



ARTEMIS HACKATHON 2026



TITLE PAGE

- **Problem Statement No – 01**
- **Problem Statement Title - Agriguard AI**
- **PS Category- Software**
- **Team Name – Falcon05**



PROBLEM STATEMENT



Problem:-

- Farmers cannot easily identify plant diseases at early stages
- Lack of agricultural experts in rural areas
- Wrong pesticide usage increases cost and soil damage
- Crop loss reduces farmer income

Who faces this?

- Small and medium farmers
- Rural agricultural communities

Current Challenges:-

- Manual inspection
- Delayed diagnosis
- No instant expert guidance

Real-world relevance:-

- India is agriculture dependent
- Early disease detection increases productivity
- Supports Digital India & Smart Farming



PROPOSED SOLUTION (YOUR IDEA)



Concept:-

- An AI-powered web application that:
- Detects plant diseases using leaf images
- Provides suitable treatment suggestions instantly

How it works (High Level):-

- Farmer uploads plant leaf image
- ML model predicts disease
- System shows:
- Disease name
- Confidence percentage
- Suggested treatment

Main Features:-

- Image-based disease detection
- Instant AI prediction
- Simple web interface
- Treatment & pesticide suggestion
- Works on mobile browser

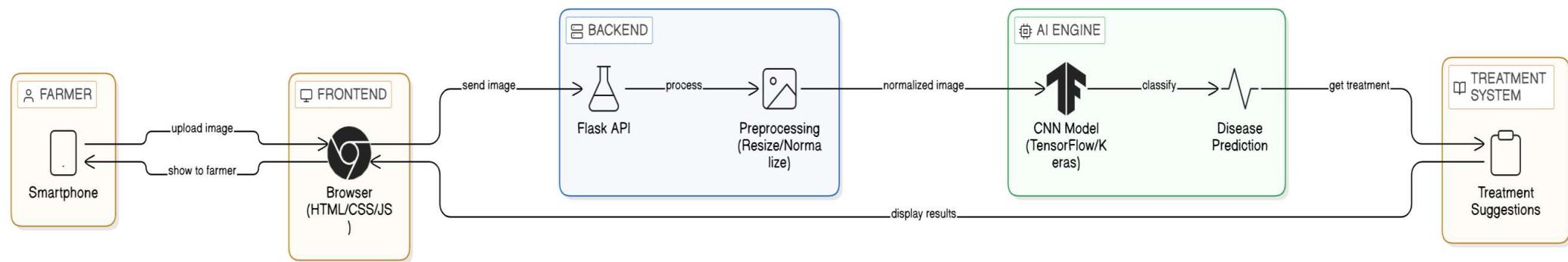


TECHNICAL APPROACH



Technologies Used:-

- Python
- TensorFlow / Keras (CNN Model)
- Flask (Backend API)
- HTML
- CSS
- JavaScript





FEASIBILITY AND VIABILITY



Feasibility:-

- No hardware required
- Low cost implementation
- Uses open-source tools

Challenges:-

- Model accuracy depends on dataset
- Internet requirement
- Different lighting conditions in images

Solutions:-

- Data augmentation
- Model retraining
- Optimize for mobile usage



CHALLENGES & RISKS

- Incorrect prediction risk
- Limited dataset coverage
- Farmers may upload unclear images

Mitigation:-

- Confidence score display
- Clear instructions for image upload
- Continuous model improvement





IMPACT AND BENEFITS



Social Impact:-

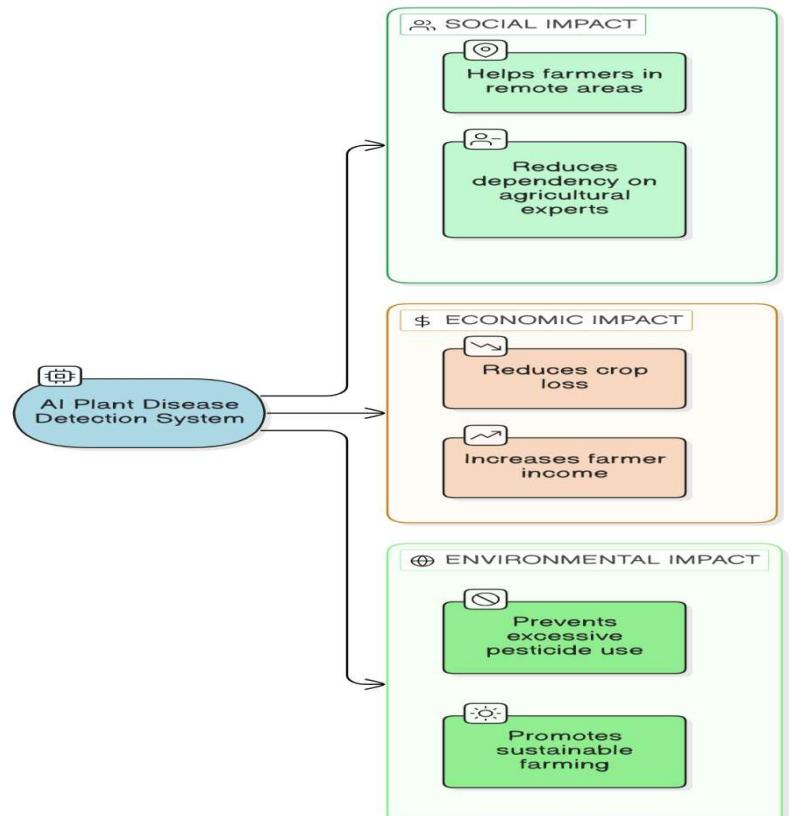
- Helps farmers in remote areas
- Reduces dependency on experts

Economic Impact:-

- Reduces crop loss
- Increases farmer income

Environmental Impact:-

- Prevents excessive pesticide use
- Promotes sustainable farming



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TARGET USERS

- Farmers
- Agricultural students
- Government agriculture departments
- Agri start-ups





FUTURE SCOPE

- Multi-language support (Hindi, Marathi, etc.)
- Voice-based interaction
- Offline model deployment
- Integration with weather data
- Government agriculture portal integration





BUSINESS MODEL / PROFIT STRATEGY

- Free basic disease detection
- Premium subscription for:
 - * Advanced analytics
 - * Personalized farming tips
- Government collaboration
- Agri-company partnerships





RESEARCH AND REFERENCES

- Plant Village Dataset
- TensorFlow Documentation
- Research papers on CNN for plant disease detection



IMPORTANT INSTRUCTIONS



Please ensure below pointers are met while submitting the Idea PPT:

1. Try to avoid paragraphs and post your idea in points /diagrams / Infographics /pictures
2. Keep your explanation precise and easy to understand
3. You can only use provided template for making the PPT without changing the idea details pointers (mentioned in previous slides).

Note - You can delete this slide (Important Pointers) when you give the seminar.