UNIVERSITI TEKNOLOGI MARA

MAIZE LEAF DISEASE DETECTION AND CLASSIFICATION USING CONVOLUTIONAL NEURAL NETWORK (CNN)

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ABSTRACT

Maize or corn is one of the sources of food for people around the world. Some of the countries able to produce their own of corn and some of them did not. However the production of every country is not the same which causes the country to import the product from other country. It is, however, prone to a number of illnesses that may materially reduce its output and quality. Particularly leaf ailments are a serious danger to maize output where it consist of many categories of the maize leaf disease that lead to unproductivity of corn. Implementing prompt and focused management methods for these disorders requires early identification and correct diagnosis. Convolutional neural network (CNN), in particular, have demonstrated tremendous promise in image processing and pattern recognition applications in recent years. The goal of this work is to create a CNN-based method for identifying and categorizing maize leaf diseases. With the help of the suggested technology such as drone imaging, computer vision and mobile apps, farmers and agricultural professionals would be able to swiftly and reliably identify disease signs by automating the identification process. Images of both healthy and diseased maize leaves will be collected for the research, which will result in a diversified dataset. The quality and variety of the dataset are increased by the use of preprocessing techniques including picture enhancement and augmentation. The labelled dataset is then used to create and train a CNN architecture which define the type of the leaf based on its category. The dataset used in this project consist of 800 images of four category of leaf achieved 90 percent of accuracy by using the CNN algorithm.

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