

LITERATURE SURVEY – DEEP LEARNING

Abbas et. al (2021) implemented a deep-learning based method to detect diseases in tomatoes by utilizing the Conditional Generative Adversarial Network (C-GAN) for generation of tomato leaf plant images. One of the primary characteristics of C-GAN is that it avoids overfitting by adding additional data to an existing dataset. The proposed model in this paper was the DenseNet121 using transfer learning which had shown immaculate accuracy when compared to models such as VGG-19, Xception, and MobileNet.

Agarwal & Godavarthi (2023) integrates artificial intelligence to identify the skin disorders on the face using a proposed deep learning model of RestNet152, in consideration of the fact that it has relatively a lot more layers and its ability to detect hidden properties in difficult input data. It was hence proven in the result as the model classified all the skin diseases at a rate of at least 75% across all metrics.

Karthick et al (2024) leverages FPGAs for their parallel processing capabilities to demonstrate promising advancements in real-time and is highly accurate when it comes to image classification, therefore integrating it with highly optimized CNN. This intricate, yet an innovative approach addresses the requirement for accurate plant health monitoring for sustainable agricultural practices.

Sharma et al (2024) proposes a visual question-answering assistant in LLaVA-PlantDiag that answers open-ended questions on plant pathology in a conversational manner. The model generates question-answer pair and fine-tune large vision-language model on the custom dataset. The performance of the LLaVA-PlantDiag betters the state-of-the-art models such as Gemini, GPT4, and other open-source models when it comes to factors such as mulit-turn Visual Quality Assurance (VQA) and Classification.