

AgriConnect

(Cross-platform mobile application + Website)

IDEA OVERVIEW

(AWARENESS + REWARDS)



Referral System

(FARMERS)



Voice based HMI

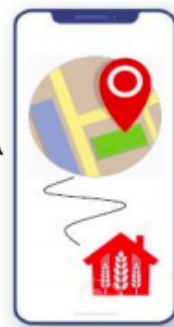


Personalised Scheme Recommendation



Crop Monitoring

(DATA ANALYSIS)



Optimise your route



Geofencing

(WAREHOUSES + DEALERS)

IMPLEMENTATION / SOLUTION

➤ User Experience and Awareness of Various Schemes:

- There are various websites that display the government schemes ,but they are not so user friendly for the target audience and the data displayed is not filtered according to relevance.

Solution:

➤ **Personalized Recommendation System + Voice HMI:**

- The data (schemes) relevant to the user is displayed. Personalization is done by implementing a recommendation system that recommends the user only the **government schemes** that is **applicable** to him; which is displayed in minimal format or with the help of Voice Human Machine Interface(HMI).

➤ **Web Crawler :**

- For automatically importing the new schemes and flushing the expired one's (**auto-updating schemes**), we will use a Web Crawler, which will help us **get the recent data** from the official websites and update it accordingly. This will **auto-notify** the user.

➤ **Referral System :**

-In order to increase awareness , we could implement a referral system where each user gets **reward points for referring the app** (bringing more users in the network) ,which they can **redeem** ,to get discounts in industrial equipment, fertilizers,etc.Thus connecting farmers with the official suppliers.

➤ AgriLogistics Loss:

-Transferring goods from cultivation centres to processing centres or markets is an impediment.

Goods get damaged due to heat , humidity and various other factors in the absence of cold chain transportation.

Solution:

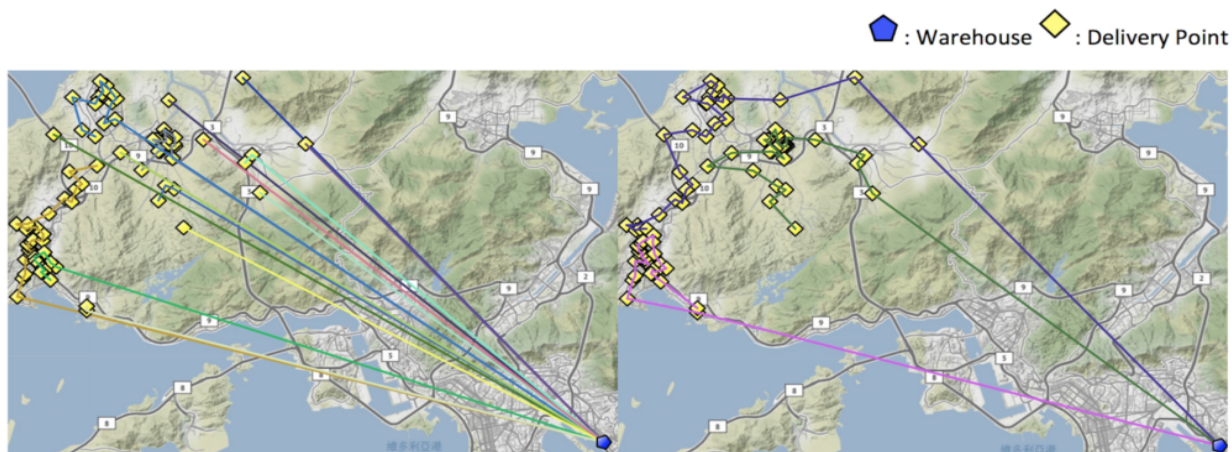
➤ **Route Optimization + Geofencing :**

-Use of cold chain transport facilities can **reduce post-harvest losses**.

According to Warehousing (Development and Regulation) Act of 2007,banks can provide loan against the warehouse receipts.

-With the help of **Geofencing** , our app identifies the **cold storages nearby** and determines the **shortest** and optimized **route** between the farmers , suppliers and cold storages by taking into consideration the weather , time , and other features **using ML** (unsupervised clustering) + **Genetic algorithm** (to find shortest route within the clusters).As a result ,the farmers connect with the official cold storages and they can avail loans with the cold storage receipt.

-These loans enable farmers to access the funds they require.They can also **monitor market prices** and **sell** their produce, wholly or partly, when prices reach suitable levels.



(Without Clustering)

(With Clustering)

Note :Clustering helps to group locations and hence reducing the no of transport vehicles.

