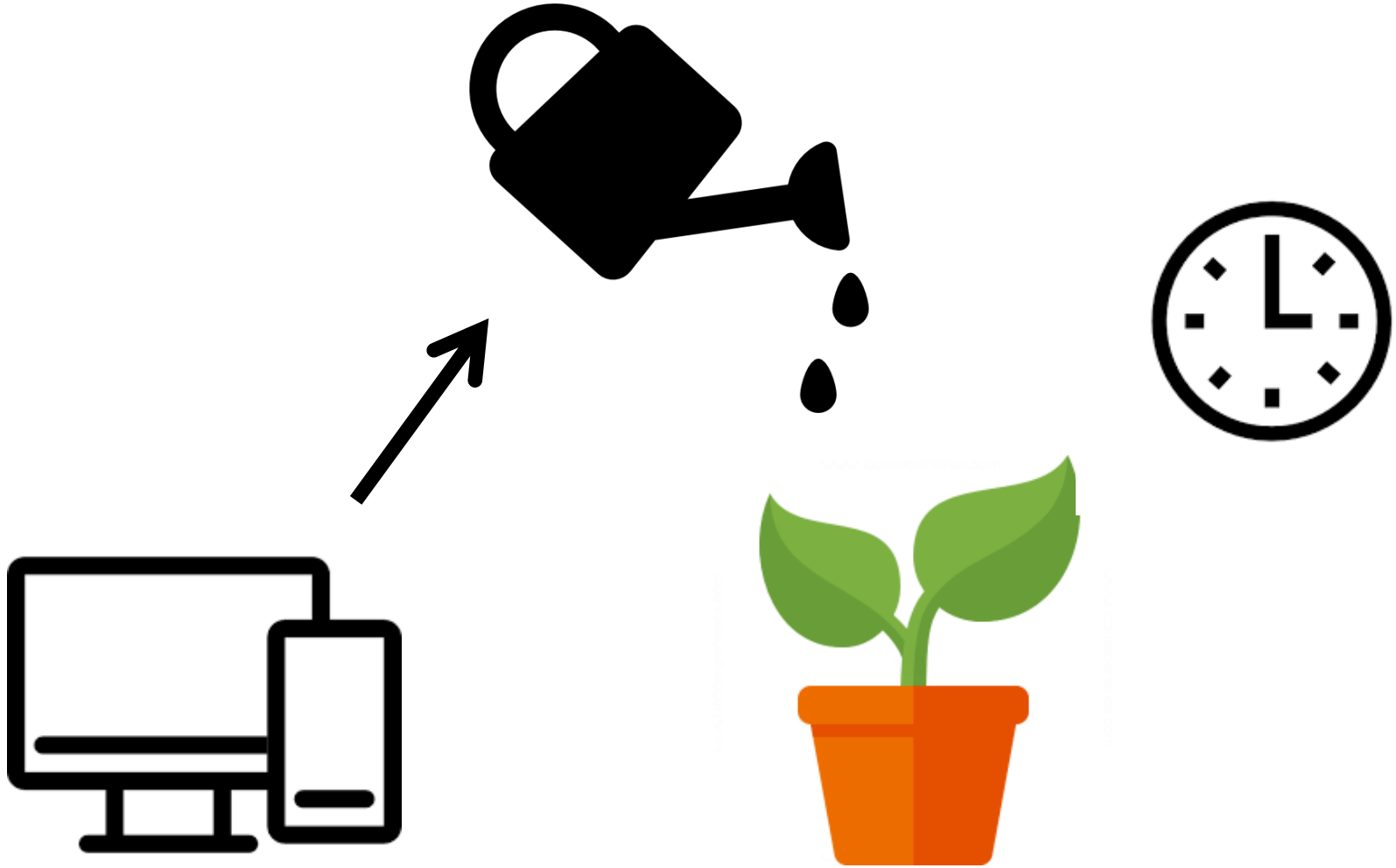
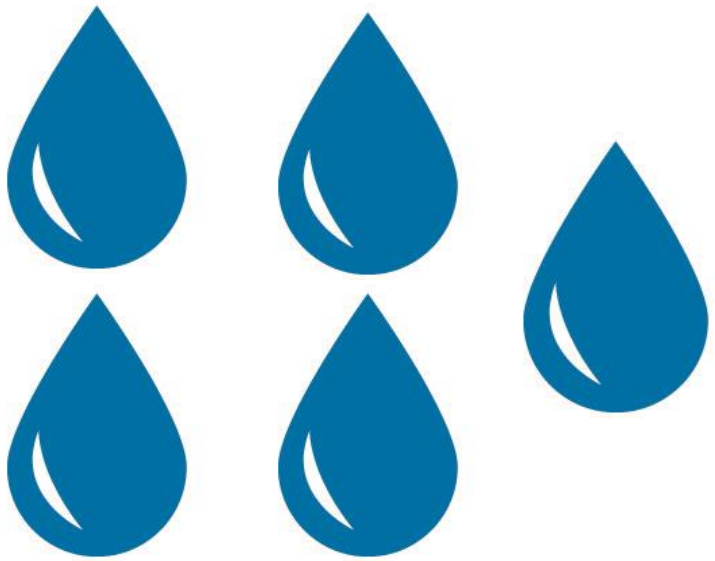
