Analysis of maturity of cotton during harvesting period

Phase II - Review 1

Under the guidance of

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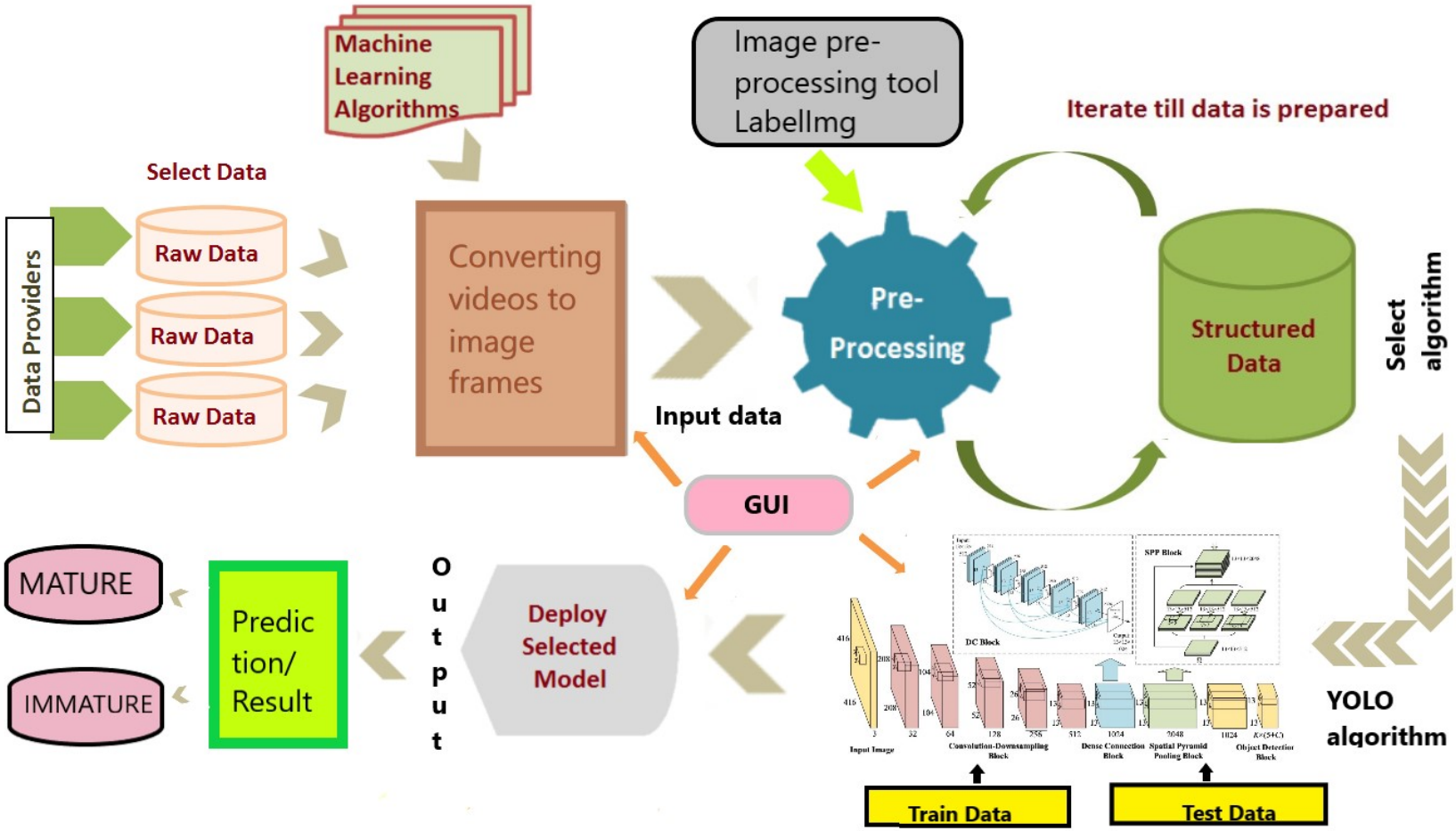
INTRODUCTION TO THE PROBLEM:

