



**NARASARAOPETA ENGINEERING COLLEGE (AUTONOMOUS)**  
**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**2024-2025**

<b>Batch Number</b>	DG1
<b>Team Members</b>	P.Ujwala Devi(21471A05O3) R.Nandini(21471A05O7) S.Vasanth(21471A05P3)
<b>Guide</b>	Dr.S.N.Tirumala Rao M.Tech,Ph.D
<b>Title</b>	Integrating CNN,LSTM and DenseNet201 for Efficient Real Time Plant Disease Detection
<b>Domain/Technology</b>	DEEP LEARNING
<b>Base Paper Link</b>	<a href="https://scijournals.onlinelibrary.wiley.com/doi/10.1002/jsfa.12700">https://scijournals.onlinelibrary.wiley.com/doi/10.1002/jsfa.12700</a>
<b>Dataset Link</b>	1. <a href="https://drive.google.com/drive/folders/1RmwlgHoMN0L65DC_nCbqX2-jW8zABpSB?usp=drive_link">https://drive.google.com/drive/folders/1RmwlgHoMN0L65DC_nCbqX2-jW8zABpSB?usp=drive_link</a> (Google Drive). 2. <a href="https://github.com/wasswashafik/Turkey-Apple-Disease-Dataset">https://github.com/wasswashafik/Turkey-Apple-Disease-Dataset</a> (Github).
<b>Software Requirements</b>	Browser: Any latest browser like Chrome Operating System: Windows 7 Server or later Python (COLAB)
<b>Hardware Requirements</b>	SystemType: Intel Core i3 or above RAM: 8 GB Number of cores:3 Number of Threads: 4
<b>Abstract</b>	Quick detection of plant diseases and pests is essential to prevent agricultural and environmental losses.This study developed a proposed model which is CNN-LSTM+DENSENET201 hybrid model, combining pre-trained models like DenseNet, ResNet, and GoogleNet with an LSTM ensemble classifier. Testing on plant datasets showed over 99.4% accuracy, outperforming traditional and transfer learning models. Unsupervised methods, such as anomaly detection, reduce reliance on labeled data, providing a cost-effective solution. Future work aims to improve scalability and expand testing to more datasets and plant types.

**Signature of the student(s)**

**Signature of the Guide**

**Signature of the project coordinator**