IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 8, April 2023

Fruit Disease Identification using Image Processing Techniques and Feature Extraction

Brahmaji. G[1], G. Hari Priya[2], D. Harsha[3], CH. Dhana Lakshmi[4], B. Satish[5]
Assistant Professor, Department of Computer Science and Engineering[1]
Students, Department of Computer Science and Engineering [2,3,4,5]
Raghu Institute of Technology, Visakhapatnam, India

Abstract: *The detection and classification of fruit diseases using image processing is an important field of research in agriculture. This technology can help farmers quickly and accurately identify diseased fruits and take appropriate measures to control the spread of the disease. The proposed system involves capturing images of fruits using a camera, followed by processing and analysis of these images to detect and classify the type of disease present. The images are first pre-processed to remove noise and enhance their quality, after which they are segmented to identify regions of interest. Various features such as color, texture, and shape are extracted from these regions, which are then used to classify the disease. Machine learning algorithms such as support vector machines (SVM), artificial neural networks (ANN), and decision trees are commonly used to classify diseases. The performance of these algorithms is evaluated based on metrics such as accuracy, precision, and recall. The proposed system has the potential to significantly reduce the time and effort required for disease detection and classification. This can help farmers to take timely and informed decisions to prevent the spread of the disease, ultimately resulting in increased crop yield and profitability.*

Keywords: fruit diseases, image processing, machine learning, classification, support vector machines, artificial neural networks, decision trees, accuracy, precision, recall

REFERENCES

[1]. Bhardwaj, S., Jain, R., & Gupta, S. (2018). A review of fruit detection and recognition techniques for fruit harvesting robots. Journal of Cleaner Production, 195, 48-62.
[2]. Kaur, P., & Singh, K. (2020). Detection and classification of apple fruit diseases using image processing techniques: A review. Journal of Food Measurement and Characterization, 14(4), 1364- 1384.
[3]. Kumar, V., Chhabra, R., & Singh, P. (2018). Automatic detection and classification of apple diseases: A review. Computers and Electronics in Agriculture, 153, 221-233.
[4]. Mohanty, S. P., Hughes, D. P., &Salathé, M. (2016). Using deep learning for image-based plant disease detection. Frontiers in plant science, 7, 1419.
[5]. Moshou, D., Bravo, C., West, J. S., McCartney, H. A., & Ramon, H. (2010). Automatic detection of 'yellow rust' in wheat using reflectance measurements and neural networks. Computers and Electronics in Agriculture, 70(1), 58-65.\
[6]. Sannakki, S. S., &Shiralashetti, S. C. (2017). Image processing techniques for plant disease detection. International Journal of Computer Science and Mobile Computing, 6(6), 171-177.
[7]. Srivastava, A., & Agarwal, S. (2019). Fruit disease detection using image processing techniques: A review. International Journal of Recent Technology and Engineering, 8(1S3), 510-515.
[8]. Zhang, X., Zhang, S., & Guo, M. (2018). A survey on deep learning for plant classification. Neurocomputing, 300, 83-99.
[9]. Y.Liao, D.Cheng, L.Zhang, Q.Huang, and B.Yang, "Deep Learning for plant disease diagnosis: A comprehensive review," Computers and Electronics in Agriculture, vol. 183, p. 105019, 2021.

IJARSCT
ISSN (Online) 2581-9429
International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
Impact Factor: 7.301
Volume 3, Issue 8, April 2023

[10]. .S. V. Gorawala, H. P. Patil, and A. R. Dixit, "Review of techniques for detection and classification of fruit diseases using image processing," International Journal of Computer Applications, vol. 180, no. 12, pp. 7-11, 2018.