Contribution of Each project Members

SYSTEM DIAGRAM / ARCHITECTURE:



Modules

Modules Descriptions

INPUT:

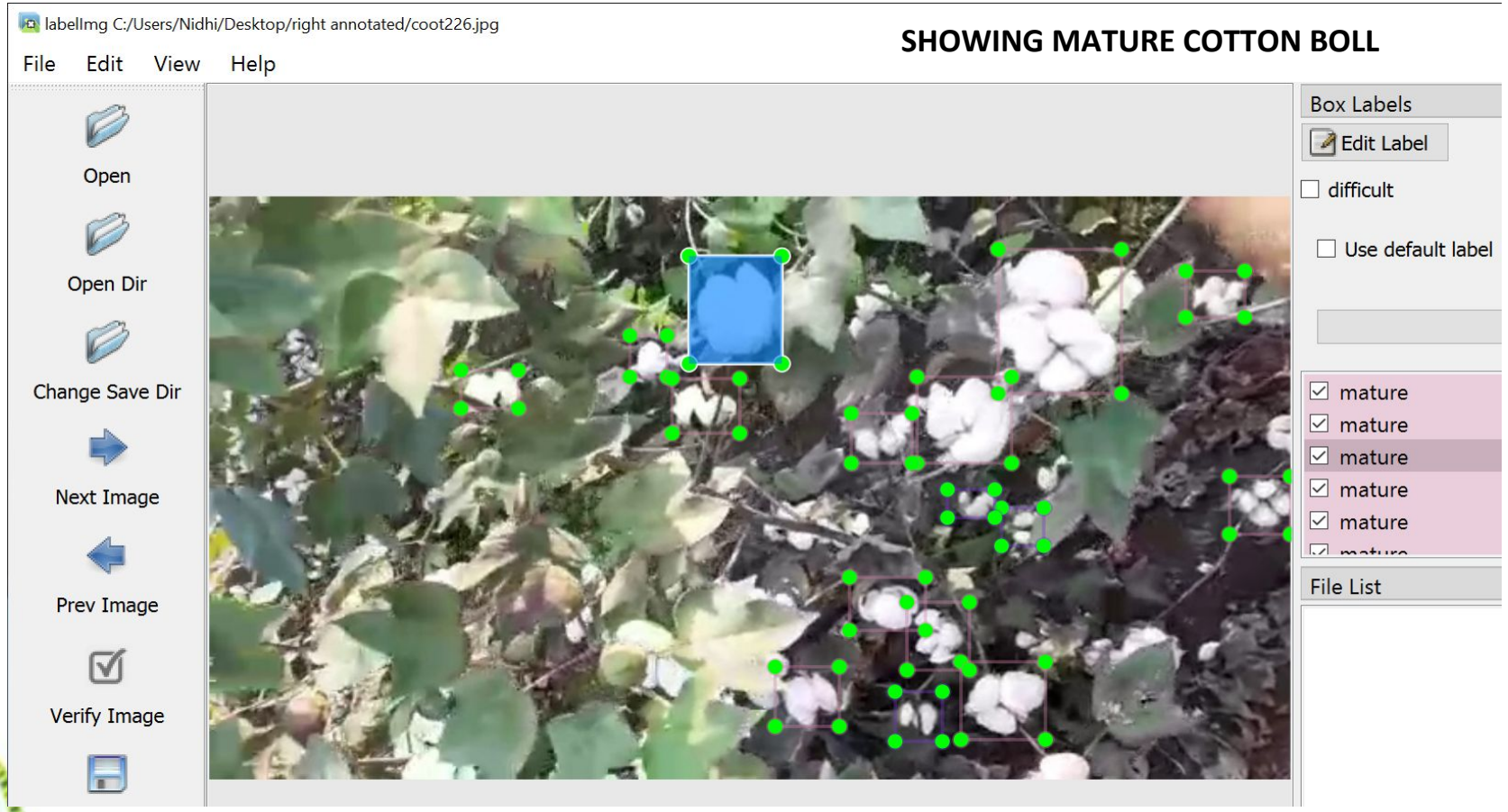
The dataset consists of mature and immature cotton images.

