

FarmDtect LTD

FARMDTECT

BUSINESS PRESENTATION

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HELLO FRIENDS!

GREETING FROM US

We are thrilled to present FarmDtect—a groundbreaking solution designed to transform crop management through advanced AI technology. This presentation will share our vision, key achievements, and plans. We appreciate your time and consideration as we explore how FarmDtect can significantly impact agriculture. Let's dive in!

Thank you

ABOUT US

GET TO KNOW US BETTER

we are driven by the belief that advanced technology and innovative solutions can transform agriculture. Our mission is clear: to empower farmers with cutting-edge AI tools that enhance crop health, optimize management practices, and boost yields.

What sets us apart is not just our technological expertise but our commitment to understanding the unique challenges faced by each farmer. We tailor our solutions to meet these specific needs, delivering impactful results and supporting sustainable agricultural practices.



AI-DRIVEN CROP DIAGNOSTIC PLATFORM FOR RURAL FARMERS

Project Overview

Our project aims to develop an AI-driven platform that leverages image classification technology to diagnose crop diseases and provide comprehensive insights and actionable recommendations to rural farmers. By integrating image data with environmental factors, we strive to enhance agricultural productivity and promote sustainable farming practices.

OBJECTIVES

01 Identify Crop Diseases

Use image classification to accurately identify various crop diseases.

02 Predictive Model Development

Develop a model that combines image data with environmental factors to provide comprehensive insights into crop health.

03 Actionable Recommendations

Provide farmers with practical advice on managing and preventing crop diseases based on the model's predictions.



04 Time Series Analysis

Investigate the use of time series analysis to predict the spread of crop disease



BUSINESS PROBLEM

Rural farmers often face significant challenges in managing crop health due to:

- Limited access to expert agronomists.
- Difficulty in identifying pests, diseases, and other crop problems.
- Lack of timely and actionable recommendations to mitigate issues.

SOLUTION

Data-Driven Crop Diagnostic Platform: A user-friendly mobile application where farmers can upload images of their crops. Our AI algorithms will analyze the images to diagnose issues such as pests, diseases, and nutrient deficiencies. The platform will also incorporate environmental data to provide a holistic view of crop health.



KEY FEATURES

- **Instant Diagnostics:** Real-time analysis of crop images with high accuracy.
- **Predictive Insights:** Combining image data with environmental factors for comprehensive health insights.
- **Actionable Recommendations:** Tailored advice on how to address identified issues and prevent future occurrences.
- **Support Network:** Access to community forums, real-time chat support, and local field agents for additional assistance.



VALUE PROPOSITION

- **Improved Crop Yields:** Early and accurate detection of crop issues leads to timely interventions.
- **Cost Savings:** Reduces the need for expensive expert consultations and mitigates crop loss.
- **Sustainability:** Promotes sustainable farming practices through informed decision-making.



DATA UNDERSTANDING



IMAGE DATA FOR CROP DISEASES

PlantVillage Dataset

A public dataset containing over 50,000 images of diseased and healthy plant leaves. Available on platforms like Kaggle or directly from PlantVillage.

Mendeley Data Repository

Offers datasets specifically focused on crop diseases, pests, and nutrient deficiencies.

Offline Data Processing

Collaborate with institutions like the International Institute of Tropical Agriculture (IITA) or local agricultural universities for access to specialized image datasets.

NASA Earth Observing System Data and Information System (EOSDIS):

Provides satellite data related to weather, climate, and environmental factors.

WorldClim Database

Offers global climate data that can be used to understand environmental conditions affecting crop health.

Offline Data Processing

Provides real-time and historical weather data that can be integrated into your platform for predictive modeling.

TARGET CUSTOMERS

OUR CLIENTS COME FROM EVERYWHERE



With a global perspective, our marketing agency has proudly served multinational clients, delivering tailored strategies that transcend borders and cultures, ensuring consistent brand success on a worldwide scale.

Small to Medium-Sized Farmers

Individual farmers and small agricultural enterprises needing accessible crop management tools.

Agricultural Cooperatives

Groups supporting farmers, ideal for bulk adoption and widespread impact.

Government and NGOs

Agencies involved in agricultural development, helping integrate FarmDtect into broader programs.

Extension Services

Professionals who can use FarmDtect to enhance their advisory support for farmers.

