ENHANCING RICE CROP DISEASE DETECTION USING DEEP LEARNING

GROUP – 8

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DATASET USED:

This dataset contains the original healthy and diseased rice leaf images**.** There are two folders **'train'** and **'validation'** present**.**

Link for dataset:
https://drive.google.com/file/d/1e3wZ3T4eV7xa4nPhW8ELBJDwVhqvzvFx/view?usp=sharing

MINIMUM SYSTEM REQUIREMENTS:

- Memory: 4 GB.
- Graphics Card: NVIDIA GeForce GTX 970.
- CPU: Intel Core i5-4590.
- File Size: 2 GB.
- OS: Windows 7 SP1.

ENVIRONMENT USED:

- Google Colab: Upload given notebooks and dataset in google colab to run and execute the code.

LOADING THE DATASET AND PREPROCESSING:

DatasetLoadingandPreprocessing.ipynb (Command Line)

This file loads the dataset, performs noise removal and segmentation on the original rice leaf images. The pre-processed images are stored in two separate folders:

- Training_resized
- Validation_resized

Link for pre-processed folder:
https://drive.google.com/drive/folders/1QSR5zTcKvNvfVeaVkjp6YOPpA3O0PxDa?usp=sharing

Note: The segmentation process is to be performed separately for both **'train' and 'validation'** folders, by changing the path to dataset accordingly.

BUILDING AND IMPLEMENTING THE MODELS:

There are three model files:

- ResNet1.ipynb
- MobilNet1.ipynb
- NewDenseNet.ipynb

In each of these files, the path to the pre-processed image dataset **(Training_resized and Validation_resized)**, needs to be updated in the training path and validation path.

The model gets trained and gives the following measures:

- Training Accuracy
- Validation Accuracy
- Training Loss
- Validation Loss

CONCLUSION:

Out of these three models, DenseNet-201 has given better accuracy (about 74 % of Validation Accuracy). So, the final trained model has been saved under the name:

DenseNet-201_model.h5.