MATURE COTTON

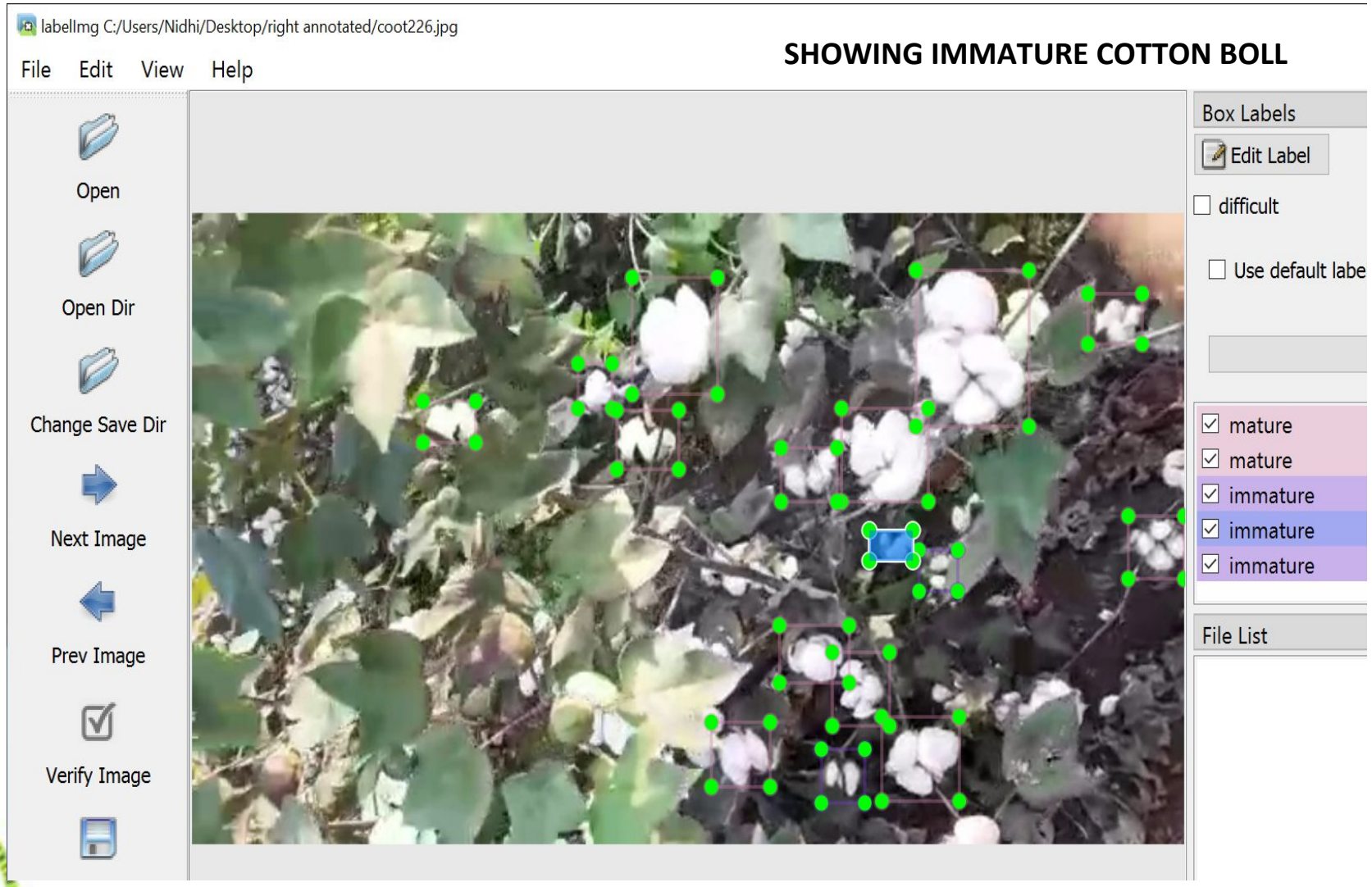
IMMATURE COTTON

PREPROCESSING:

We have used the LabelImg tool to annotate the images into two classes namely mature and immature.



