

DEEP LEARNING APPROACH TO DETECT BANANA PLANT DISEASES WITH IMAGE PROCESSING

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Abstract

Banana is a famous fruit that commonly available across the world because it instantly boosts your energy. Bananas are one most consumed fruit in the world. According to modern calculations, Bananas are grown in around 107 countries since it makes a difference to lower blood pressure and to reduce the chance of cancer and asthma.

Banana plant diseases have become a severe problem in Sri Lanka and all over the world. This damages banana cultivation by affecting the banana quality and quantity. The classical and ancient strategy for reconditioning and identifying banana plant diseases is based on bare eye observation. Identifying from the naked eyes is not a good method cause it spends time and it depends on the knowledge. And the main reason is the less availability of experts.

In order to identify banana plant leaf diseases, the author has decided to develop a Convolutional Neural Network (CNN) followed by a residual architecture. There wasn't an open-source dataset so the author had to create a dataset by doing image augmentations. Two models were created with removing the background and without removing the background and was able to get 97.14% and 98.7%.

Keywords: Deep learning, Banana disease detection, Residual networks, Feature extraction