

An innovative monitoring system designed for farmers in all connectivity scenarios. Provides better crop health tracking, documentation, and actionable insights for





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enhanced productivity.

Problem

The lack of technology adoption and insufficient in-person labor in farms are significantly affecting management capabilities. **Unpredictable weather** leads to challenging terrain, vast farm sizes complicate comprehensive farmland monitoring for farmers, while varying working styles further **hinder communication**.

Design Question

Hardware and Software Diagrams



How can we leverage a **remote monitoring system** to proactively assist farmers in remotely managing fields when trying to **save time, labor** costs and preventing crop illness?

Solution

Our solution includes **a stationary camera device** capable of capturing multi-angle images, adaptable to field conditions with image transfer via LoRa or WiFi. Integrated into our app, it delivers daily status notifications to farmers. We also incorporated **generative AI** to analyze images like a virtual farm worker, providing concise explanations.

Research Process

Through visits to **2 organic farmers' markets**, **4 small-scale farms**, and **1 large-scale farm**, we collected valuable feedback on the challenges farmers face.

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We **identified farmer needs** for frequent crop checks and detailed records, focusing on growth, soil conditions, and leaf color for optimal management.







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FarmGazer App

List View

Seamlessly view sections based on field size and the number of devices deployed, ensuring easy management and monitoring.

	Peas 2 Coverage 1 acres Updated 4 images 10 mins ago
	Peas 3 Coverage 2 acres Updated 2 images 23 mins ago
	Wheat 2 Coverage 3 acres Updated 4 images 12 mins ago
Home	Support Notification Account

We might need to water this area more often. Jan 6, 2023	ability to leave
e your comment here	comments for colleague
Check growing process	collaboration on tasks.
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Wheat 1	
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Capture Time 08:20 am	Tracking
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Andrew Nelson We might need to water this area more often.	Select a specific date
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A Melline season	development from
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Capture Time 08:20 am

Comments

images and growth

progress, alongside the

GLOBAL INNOVATION EXCHANGE UNIVERSITY of WASHINGTON



Yusam Hsu Mavis Hu Joshua Rafael Sanchez Yuang Tong

MSTI Robotics MSTI Connected Devices MSTI Robotics MSTI Robotics