



HACK KRMU 5.0

**PROBLEM STATEMENT ID : PS-07**

**TEAM NAME : RUNTIME TERRORS**

**TEAM ID : HK-024**

**TEAM MEMBERS : ASHISH, DEEPAK, LOKESH,  
RAMA KRISHNA**

## PROBLEM & SOLUTION



### The Problem - Farmers Still Rely on Guesswork

- 20–30% crop loss due to late disease detection
- Wrong pesticide usage leads to financial loss
- No immediate expert access in villages
- Language & literacy barriers
- Existing apps are too complex

### The Solution - Introducing KhetSaathi

- AI Avatar based crop disease detection
- Location-specific treatment advice
- Voice guidance in local languages
- Structured 7-day action plan
- Mobile + Kiosk access model

 **KhetSaathi**



## FLOW OF SOLUTION





## TECH STACK & APPROACH



### NLP Layer

- Multilingual support
- Text-to-Speech engine
- Regional dialect adaptation

### Infrastructure

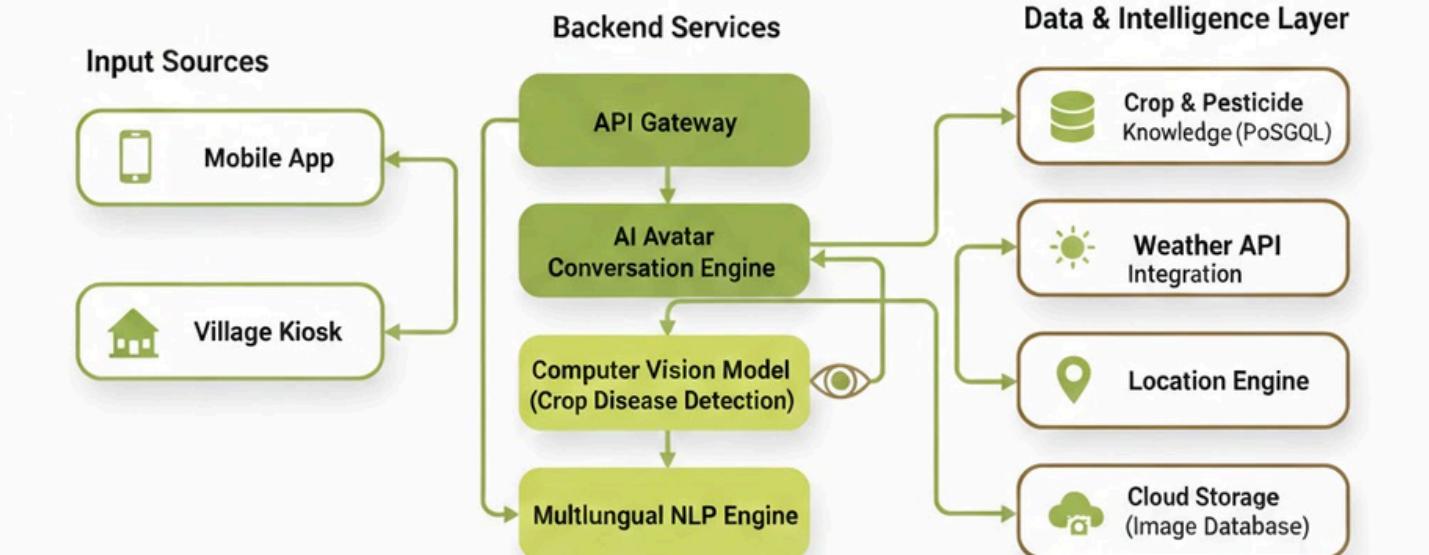
- Scalable cloud architecture
- Image compression for low bandwidth

