using Machine Learning Algorithms. **2021**, 718-729	0
78	Recent advances of deep learning algorithms for aquacultural machine vision systems with emphasis on fish. 1	4
77	An automatic phytopathometry system for chlorosis and necrosis severity evaluation of asian soybean rust infection. **2021**, 106542	
76	. **2021**, 9, 160779-160796	1
75	Tomato Leaf Disease Recognition Using Depthwise Separable Convolution. **2022**, 341-351	1
74	Artificial Intelligence in Smart Agriculture: Modified Evolutionary Optimization Approach for Plant Disease Identification. **2020**,	2
73	NemaNet: A convolutional neural network model for identification of soybean nematodes. **2022**, 213, 39-62	2
72	Integration of dilated convolution with residual dense block network and multi-level feature detection network for cassava plant leaf disease identification.	
71	A Machine Learning Approach to Classification of Okra. **2022**,	0
70	Recognition of rice blast disease in greenhouse environment using optimized deep neural network. **2022**,	
69	ESMO-based Plant Leaf Disease Identification: A Machine Learning Approach. **2022**, 155-170	
68	Banana Plant Disease Classification Using Hybrid Convolutional Neural Network.. **2022**, 2022, 9153699	3
67	Self-adaptive-deer hunting optimization-based optimal weighted features and hybrid classifier for automated disease detection in plant leaves.	
66	Intelligent Identification Method of Crop Species Using Improved U-Net Network in UAV Remote Sensing Image. **2022**, 2022, 1-9	1

65	Enhancing the performance of transferred efficientnet models in leaf image-based plant disease classification. 1	0
64	A Survey on Diseases Detection for Agriculture Crops Using Artificial Intelligence. **2021**,	0
63	Implementation of Virtual Instrumentation System for Estimation of Eaten Leaf Area using Digital Image Processing. **2021**,	0
62	Wheat Yellow Rust Disease Infection Type Classification Using Texture Features.. **2021**, 22,	3
61	Classification of Plant Leaves Using New Compact Convolutional Neural Network Models.. **2021**, 11,	1
60	Aerial and Optical Images-Based Plant Species Segmentation Using Enhancing Nested Downsampling Features. **2021**, 12, 1695	
59	Mango Leaf Stress Identification Using Deep Neural Network. **2022**, 34, 849-864	
58	Rust Disease Classification Using Deep Learning Based Algorithm: The Case of Wheat.	
57	Identification of Apple Disease Grades Based on the Attention Mechanism of Lesion Location and Improved Data Enhancement Method. **2022**, 2022, 1-10	
56	A comprehensive survey on leaf disease identification & classification. 1	1
55	Potato Plant Disease Detection using Deep Learning. 63-66	
54	Wheat Rust Disease Classification using Edge-AI. **2022**,	
53	Enhancing crop productivity through autoencoder-based disease detection and context-aware remedy recommendation system. **2022**, 239-262	
52	Deep Learning Based Disease, Pest Pattern and Nutritional Deficiency Detection System for Zingiberaceae Crop. **2022**, 12, 742	1
51	Deep Neural Network (DNN) Mechanism for Identification of Diseased and Healthy Plant Leaf Images Using Computer Vision.	
50	Detection of Anomalous Grapevine Berries Using Variational Autoencoders. **2022**, 13,	1
49	LEMOXINET: Lite ensemble MobileNetV2 and Xception models to predict plant disease. **2022**, 70, 101698	1
48	Rice Leaf Disease Detection using Mobile Net and Inception V.3. **2022**,	

47	CRUN-Based Leaf Disease Segmentation and Morphological-Based Stage Identification. **2022**, 2022, 1-13	0
46	VGG-ICNN: A Lightweight CNN model for crop disease identification.	3
45	A Robust Intelligent System for Detecting Tomato Crop Diseases Using Deep Learning. **2022**, 14, 1-21	4
44	Disease Recognition of Maize Leaf Based on KNN and Feature Extraction.	1
43	Deep Transfer Learning-Based Rice Leaves Disease Diagnosis and Classification model using InceptionV3. **2022**,	0
42	Olive Disease Classification Based on Vision Transformer and CNN Models. **2022**, 2022, 1-10	1
41	A Survey on Different Plant Diseases Detection Using Machine Learning Techniques. **2022**, 11, 2641	0
40	Comparison of various deep convolutional neural network models to discriminate apple leaf diseases using transfer learning.	0
39	Control of phytopathogens using sustainable biogenic nanomaterials: Recent perspectives, ecological safety, and challenging gaps. **2022**, 372, 133729	0
38	A comprehensive review on detection of plant disease using machine learning and deep learning approaches. **2022**, 24, 100441	4
37	Tomato Disease Recognition Using a Compact Convolutional Neural Network. **2022**, 10, 77213-77224	4
36	Rice Transformer: A Novel Integrated Management System for Controlling Rice Diseases. **2022**, 10, 87698-87714	3
35	Application of Machine Learning Techniques in Modern Agriculture: A Review. **2022**,	0
34	Efficient attention-based CNN network (EANet) for multi-class maize crop disease classification. 13,	0
33	Classification of Fine-Grained Crop Disease by Dilated Convolution and Improved Channel Attention Module. **2022**, 12, 1727	0
32	A hybrid attention-enhanced DenseNet neural network model based on improved U-Net for rice leaf disease identification. 13,	1
31	Intelligent plant disease diagnosis using convolutional neural network: a review.	1
30	Novel approach for quantification for severity estimation of blight diseases on leaves of tomato plant.	0

