

AgroDrone

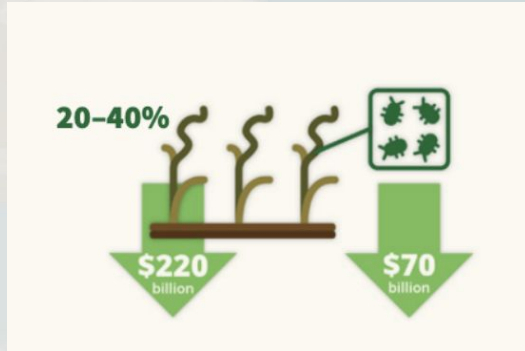
Autonomous Crop Control System
Patrol
Navigate, Monitor, and Assist



Larry & Leon



Background Information



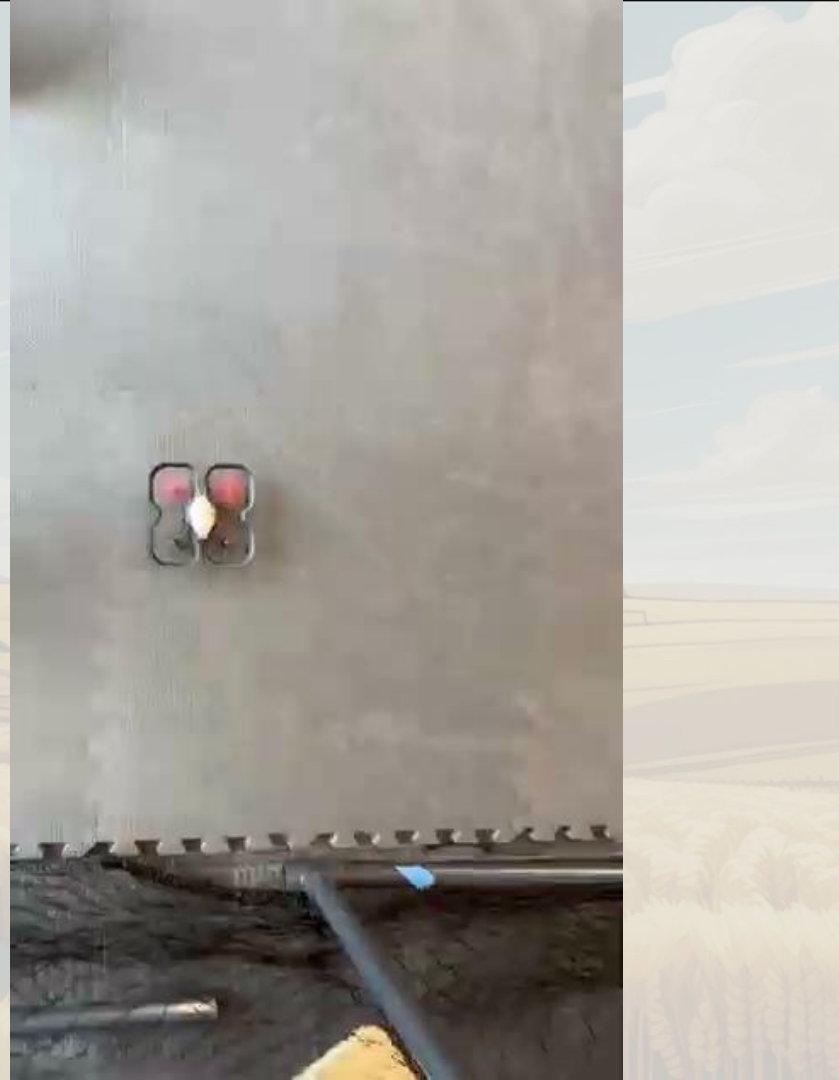
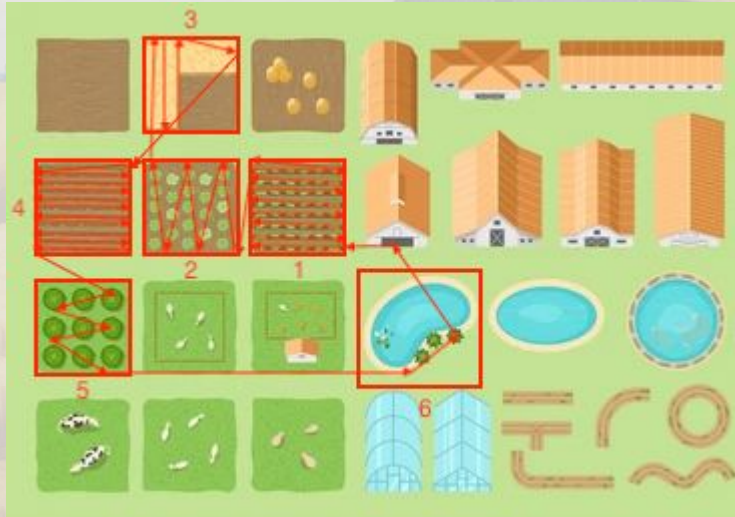
Annually, up to 40% of global crops are lost due to pests and diseases, leading to economic losses exceeding \$220 billion . Additionally, disasters such as droughts and floods contribute to an average annual loss of \$123 billion in crops and livestock

Agricultural drones play a pivotal role in in global crop production. Agricultural drones—also known as or UAVs (Unmanned Aerial Vehicles)—are increasingly used in modern farming to enhance productivity, efficiency, and sustainability. They represent a key component of precision agriculture, which uses technology to monitor and manage crops and livestock.



Autonomous Navigation

We use 5*5 in rubber ground in the cage to simulate a real farm. Each rubber pad symbolizes a small unit of farm. Our final goal is to design a path which enables the drone to go through all the units of the farm while detecting the category of crops in these farms.





Accomplishment & Challenge

What we've done so far: Yesterday I already finished programming drones to go through 1 row of rubber pats.

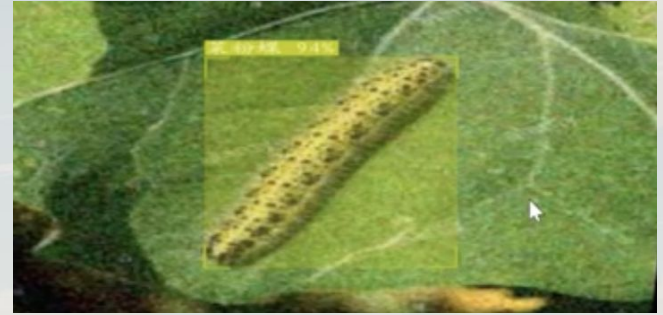
What we will do: Finish a track for the drone to travel through 5*5 field

Plant Status Detection

Detect Status of Crops

(Type of Crop, Healthiness (eg. hydrated %), Type of Sickness/Predict Reason, Pesticide, Wild Plants, Predict Harvestable Time)

Will mainly use deep learning, Opencv and Yolo.



Post Detection


Auto water for dehydrated crop.

Auto spray pesticide.

Warn farmer on diseases or soil problems.

Potentially develop harvest function to combine with when to harvest prediction so farmer don't need to harvest anymore.



A purple rectangular tag with a hole on the left side is placed on a light-colored wooden surface. The tag has the words "Thank you!" written in a black, cursive script. Three white daisies with yellow centers are scattered around the tag: one to the left, one above, and one to the right. A thin, light-colored string is looped around the tag and extends towards the top left corner.

Thank
you!