

Harvestify

Best Farmer Recommendation System

Course Project: ME 781



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Project Objective



We are a Mumbai based startup in the field of Agriculture Industry aiming to revolutionalise the agriculture sector by the use of Machine learning



We have developed a robust tool for prediction of best suitable crop and fertiliser, also we can predict if the crop have any disease effectively



We plan to enter the B2C market of the Agriculture industry with our farming solutions with a aim to serve farmers at cheap rates

Problem Definition



Products

→ Harvestify is a web application which recommends farmer which is the best crop they should grow and the best fertilizer to its to maximise their yield of crops. It also predicts if the crop grown, has any disease so the rest of the crops are not damaged due to that one bad crop.

Customer

→ Farmers are our main Customers

Competitors

→ 1. Crop advisor (Advising crop cultivation)
2. Spacenus (Enabling regenerative agriculture)

Our Speciality

→ The system is cheap, available for everyone, very efficient, fast and gives results with very high accuracy.

Technology landscape assessment

Patents	<u>Generating a crop recommendation</u>
Published Literature	<ol style="list-style-type: none">1. Suresh, G., Kumar, A.S., Lekashri, S. and Manikandan, R., 2021. Efficient crop yield recommendation system using machine learning for digital farming. International Journal of Modern Agriculture, 10(1), pp.906-914.2. Kumar, A., Sarkar, S. and Pradhan, C., 2019, April. Recommendation system for crop identification and pest control technique in agriculture In 2019 International Conference on Communication and Signal Processing (ICCSP) (pp. 0185-0189). IEEE.
Open Libraries	Numpy, Pandas, matplotlib, Pytorch, Sklearn, Seaborn, Pickle
Proprietary Libraries	https://github.com/deep87we/Recommendation-System-for-Farmers

Project Outcomes

Screenshots of our Web app

Recommendation System for Farmers

Crop Recommendation

Find out the most suitable crop to grow in your farm 🌱

Information

Crop recommendation is one of the most important aspects of precision agriculture. Crop recommendations are based on a number of factors. Precision agriculture seeks to define these criteria on a site-by-site basis in order to address crop selection issues. While the "site-specific" methodology has improved performance, there is still a need to monitor the systems' outcomes. Precision agriculture systems aren't all created equal. However, in agriculture, it is critical that the recommendations made are correct and precise, as errors can result in significant material and capital loss.

Results

Papaya are recommended by the AI for your farm.

Note: This ML application is for educational/demo purposes only and cannot be relied upon. Check the source code [here](#)

Nitrogen: 2, Phosphorus: 1, Potassium: 1, Temperature: 20.00, Humidity in %: 20.00, Ph: 3.00, Rainfall in mm: 400.00

Predict

Recommendation System for Farmers

Fertilizer Recommendation 🌱

Find out the most suitable Fertilizer to add in your farm to increase the Productivity

Information

Fertilizer recommendation is one of the most important aspects of precision agriculture. Fertilizers recommendation are based on a number of factors. Precision agriculture seeks to define these criteria on a site-by-site basis in order to address crop selection issues. While the "site-specific" methodology has improved performance, there is still a need to monitor the systems' outcomes. Precision agriculture systems aren't all created equal. However, in agriculture, it is critical that the recommendations made are correct and precise, as errors can result in significant material and capital loss.

Results

Urea Fertilizer is recommended by the AI for your farm.

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Temperature: 20.00, Humidity in %: 20.00, Moisture: 10.00, Soil_Type: Black, Crop_Type: Barley, Nitrogen: 1, Potassium: 1, Phosphorus: 1

Predict

Recommendation System for Farmers

Disease Recommendation

Model loaded using ResNet

Choose a file

Drag and drop file here Limit 200MB per file • JPG

test-image-1.jpg 20.2KB

Results

Potato healthy Disease is Detected by the AI for your farm.

Note: This ML application is for educational/demo purposes only and cannot be relied upon. Check the source code [here](#)

Predict

Made with Streamlit

Crop Recommender

Fertilizer Recommender

Disease Prediction

Code and Dataset Links

Google Colab Links

1. [Crop Recommendation](#)
2. [Fertilizer Recommendation](#)
3. [Crop Disease Prediction](#)

Video link of our Full Project

[Click here for our video link](#)

Dataset Links

1. [Crop Dataset](#)
2. [Fertilizer Dataset](#)
3. [New Plant Disease Dataset](#)