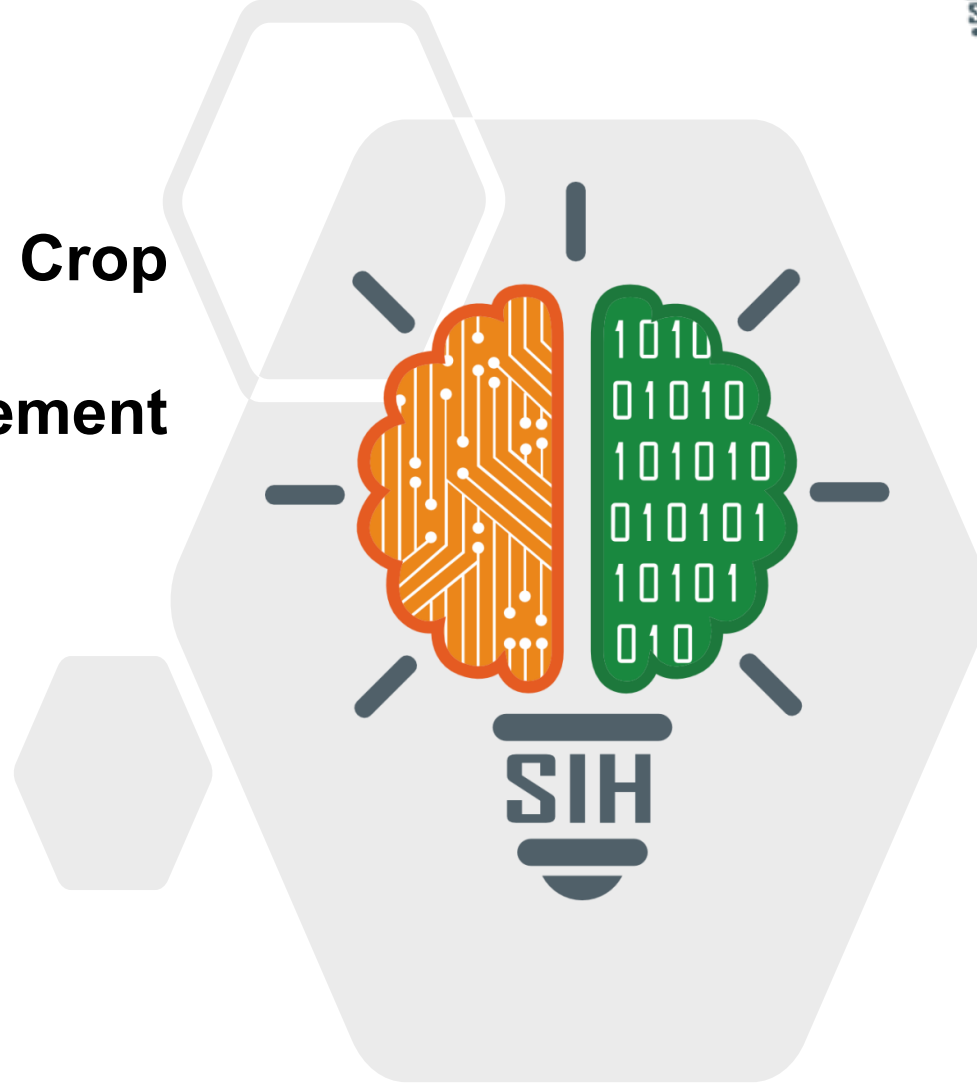


- **Problem Statement ID – SIH1638**
- **ProblemStatementTitle-Ai-Driven Crop Disease prediction and management system.**
- **Theme- Agritech**
- **PS Category- Software**
- **Team ID-SR2652**
- **Team Name- Bytebeginners**



Autodesk Research and develop a design on autonomous small precision focused machine for planting crops or weeding :-

The Problem & Our Solution :

The Challenge:

- **✗ Farmers** lack immediate access to experts for diagnosing soil fertility.
- **✗ Inefficient Input Use** – Due to insufficient guidance, farmers misuse fertilizers, pesticides, and water, increasing costs and lowering profitability
- **✗ Weather Vulnerability** – Unpredictable monsoons, droughts, and unseasonal rains expose farmers to high risks of crop failure.

Our Solution: Krishi Shayak:

- **✓** A smartphone app that acts as a pocket friendly.
- **✓** Instant diagnosis of soil fertility using just a phone's camera.
- **✓** Based on soil fertility and weather condition, it suggests the best crop to grow.
- **✓** After harvest, it links farmers with verified buyers through a B2B platform.