PREPROCESSING:



ALGORITHM:

- The images derived from the videos by setting a particular time frame, maybe not clear, visually, so in order to improve the quality of the image we enhance it, by using some technique.

- Image enhancement is the procedure of improving the quality and information content of original data before processing.

- The next step is, training these images and build a model to detect mature and immature cotton buds, for this we use YOLO v4.

ALGORITHM :

- YOLO v4 outruns the existing methods that are in use for object detection and is better optimized for huge collection of data.

- This has three phases, in the backbone phase it consists of darknet which is pretrained for images and needs some tweaking for us to get the desired results

- Next in the neck phase, feature aggregation takes place, here, there is mixture of various layers to aggregate the required feature and sets up the YOLO for the next phase

- The last phase is the head phase, this is called the

ALGORITHM:

detection phase, here in our case we detect mature and immature cotton buds.

- This is the training part of the algorithm, when we test the model, we can either feed enhanced or normal quality image, for the the model should be able to detect the cotton buds accordingly.

OUTPUT:

cotton: 0.74
cotton: 0.50
cotton: 0.31
cotton: 0.74
cotton: 0.54
cotton: 0.96
cotton: 0

GUI DESIGN:

We have developed a website as the GUI of our project.

GUI DESIGN:

INPUT

MATURE AND IMMATURE COTTON BOLLS

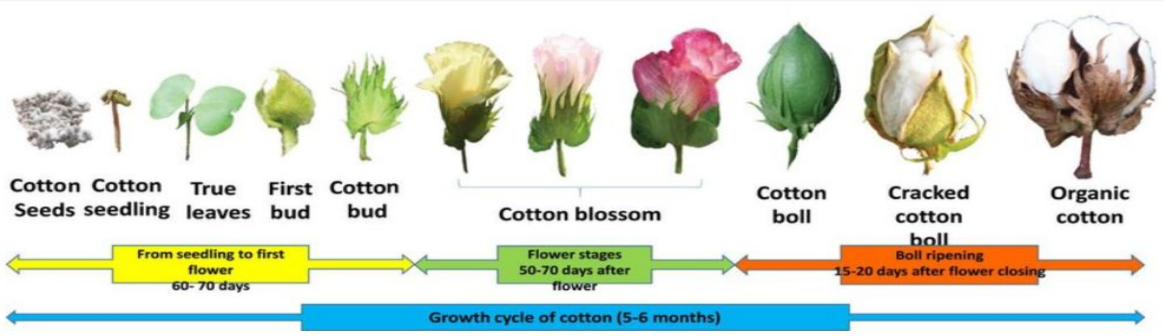
Our dataset consists of images from both Pre-harvesting and Harvesting stages. We have divided the dataset into two classes namely mature and immature. Enhancing Techniques are used to improve the quality of images.

