

Early Perception of Pest and Pathogen Detection in Citrus plants Improvement using Deep Learning

Ramanathan Lakshmanan

School of computer science and engineering, VIT Vellore

Statement of the problem: In the agriculture sector most probably getting high yield and larger production of food products were in large scale production units like orchards and big scale farmers. In these citrus orchards were producer and supplier of more predominant scale citrus fruits and products, these plant pathogens, pests, and drought were causing the major issue economical loss, inferior quality and less production rates compared to the demand. One of the most well-known instances of AI in the realm of image identification is the facilitation of clarity using image processing methods. These image processing methods went through extensive development in order to provide a clearer perspective of plant pests, plant diseases, and drought acquired in plants so that more accurate data could be extracted from them. The purpose of the study is to identify the plant disease and pest at the early stages of the impacted on the plant. In the earlier stage of pathogen and pest detection leads to stopping the vibrant spreading of these problem.

Methodology & theoretical orientation: In citrus monitoring model will check whether the input images acquired is healthy, diseases and pests. These deep learning mechanism R-CNN and clustered comparative classification algorithm is used for earlier stage pathology and pest detection on the citrus plant leaf images.

Findings: The earlier perception of the pests and pathogen detection in this study is very important for knowing the reason of ferocious spreading. The system integrates a sufficient number of layers in the proposed deep learning model for feature extraction and classification. Then collecting the set of features for particular time period will come to know the nuances in the image. These features of nuances will used the clustered comparative classification for identifying the pathogens and pests in the early stage.

Conclusion: The pest and pathogens detection at earlier time using the deep learning mechanism R-CNN and clustered comparative classification algorithms we recognize the severity of the infection spreading the citrus orchids. These recommendations are made to rectify the citrus orchids issues immediately. The convolution layer was used in the R-CNN model getting the features from images, it will repeatedly collect in regular interval of time and they are processed in clustered comparative classification algorithm for knowing the savages of pathogens and pests at earlier. After knowing the spreading percentage, the recommendations are made for earlier stage perception of the issues in citrus orchids, and these would be helpful for rectifying the problem at initial stage.

Biography

Ramanathan L has received his B.E. in Computer Science & Engineering from Bharathidasan University, Tiruchirappalli, India, and M.E in Computer Science from Sathyabama University, Chennai, India and a Ph.D. degree in Computer Science and Engineering from VIT University, Vellore, India. He is currently working as an Associate Professor in VIT, Vellore, India. His area of interest is Data Mining, Database Systems, Software Engg, Cloud Computing, and Virtualization.