TECHNICAL APPROACH

- **Select/Create Farm Plot** – GPS auto-detects location; farmer selects a saved plot.
- **Answer Simple Questions** –
 - Last crop grown?
 - Fertilizer/manure used in last 6 months?
 - Any issues like purple leaves or yellow edges?
 - Planned crop for next season?
 - Approximate area of the plot?
- **Capture Soil Photo** – Farmer takes a guided photo of the soil.
- **Data Collection & Processing** – App gathers GPS, answers, and soil photo.
- **AI & Weather Forecasting** – AI analyzes data along with real-time and long-term weather forecasts.
- **Soil Health Report** – Provides a clear, easy-to-understand overview.
- **Fertilizer Recommendation** – Suggests exact type and quantity required.
- **Crop Suitability & Alternatives** – Advises if the planned crop is viable based on soil and weather, and suggests better options.
- **Yield & Profit Forecast** – Shows estimated harvest, revenue, and profit per acre, along with simple soil tips.



PROBLEM SOLVING SMART WAY

- Traditional methods are slow and hard to access in remote areas.
- Soil nutrients cannot be judged by photos alone.
- A smarter approach is needed to build farmer trust.
 - **Start: Check Soil Condition**

- **Q1: What was the last crop grown?**

- Soybean → Adds nitrogen to soil
- Corn (or heavy feeders) → Reduces nutrients & phosphorus

- **Q2: Was fertilizer added in the last 6 months?**

- Yes → Note nutrient levels
- No → Possible nutrient deficiency

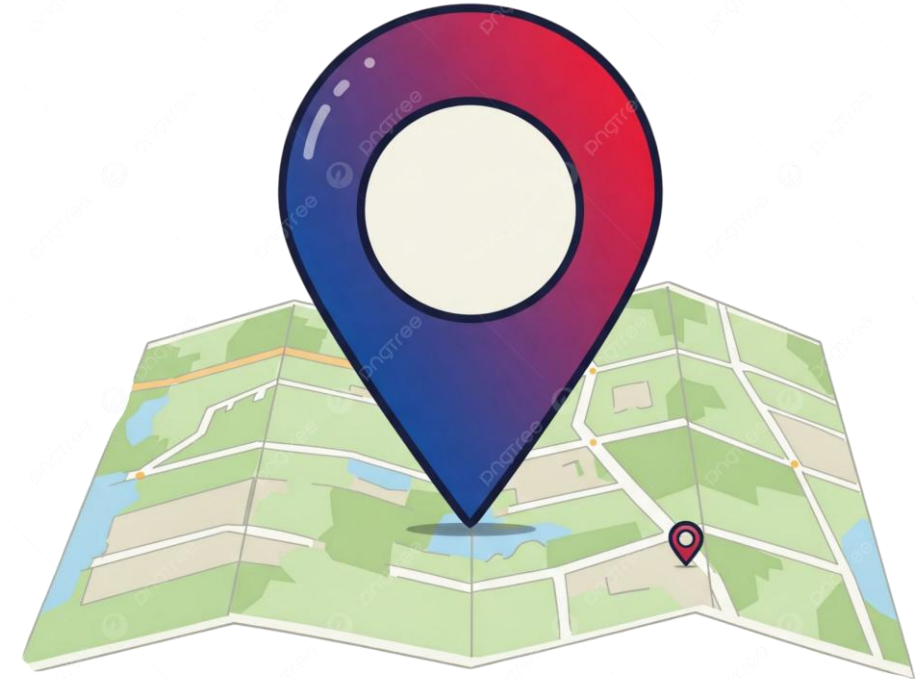
- **Q3: Were crop residues left after harvest?**

- Yes → Nitrogen fertilizer not needed
- No → Nitrogen fertilizer may be required

- **Analyze Responses**

- **Generate Soil Status Report**

- **End: Provide Fertilizer & Crop Recommendations**



IMPACT AND BENEFITS



- ✓ Farmers will be able to **cultivate more efficiently** with the help of modern solutions, leading to **higher crop yield**.
- ✓ Increased production will directly result in **better income and financial stability** for farming families.
- ✓ Reduced crop losses and timely disease detection will ensure **lower risks of debt and crop failure**.
- ✓ With improved earnings, farmers will have access to **better education, healthcare, and living standards**.
- ✓ The farming profession will become **more respected and sustainable**, encouraging future generations to take up farming with pride.
- ✓ Ultimately, fewer cases of farmer distress and suicides will be seen, as farming will transform into a **profitable and secure livelihood**.



RESEARCH AND REFERENCES

As first-year engineering students in the AIML branch, we may not have advanced coding knowledge yet, but with the help of AI and our own efforts, we have successfully completed around 60–70% of the app making, which is shown below.



Krishi Shayak

[CLICK here to see the app4](#)



Scan to download app &
share feedback