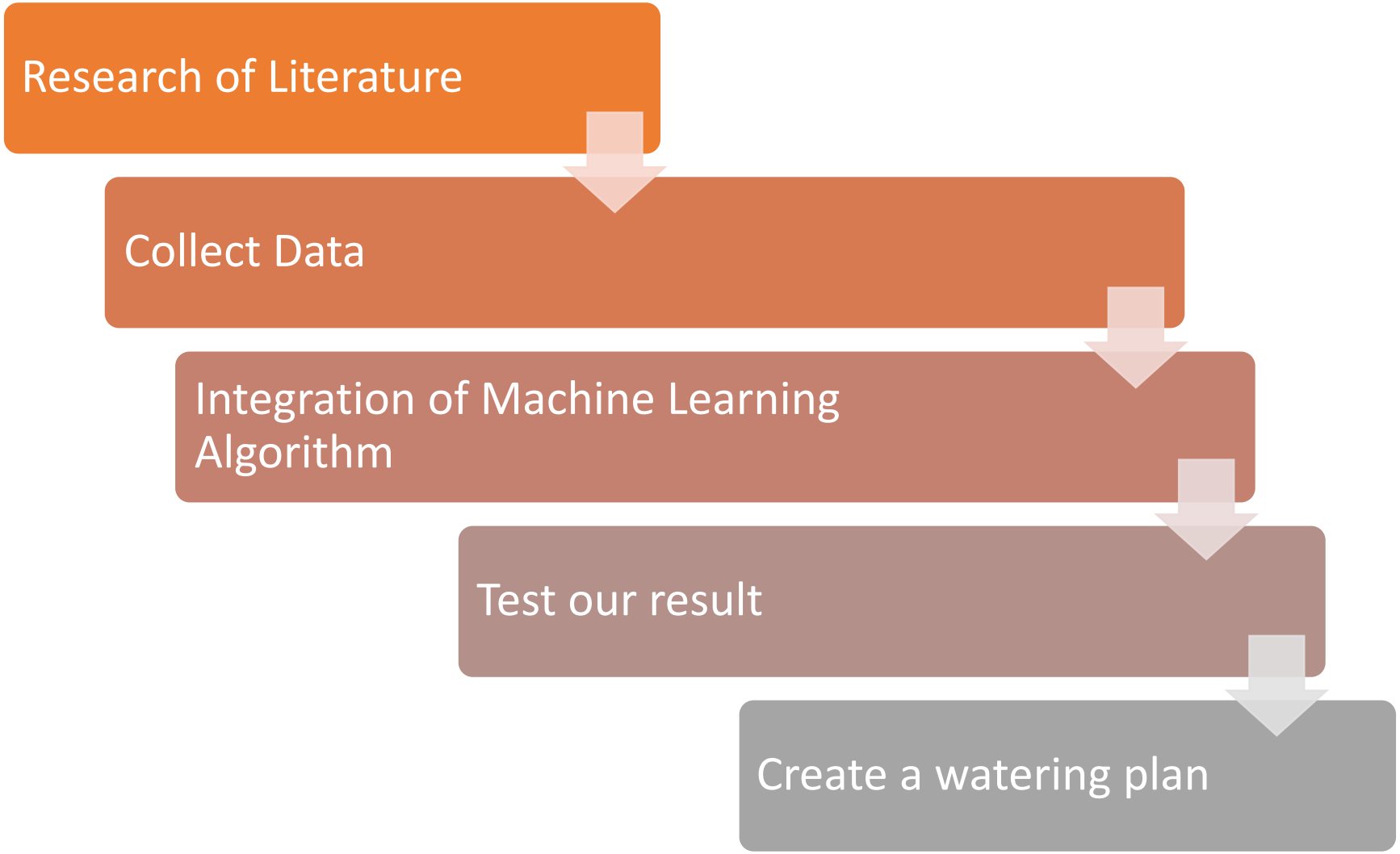
Irrigation Machine Learning