Mature Cotton

Mature Cotton

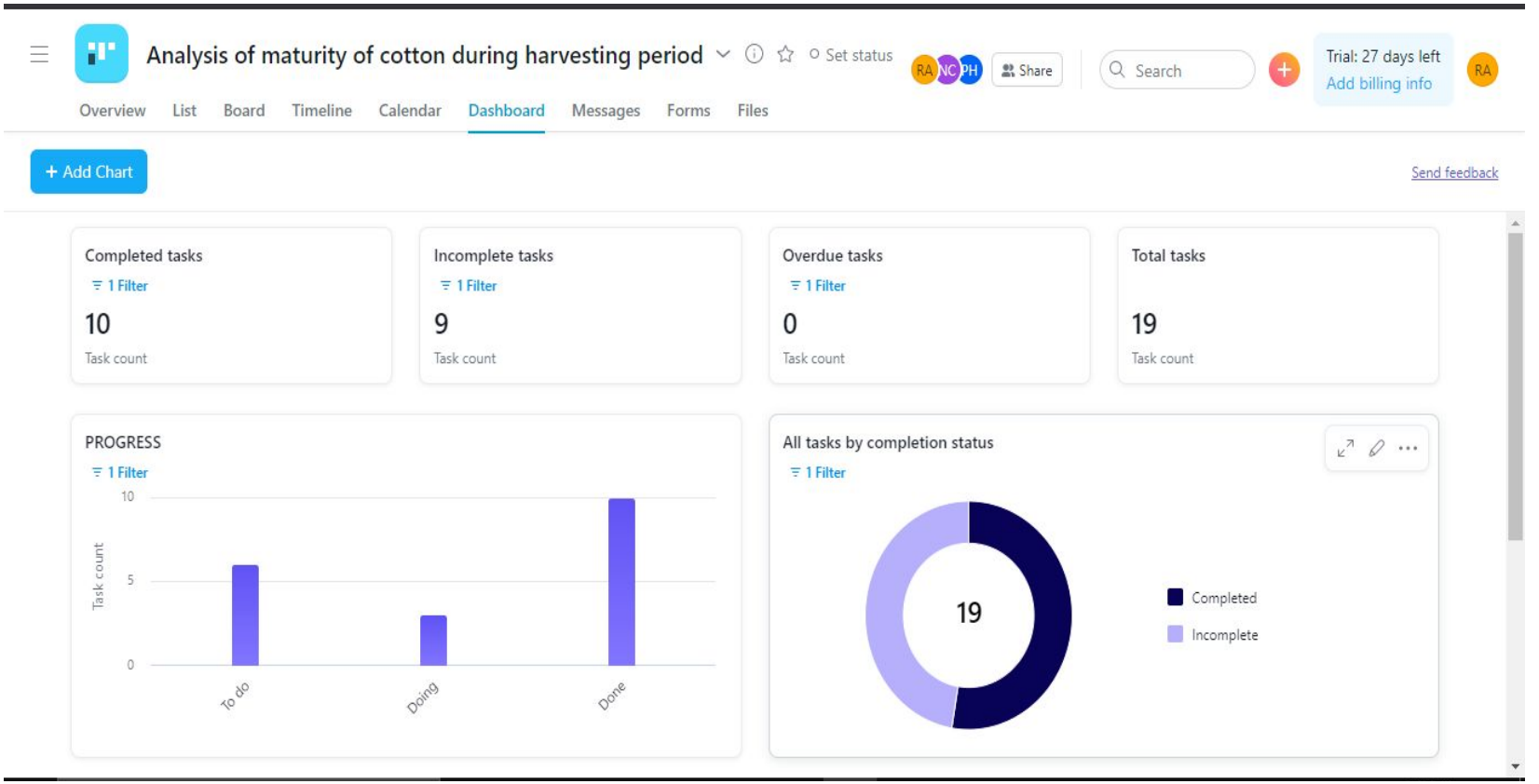
Immature Cotton

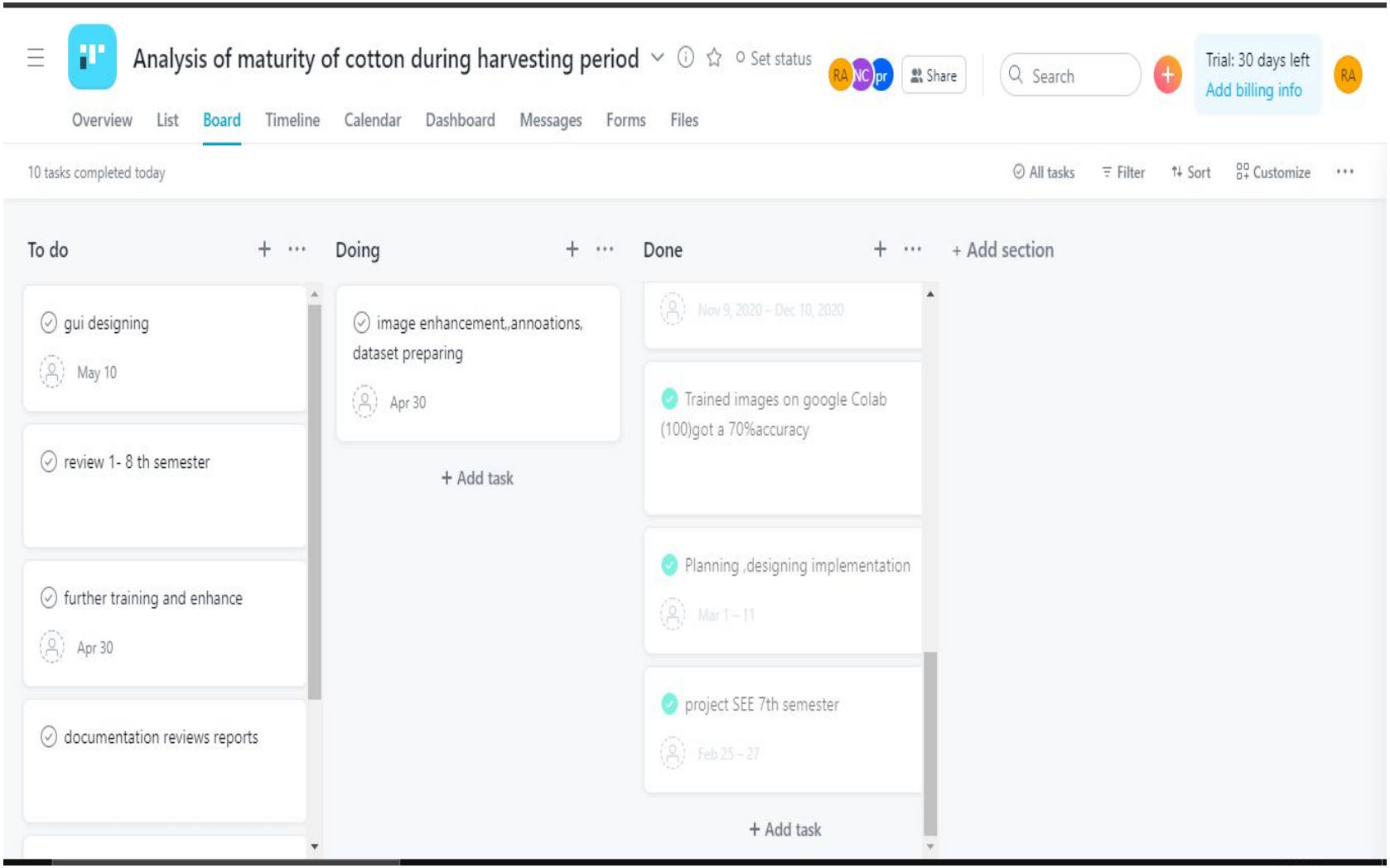
Immature Cotton



Co-Guide Meet Details

PROJECT TOOL SNAPSHOT:




Analysis of maturity of cotton during harvesting period
Set status
Share
Search
Trial: 30 days left
Add billing info
Overview
List
Board
Timeline
Calendar
Dashboard
Messages
Forms
Files
10 tasks completed today
All tasks
Filter
Sort
Customize
To do
Doing
Done
+ Add section
gui designing
May 10
review 1- 8 th semester
further training and enhance
Apr 30
documentation reviews reports
image enhancement,,annoations, dataset preparing
Apr 30
+ Add task
Nov 9, 2020 – Dec 10, 2020
Trained images on google Colab (100)got a 70%accuracy
Planning ,designing implementation
Mar 1 – 11
project SEE 7th semester
Feb 25 – 27
+ Add task

THANK YOU!