DIGITAL FARMING HUB

Enrollment no:159

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INTRODUCTION

The project is designed as a capstone project to demonstrate how digital solutions can transform traditional farming into smart, data-driven, and accessible agriculture. By integrating technology into agriculture, **AgroSol** bridges the gap between traditional and modern farming practices. The platform empowers farmers by providing real-time, data-driven insights and easy access to vital farming resources.

OVERVIEW

AI-based Crop Disease Detection – Farmers can upload images of affected crops, and the AI model will diagnose the disease and suggest remedies.

Equipment Rental and Sharing System – Farmers can rent or share tools and machinery to reduce costs and increase accessibility.

Knowledge Hub – A space for farmers to learn about crop management, weather conditions, and best agricultural practices.

PROBLEM STATEMENT

Farmers often face limited access to digital tools and expert guidance. Identifying crop diseases and finding solutions is time-consuming and costly without proper digital support.

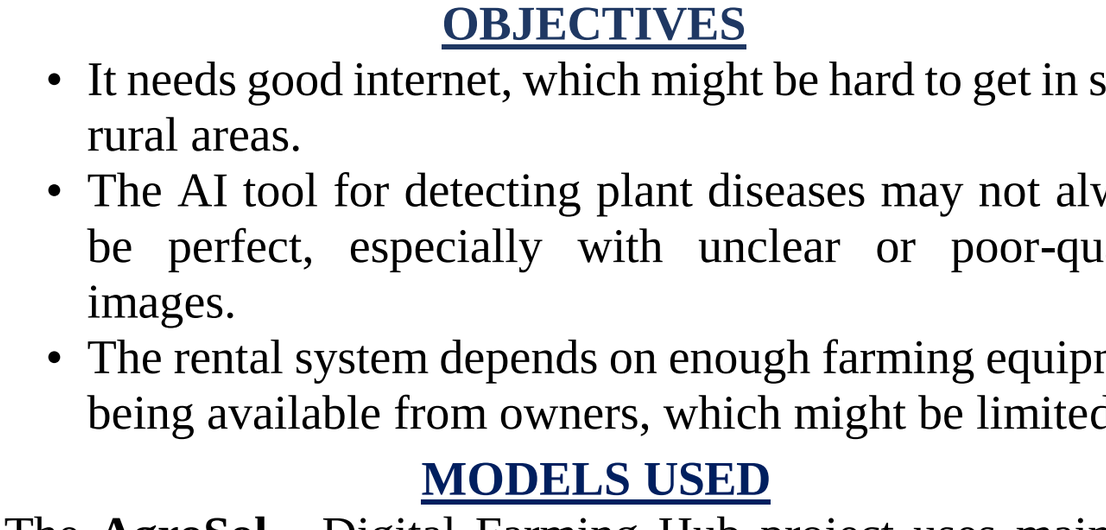
Additionally, there is no unified platform for equipment rental or knowledge sharing. Existing systems address these problems individually, making it difficult for farmers to manage multiple resources.

OBJECTIVES

- It needs good internet, which might be hard to get in some rural areas.
- The AI tool for detecting plant diseases may not always be perfect, especially with unclear or poor-quality images.
- The rental system depends on enough farming equipment being available from owners, which might be limited.

MODELS USED

The **AgroSol -** Digital Farming Hub project uses mainly a Convolutional Neural Network (CNN) model for crop disease detection. The CNN model processes images of plant leaves to identify different diseases by learning patterns, colors, and textures



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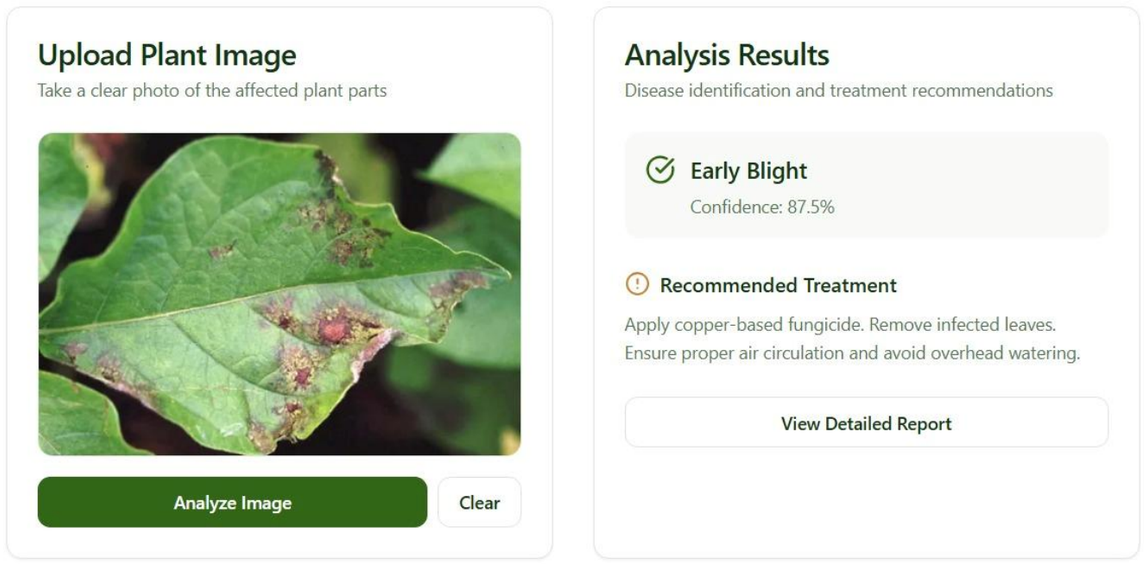
LIMITATIONS

"**AgroSol -** Digital Farming Hub" project is to create a centralized, technology-driven platform that integrates AI-powered plant disease detection, an agricultural equipment rental system, and a knowledge-sharing hub to empower farmers. Ultimately, the project seeks to transform traditional agriculture into a smart, efficient, data-driven, and sustainable ecosystem that enhances productivity, reduces costs, and supports eco-friendly farming methods.



PROPOSED METHODOLOGY

The proposed methodology for **AgroSol – Digital Farming Hub** involves a systematic approach that combines data science, artificial intelligence, and web technologies to build an efficient, user-friendly, and scalable farming platform. Each phase is carefully designed to ensure accuracy, usability, and real-world applicability.

REFERENCES

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[2] **"AI-Based Plant Disease Detection Using CNN," IEEE Transactions on Agriculture,2023**
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[3] **Food and Agriculture Organization (FAO), Digital Agriculture Report, 2022**
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