Adrien Chabert



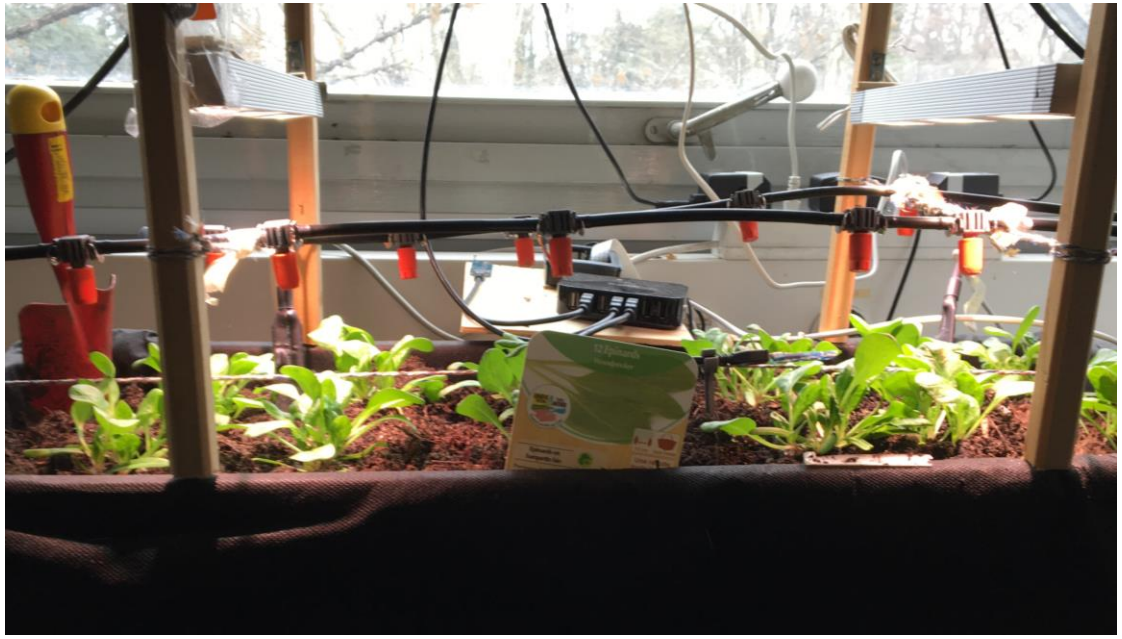
200’000 km^3 of fresh water




Research of Literature
Collect Data
Integration of Machine Learning Algorithm
Test our result
Create a watering plan

