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Real-Time Agrobase Solution

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Abstract: *Identifying plant diseases is essential for sustainable agriculture, but it is difficult to monitor manually. Image processing is used to detect plant diseases. Disease detection involves image acquisition, image per-processing, image segmentation, feature extraction, and classification.*

Keywords: Plant disease detection, feature extraction, image processing

I. INTRODUCTION

Agriculture is essential for the development of the nation, with 60-70% of rural households dependent on it.
Farmers are facing problems due to climate change, soil erosion and biodiversity loss.
Farmers sow a variety of crops, but diseases affect the growth of crops due to climate change. To increase production and benefit farmers, study of crop diseases and the proper solution for them is important. Farmers don't get the proper advice and fertilizers from local shops, so there is a need for a platform where farmers can get proper fertilizers and advice on how to take care of the farm. Another major problem is managing agricultural waste.
Agricultural waste is used as raw data for products and food for animals.
Farmers should have a system where they can easily buy their agricultural waste and the one who needs it will be available for them easily. Machine learning is used to detect and analyze crops diseases. This article introduces an all-in-one solution for all agricultural practices.

II. METHODOLOGY

Dateset is used to prepare a model and train it. Image evolution is used to estimate the generalization accuracy of a model on future data. Application android uploads images on server and displays results. Web application is developed using python to fetch images and start processing on data.

2.1 Advantages

- Monitoring of large fields.
- Prediction accuracy is high and having robust working when training example have error in them.

2.2 Disadvantages

- DL methods require a greater amount of data to detect plant disease, which is a drawback due to small datasets and lack of images.

III. RESULTS AND DISCUSSION

The accuracy of Real-time detection of apple leaf disease using a deep learning approach based on improved convolution neural networks is less than the proposed system due to the different lighting conditions and background properties of the images taken from the real field. To overcome this, a mixed variety of images was used during the training phase (heterogeneity).

IV. CONCLUSION

An application was built to identify disease affected plants and healthy plants. It was implemented from scratch and produced a decent accuracy. Future work is to increase the number of images in the predefined database and modify the architecture to achieve better accuracy

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