Development Tracking for New Weed Processor

Contents

[Task 1: Processor updates. 3](#_Toc173256159)

[Goal 3](#_Toc173256160)

[Things done: 3](#_Toc173256161)

[To do: 3](#_Toc173256162)

[Task 2: Linear Speed Control and Readings 3](#_Toc173256163)

[Goal: 3](#_Toc173256164)

[Task 3: Get Data 3](#_Toc173256165)

[Task 4: Full Integration 4](#_Toc173256166)

# Task 1: Processor updates.

## Goal

To implement a Kalman filter to recognise if weeds have already been sprayed or not.

## Things done:

1. Created a Proposal.
2. Created a GitHub to develop on.
3. Added a Python video cutting file
4. Adapted the video processor to take in videos and briefly sectioned the code using comments.
5. Added a file to flick through video frames to manually measure the pixels per second for development.
6. Modularize the code and make it maintainable.

## To do:

1. Measure the pixels per second for our development video.
2. Create the Kalman Filter.
3. Check frame by frame to see if a weed has already been spotted or sprayed.
4. Display this within the video.
5. Evaluate the performance.
6. Integrate.

# Task 2: Linear Speed Control and Readings

This is more related to integration. Will need to find ways of testing/developing concurrently to the development of the new chassis and the processor.

## Goal:

* To control the linear speed of the robot (nothing else in currently controlling this) using the weed detection processor.
* To receive a speed from the robot and convert it into pixels per second for the video processor.
* To use the Kalman Filter in the processor to configure how fast the robot should currently be going. (this part must wait until the processor is finished).

# Task 3: Performance testing

Come up with evaluation metrics to test the new processor against the old one.

* Preferably quantifiable.
* Allows us to have a metric to optimize a processor against.
* Also something to talk about in the report.

This could be coded up to import the processor in a separate file and test it.

# Task 3: Get Data

Thought I should just put this here to keep it in our minds.

Need to do this as soon as the robot is ready.

# Task 4: Full Integration