FERTILIZERS RECOMMENDATION SYSTEM FOR DISEASE PREDICTION

PROPOSED SOLUTION

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PROBLEM STATEMENT:

- The main way to live a life in our country is through agriculture. More than 70% of the livelihood of the population depends on agriculture.
- It is also a great source of the country's economy. In order to make this field more profitable for farmers, it is necessary to grow suitable crops and make the crop free from pests and pathogens in their fields.
- The predominant problem among farmers is the choice of selecting the correct fertilizer for the affected plant and making it cure to get a good and profitable yield.
- They need to pay more attention to pests or diseases that reduce plant growth.
- Improper management results in agricultural product loss.

KEY QUESTIONS (PROBLEM STATEMENT):

- Whom does the problem affect?

  Persons who do agriculture.
- What are the boundaries of the problem?

  People who grow crops face issues of plant disease.
- What is the issue?

  In agricultural aspects, if the plant is affected by leaf disease, then it reduces growth and productivity. Generally, plant diseases are caused by the abnormal physiological functionalities of plants.
- When does the issue occur?

  During the development of the crops as they will be affected by various diseases.
- Where does the issue occur?

  The issue occurs in agriculture-practicing areas, particularly in rural regions.
- Why is it important that we fix the problem?

  It is required for the growth of quality food products. It is important to maximize the crop yield.

SOLUTION DESCRIPTION:

- Agriculture is the most important sector in today's life. Most plants are affected by a wide variety of bacterial and fungal diseases.
- Diseases on plants placed a major constraint on production and a major threat to food security.
- Hence, early and accurate identification of plant diseases is essential to ensure high quantity and best quality.
- In recent years, the number of diseases on plants and the degree of harm caused has increased due to the variation in pathogen varieties, changes in cultivation methods, and inadequate plant protection techniques.
- An automated system is introduced to identify different diseases in plants by checking the symptoms shown on the leaves of the plant.
- Deep learning techniques are used to identify the diseases and suggest the precautions that can be taken for those diseases.
- These different leaf symptoms and diseases are predicted in image processing and this can be done by CNN layer, the image is analyzed and processed and the fertilizer needed for plant growth is predicted.

NOVELTY:

- The global fertilizer market was valued at $184.60 billion in 2021 and is projected to reach $251.57 billion by 2030, growing at a CAGR of 3.55% from 2022 to 2030.
- For fertilizer, the market is segmented into application, type and form.
- Nowadays, without the addition of fertilizer crop yield and agriculture productivity would be significantly reduced.
- Without agriculture no one can able to live their life happily, for that plant growth is mainly important for growth and agricultural productivity. Plant diseases can be controlled only by fertilizer usage on the affected plant.
- Agriculture particularly on fertilizer has a big market in the future.

CUSTOMER SATISFACTION:

- Here customer refers to farmers who buy fertilizer for their plant growth, especially for affected plants has introduced some fertilizer policies to know the merits and demerits of fertilizer.
- How to use fertilizer for affected plant's ratio level of fertilizer.
- This show how the farmer is satisfied using the fertilizer policy.
- Using this fertilizer policy customer is satisfied a lot and gain a profit in their production.
- Many fertilizers including organic and inorganic fertilizer has come to market to cure disease plant while developing.
- By filling the demands of a farmer it can lead India a developed country.

BUSINESS MODEL:

- Now a day government takes several measures to increase the productivity of crops.
- For that farmer needs to put crop insurance near areas.
- If Farmers know the correct fertilizer for diseases plants, they get it from the shop and put it into the plant and they get good productivity.
- If the productivity was good and quality they get a good price for their crop in the market and they lead a happy life.

SCALABILITY OF SOLUTION:

- Using deep learning techniques we can predict the fertilizer for disease plants.
- At first we want to preprocess the image then apply the CNN algorithm to the dataset and find how deep neural networks detect the disease.
- Using a web portal the farmer can able to upload an image of the diseased plant and touch predict button they got recommended fertilizer.