### AI Layer

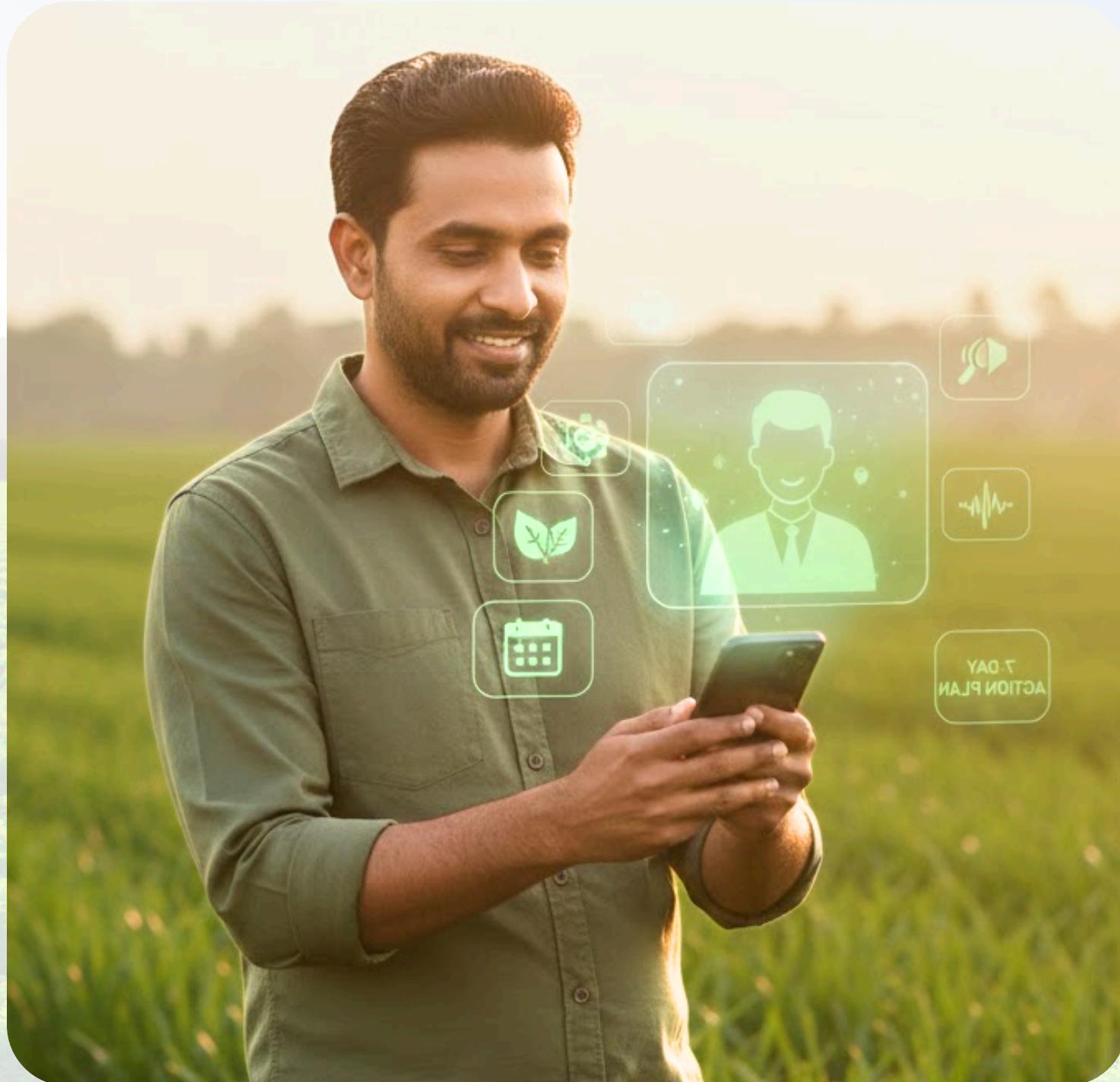
- Computer Vision (MobileNet / EfficientNet)
- Plant disease dataset (PlantVillage + regional data)

### Backend

- FastAPI / Node.js
- Cloud deployment (AWS/GCP)



## UNIQUENESS & INNOVATION FACTOR



### What Makes KhetSaathi Different?

- Voice-first interface for low-literacy users
- Structured 7-day treatment plan (not just one-time advice)
- Location-aware pesticide recommendations
- Hybrid access model (App + Village Kiosk)
- Designed for low-end Android & poor network

## FEASIBILITY & CHALLENGES

### Feasibility

- Existing plant disease datasets available
- Lightweight AI models deployable on cloud
- Multilingual NLP APIs already mature
- Cloud infrastructure scalable

### Challenges

- Image quality from farmers
- Low internet connectivity
- Accuracy across crop varieties
- Keeping pesticide data updated

### Mitigation

- Image guidelines + assisted kiosk
- Offline queue system
- Continuous model retraining
- Admin dashboard for updates

## RESEARCH & REFERENCE

A recent peer-reviewed review article highlights how machine learning models applied to crop images can rapidly and accurately identify disease symptoms, outperforming traditional labor-intensive field surveys. This research consolidates findings on state-of-the-art image capture, AI model performance, and the applicability of computer vision techniques across multiple crop types and environmental conditions, demonstrating the feasibility and effectiveness of image-driven disease diagnostics in agriculture, which directly supports the core technology used in KhetSaathi.

<https://bsppjournals.onlinelibrary.wiley.com/doi/10.1111/ppa.14006?af=R>



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# KhetSaathi

Your Crop's  
**Digital Doctor**

Fasal Bachao.  
Bhavishya Bachao.