Planting

Basilic, onion, spinach



13 mars

20 mars

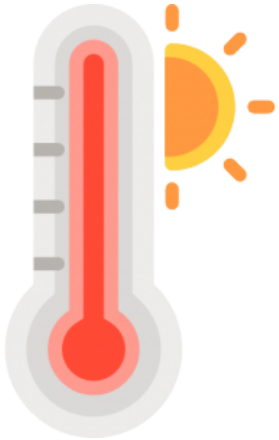
chronograf

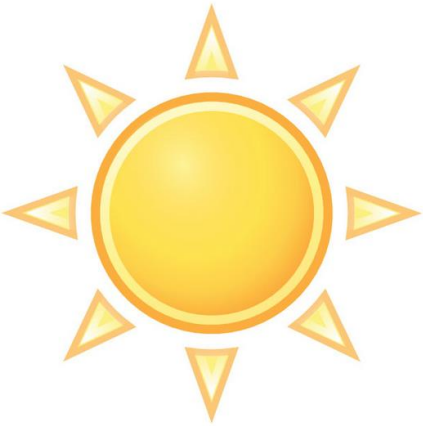
scikit
learn

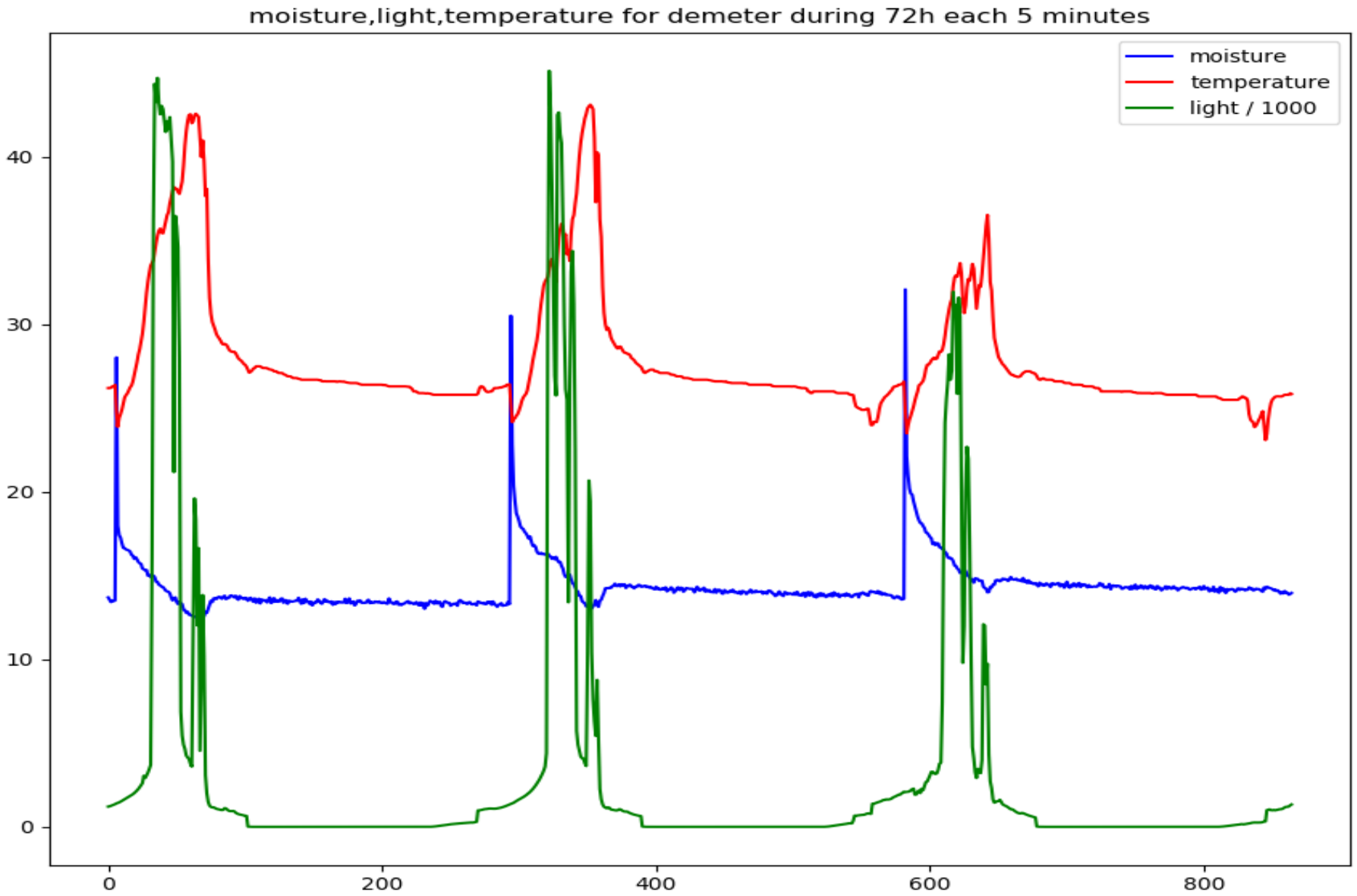
influxdata

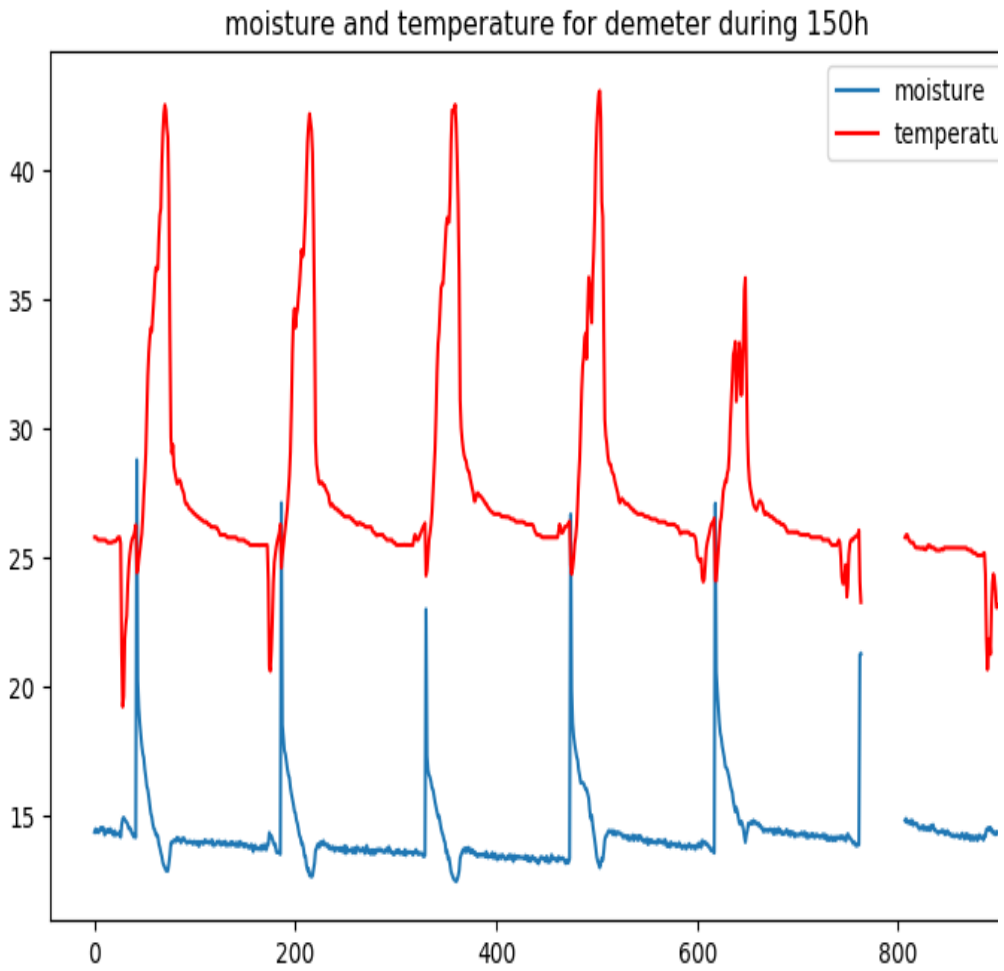
pandas
$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$