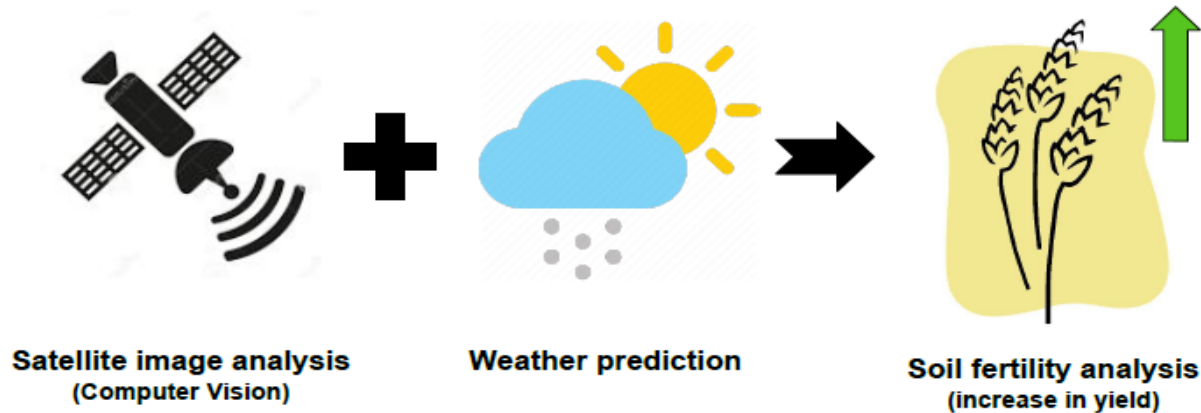
➤ **Increase in yield:**

- Agricultural production is dependant on natural conditions, such as climate (day length and temperature), and weather. Suitable temperature and climate conditions can reduce the wastage of crops. If the correct crop to be grown in the soil is chosen, wastage can be reduced.

Solution:

➤ **Satellite Image Processing for soil analysis + Crop Monitoring :**

- With the help of **Deep Learning** (Computer Vision) techniques on satellite images of various regions + the weather of that region taken into consideration , the **best suitable crops** to be grown can be **suggested to the farmer** through the app.



➤ **Decrease Manual Sorting:**

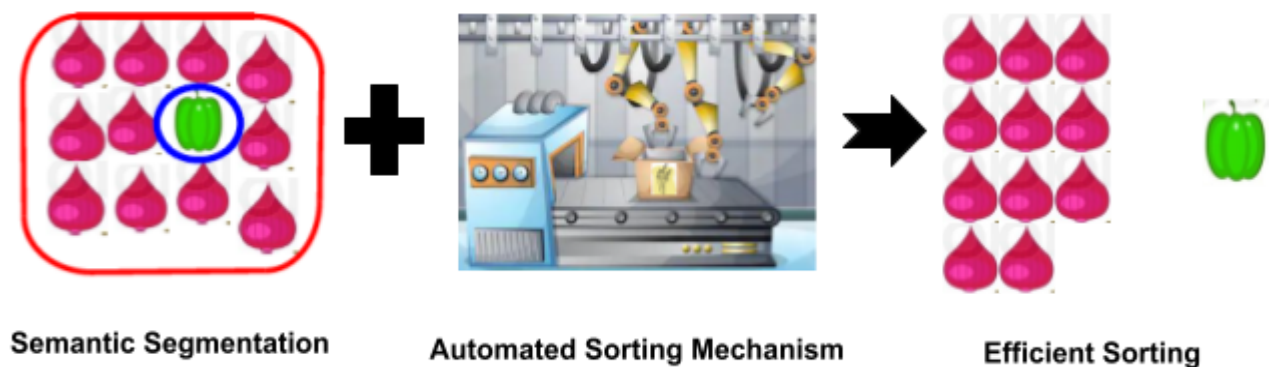
-Fruits and vegetables are stored together in manufacturing units. Sorting has to be done manually which is biased, time consuming and inefficient .Thus, this becomes a bottle-neck in the supply process.

Solution:

➤ **Automatic Sorting (Image Segmentation) :**

- Automatic **sorting and classification** of agriculture produce is a post harvest technology where the application of image processing is introduced for automation. This method is more advantageous than human labor with more **accuracy, reliability, speed** and **consistency**.

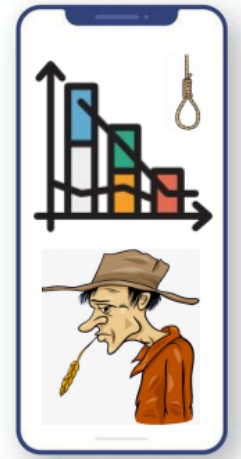
-We will implement an ML model that will run inference on **live video** of the conveyor belt and do **image segmentation** and thus classify between damaged and good crops.



➤ **Analysis:**

-An interactive **dashboard** for the concerned officials to look into various **metrics**, displayed in the form of plots and charts.

For example increase/decrease in growth of various crops within a region , fertilizers used , suicide rates ,etc can be visualized and **insights** can be obtained.It will thus help the officials to take the required measures.



Insights

TECHSTACK

