Sreenidhi Institute of Science and Technology
Department of Computer Science and Engineering
MAJOR PROJECT (8E896)

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ABSTRACT

This project presents an automated crop disease prediction system utilizes a Convolutional Neural Network (CNN) architecture with multiple convolutional and fully connected layers for feature extraction and classification to classify diseases from images of affected plants. The primary objective of the system is to provide an efficient and accessible method for early detection of crop diseases, reducing the need for constant expert intervention.The system is trained on a diverse dataset of crop images, enabling it to identify visual symptoms of common diseases with high accuracy. By leveraging advanced machine learning algorithms, it ensures that disease classification is both reliable and adaptable across multiple crop types and environmental conditions.Beyond mere classification, the system provides farmers with structured recommendations, including preventive measures, remedial steps, and appropriate medication or treatment options. This feature makes the solution not only diagnostic but also prescriptive, ensuring that farmers receive actionable insights rather than just detection results.

By combining disease prediction with actionable guidance, the proposed approach aims to bridge the gap between diagnosis and intervention. The system has the potential to serve as a decision-support tool for precision agriculture, reducing the reliance on manual expertise, improving disease management, and contributing to sustainable agricultural practices.

Key words : Crop disease detection, Computer vision, Deep learning, Convolutional Neural Networks (CNN), Image classification, Precision agriculture, Smart farming, Automated diagnosis, Decision-support system, Sustainable agriculture

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