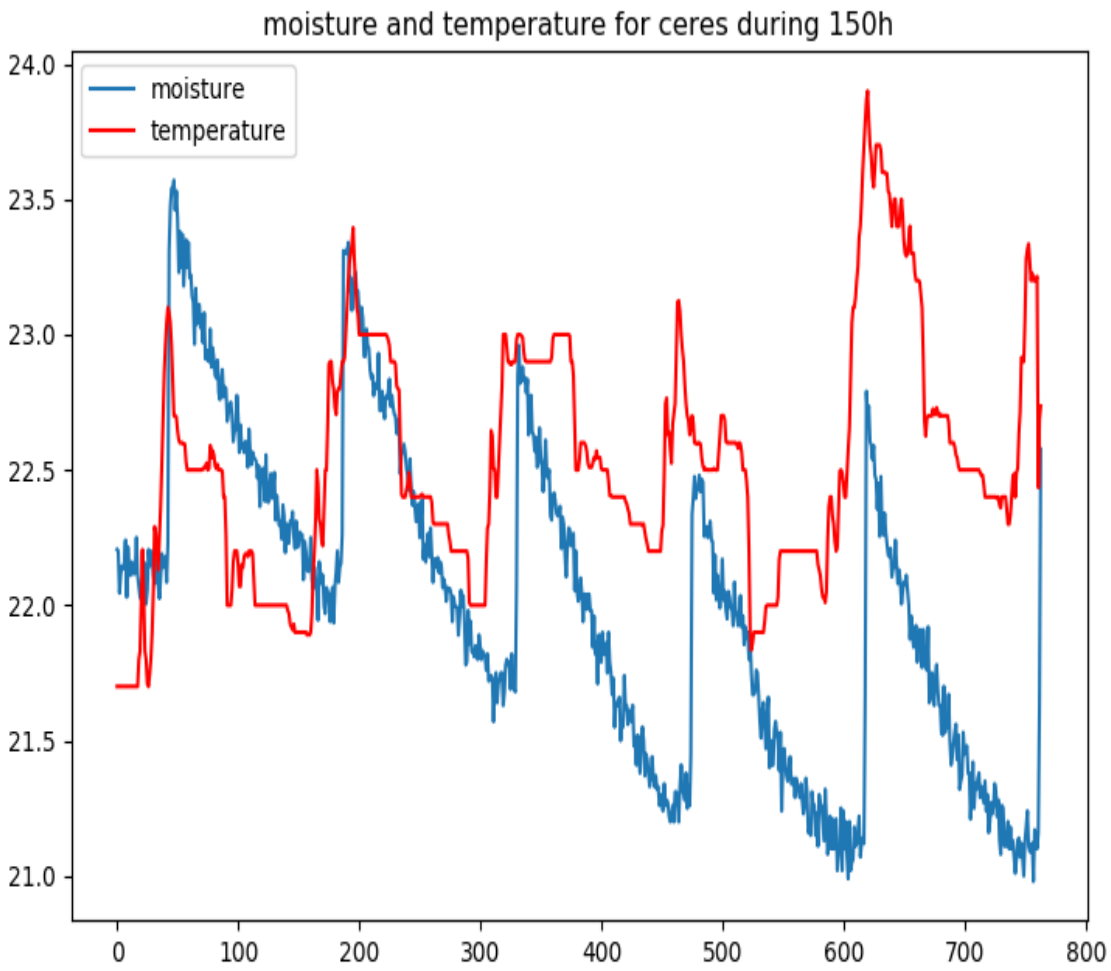
jupyter



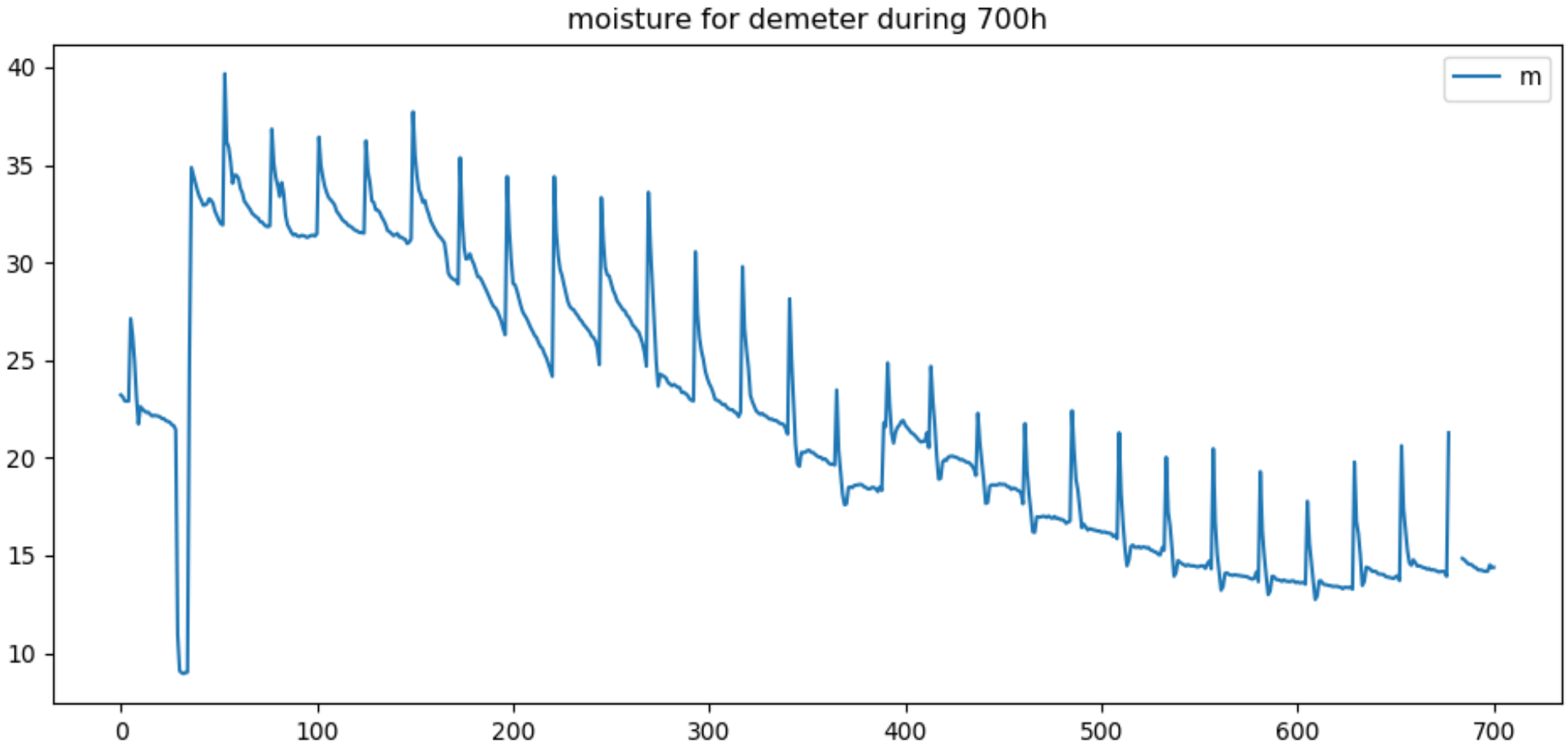



moisture,light,temperature for demeter during 72h each 5 minutes
moisture
temperature
light / 1000
40
30
20
10
0
0
200
400
600
800


moisture and temperature for demeter during 150h
