



NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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Batch Number	CB-11
Team Members	Mata Ajay Kiran (21471A05H9) Kasthala Haggayi (21471A05G4)
Guide	S. N. Tirumala Rao M.Tech., Ph.D
Title	Plant Disease Detection Using Deep Learning: A Focus on Pathogen-Based Classification
Domain/Technology	DEEP LEARNING
Base Paper Link	https://ieeexplore.ieee.org/document/10147120
Dataset Link	https://data.mendeley.com/datasets/b83hmrzth8/1
Software Requirements	Browser: Any latest browser like Chrome Operating System: Windows 7 Server or later Python (COLAB)
Hardware Requirements	SystemType: Intel Core i5 or above RAM: 8 GB Number of cores:5 Number of Threads: 4
Abstract	Agriculture forms a very crucial section in every country's economy. Its sustainable practice requires monitoring plant health; it is essential for the disease to be detected before any visible symptoms appear so that damage to the crop is minimized and the negative effects of chemicals are reduced. This paper introduces an automated approach to the detection and classification of plant diseases using deep transfer learning models. For this work, it focused on the use of Keras-based EfficientNetV2. The system not only detects diseases but also indicates the pathogens responsible, focusing upon images from the Agri-ImageNet dataset along with real-world photographs of cauliflower and sunflower plants. In contrast to such methods, this one does not face the limitations that traditional methods do by making controlled environments through uniform background since it utilized deep models trained in images taken in natural settings. It exhibits a better accuracy with the proposed methodology, as the series EfficientNetV2 reached an accuracy of 96% in the testing procedure. This contribution also advances real-time accurate detection of plant diseases, thereby enabling early intervention and more sustainable agricultural practice.

Signature of the student(s)

Signature of the Guide

Signature of the project coordinator