PlantVillage Dataset

- **Source:** Kaggle, PlantVillage
- **Columns:**
 - **image_id:** Unique identifier for each image
 - **image_path:** Path to the image file
 - **crop_type:** Type of crop (e.g., apple, grape, tomato)
 - **disease_type:** Type of disease (e.g., apple scab, grape black rot)
 - **health_status:** Health status of the plant (healthy or diseased)
 - **image:** The image data itself

Mendeley Data Repository

- **Source:** Mendeley Data Repository
- **Columns:**
 - **image_id:** Unique identifier for each image
 - **image_path:** Path to the image file
 - **crop_type:** Type of crop
 - **disease_type:** Type of disease or pest
 - **nutrient_deficiency:** Type of nutrient deficiency (if applicable)
 - **location:** Geographic location where the image was taken
 - **image:** The image data itself

Agricultural Research Institutions

- **Source:** Collaborations with research institutions
- **Columns:**
 - **image_id:** Unique identifier for each image
 - **image_path:** Path to the image file
 - **crop_type:** Type of crop
 - **disease_type:** Type of disease or pest
 - **severity:** Severity of the disease or pest infestation
 - **treatment:** Treatment applied (if any)
 - **image:** The image data itself

NASA Earth Observing System Data and Information System (EOSDIS)

- **Source:** NASA EOSDIS
- **Columns:**
 - **date:** Date of the observation
 - **latitude:** Latitude of the observation location
 - **longitude:** Longitude of the observation location
 - **temperature:** Surface temperature (in Celsius)
 - **precipitation:** Precipitation levels (in mm)
 - **humidity:** Relative humidity (in %)
 - **solar_radiation:** Solar radiation levels (in W/m²)
 - **soil_moisture:** Soil moisture levels (in m³/m³)

WorldClim Database

- **Source:** WorldClim Database
- **Columns:**
 - **location_id:** Unique identifier for each location
 - **latitude:** Latitude of the location
 - **longitude:** Longitude of the location
 - **temperature_mean:** Mean temperature (in Celsius)
 - **temperature_min:** Minimum temperature (in Celsius)
 - **temperature_max:** Maximum temperature (in Celsius)
 - **precipitation:** Precipitation levels (in mm)
 - **season:** Season of the year (e.g., winter, summer)

OpenWeatherMap

- **Source:** OpenWeatherMap API
 - **Columns:**
 - **timestamp:** Timestamp of the weather data
 - **location_id:** Unique identifier for each location
 - **latitude:** Latitude of the location
 - **longitude:** Longitude of the location
 - **temperature:** Temperature (in Celsius)
 - **humidity:** Humidity levels (in %)
 - **wind_speed:** Wind speed (in m/s)
 - **weather_condition:** Description of the weather condition (e.g., clear, cloudy, rainy)
 - **precipitation:** Precipitation levels (in mm)
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Benefits of Adding These Datasets:

- **Comprehensive Diagnostics:** By integrating diverse image datasets, our AI algorithms can accurately identify a wide range of crop diseases, pests, and nutrient deficiencies across various crops.
- **Enhanced Predictive Insights:** Combining image data with environmental factors such as temperature, humidity, and precipitation improves the accuracy and relevance of our predictive models.
- **Holistic Crop Health Analysis:** Environmental datasets enable us to provide farmers with a complete view of their crop health, considering both biotic and abiotic stress factors.
- **Localized Recommendations:** Environmental data helps tailor recommendations to the specific conditions of each farmer's location, ensuring practical and effective interventions.
- **Sustainability:** Access to detailed environmental data supports sustainable farming practices by guiding farmers on optimal resource usage and preventive measures.



BUSINESS MODEL

- Freemium Service: Basic diagnostic services are free, with premium features available through subscriptions.
- Partnerships and Grants: Collaborations with agricultural organizations and funding from NGOs and government programs.
- Data Monetization: Selling anonymized data insights to research institutions and stakeholders.



IMPLEMENTATION PLAN

- Develop MVP: Create a minimum viable product focusing on core functionalities.
- 2. Pilot Program: Test the platform in select regions, gather feedback, and refine.
- 3. Full Launch: Roll out the platform across targeted areas with a robust marketing strategy.
- 4. Scale and Expand: Continuously improve features and expand into new regions.

CONCLUSION

This project not only addresses the critical needs of rural farmers by providing them with accessible, accurate, and timely crop diagnostics but also contributes to the broader goal of sustainable agricultural development. By integrating image classification with environmental data and predictive modeling, we can offer a comprehensive solution to enhance crop health and productivity. With your support, we can drive significant positive impact in the agricultural sector.



THANK YOU

● FOR YOUR NICE ATTENTION