29	fMaize: A Seamless Image Filtering and Deep Transfer EfficientNet-b0 Model for Sub-Classifying Fungi Species Infecting Zea mays Leaves. **2022**, 26, 914-921	0
28	Multi-Class Plant Leaf Disease Detection Using a Deep Convolutional Neural Network. **2022**, 13, 1-14	0
27	Analysis of Deep Learning Methods for Prediction of Plant Diseases. **2022**, 160-168	0
26	An IoT & AI-assisted Framework for Agriculture Automation. **2022**,	0
25	Recommendation of Pesticides Based on Automation Detection of Citrus Fruits and Leaves Diseases Using Deep Learning. **2023**, 105-116	0
24	A Machine Learning Approach for Classification of Lemon Leaf Diseases. **2022**, 254-265	0
23	Tomato plant leaf disease detection using generative adversarial network and deep convolutional neural network. 1-9	0
22	Monitoring Tomato Leaf Disease through Convolutional Neural Networks. **2023**, 12, 229	2
21	Deep Convolutional Neural Network Approach for Tomato Leaf Disease Classification. **2023**, 199-208	0
20	Plant Leaf Disease Detection using KNN Algorithm. 21-25	0
19	Deep Learning based Plant Leaf Disease Detection and Classification. **2022**,	0
18	A Systematic Review on the Detection and Classification of Plant Diseases Using Machine Learning. **2022**, 11, 1-25	1
17	Categorization of Nutritional Deficiencies in Plants With Random Forest. **2022**,	0
16	Detection of Apple Plant Diseases Using Leaf Images Through Convolutional Neural Network. **2023**, 11, 6594-6609	0
15	Performance evaluation of PCA based reduced features of leaf images extracted by DWT using random Forest and XGBoost classifier.	0
14	A Comprehensive Review of Scab Disease Detection on Rosaceae Family Fruits via UAV Imagery. **2023**, 7, 97	0
13	Tomato Leaf Disease Classification via Compact Convolutional Neural Networks with Transfer Learning and Feature Selection. **2023**, 9, 149	1
12	Integration of nondecimated quaternion wavelet transform and neighborhood texture patterns for disease classification in banana (Musa spp.) foliage.	0

11	DLMC-Net: Deeper lightweight multi-class classification model for plant leaf disease detection. **2023**, 75, 102025	0
10	A Bibliometric and Word Cloud Analysis on the Role of the Internet of Things in Agricultural Plant Disease Detection. **2023**, 6, 27	0
9	A Mobile-Based System for Detecting Ginger Leaf Disorders Using Deep Learning. **2023**, 15, 86	1
8	Papaya Diseases Detection Using GLCM Feature Extraction and Hyperparatuning of Machine Learning Approach. **2023**, 145-158	0
7	Classification of Nutritional Deficiencies in Cabbage Leave Using Random Forest. **2022**,	0
6	Deep Learning for the Classification of Cassava Leaf Diseases in Unbalanced Field Data Set. **2023**, 101-114	0
5	Corrosion Analysis Through an Adaptive Preprocessing Strategy Using The K-Means Algorithm. **2023**, 219, 586-595	0
4	Improved Precision Crop Yield Prediction Using Weighted-Feature Hybrid SVM: Analysis of ML Algorithms. 1-13	0
3	Automated Mango Leaf Infection Classification using Weighted and Deep Features with Optimized Recurrent Neural Network Concept. 1-19	0
2	Damage assessment of soybean and redroot amaranth plants in greenhouse through biomass estimation and deep learning-based symptom classification. **2023**, 100243	0
1	Rice Leaf Disease Detection and Classification Using a Deep Neural Network. **2022**, 231-243	0