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Comparing Image Processing and AI Techniques for Disease Detection in Plants

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Abstract : Agriculture plays an important role in society since it is one of the main sources of food in the world. To help the production and yield of crops, precision agriculture makes use of technologies aiming at improving productivity and quality of agricultural commodities. One of the problems hampering quality of agricultural production is the disease affecting crops. Failure in detecting diseases in a short period of time can result in small or big damages to production, causing financial losses to farmers. In order to provide a map of the contributions destined to the early detection of plant diseases and a comparison of the accuracy of the selected studies, a systematic literature review of the literature was performed, showing techniques for digital image processing and neural networks. We found 35 interesting tool support alternatives to detect disease in 19 plants. Our comparison of these studies resulted in an overall average accuracy of 87.45%, with two studies very closer to obtain 100%.

Keywords : pattern recognition, image processing, deep learning, precision agriculture, smart farming, agricultural automation
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