

Project Design Phase-I

Proposed Solution Template

Date	16 October 2022
Team ID	PNT2022TMID03412
Project Name	Project - Fertilizers Recommendation System for Disease Prediction

Proposed Solution Template

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	In agricultural aspects, if the plant is affected by leaf disease, then it reduces the growth and productivity. Generally, the plant diseases are caused by the abnormal physiological functionalities of plants. The issue occurs in agriculture practicing areas, particularly in rural regions.
2.	Novelty / Uniqueness	<ul style="list-style-type: none">• We have combined the features of CNN and a pre-trained model resulted in an improved performance in the prediction.• Data is fed to the CNN. And, its output is sent as the input to our pre- trained model ResNet50. This increased our model's prediction accuracy to be above 85%
3.	Social Impact / Customer Satisfaction	<ul style="list-style-type: none">• By recommending the appropriate fertilizers for the diseases predicted, the quality of food products improves. It also controls the disease in plants.

		<ul style="list-style-type: none"> • This also maximizes the crop yield by using the land efficiently.
4.	Business Model (Revenue Model)	<ul style="list-style-type: none"> • Helps farmers to grow more food using fewer resources by reducing the damage caused by irrelevant fertilizers and diseases attacked. • With the proposed model crop yield, farm efficiency, agricultural product output will be increased • A high gain can be seen in the agricultural output and profit will be increased.
5.	Scalability of the Solution	<ul style="list-style-type: none"> • Deep learning technique is used to identify the diseases and better fertilizer suggestions that can be recommended for those diseases. • Using Deep Learning techniques for recommendation reduces the time taken to detect diseases than other traditional methods.