moisture
temperatu
40
35
30
25
20
15
0
200
400
600
800

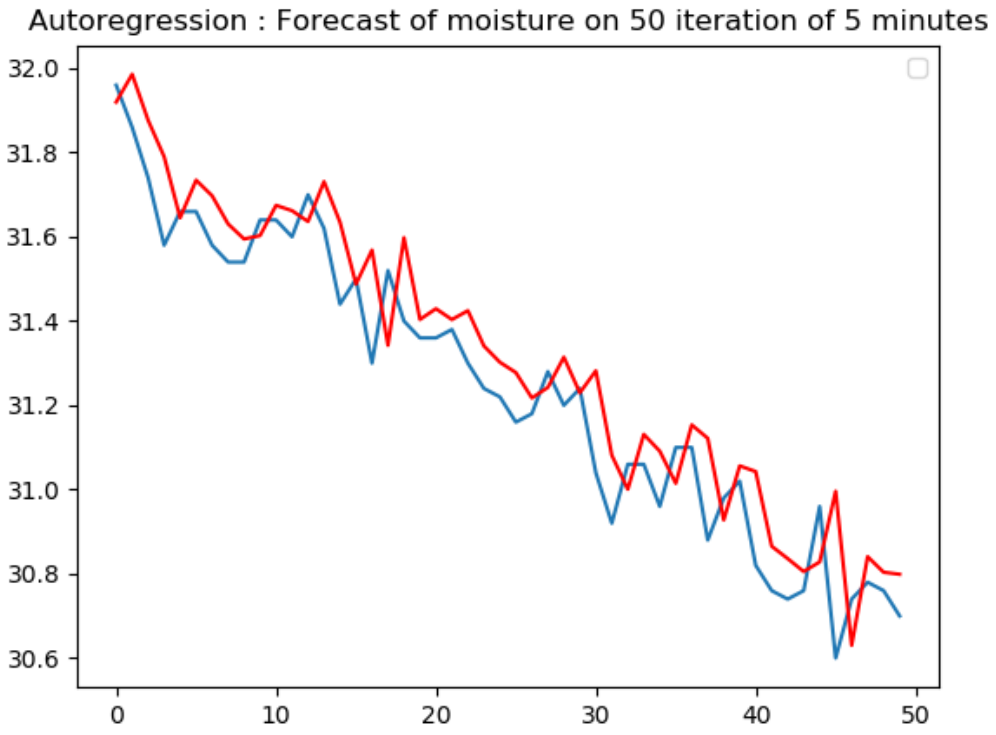

moisture and temperature for ceres during 150h
moisture
temperature
24.0
23.5
23.0
22.5
22.0
21.5
21.0
0
100
200
300
400
500
600
700
800

Moisture porcent

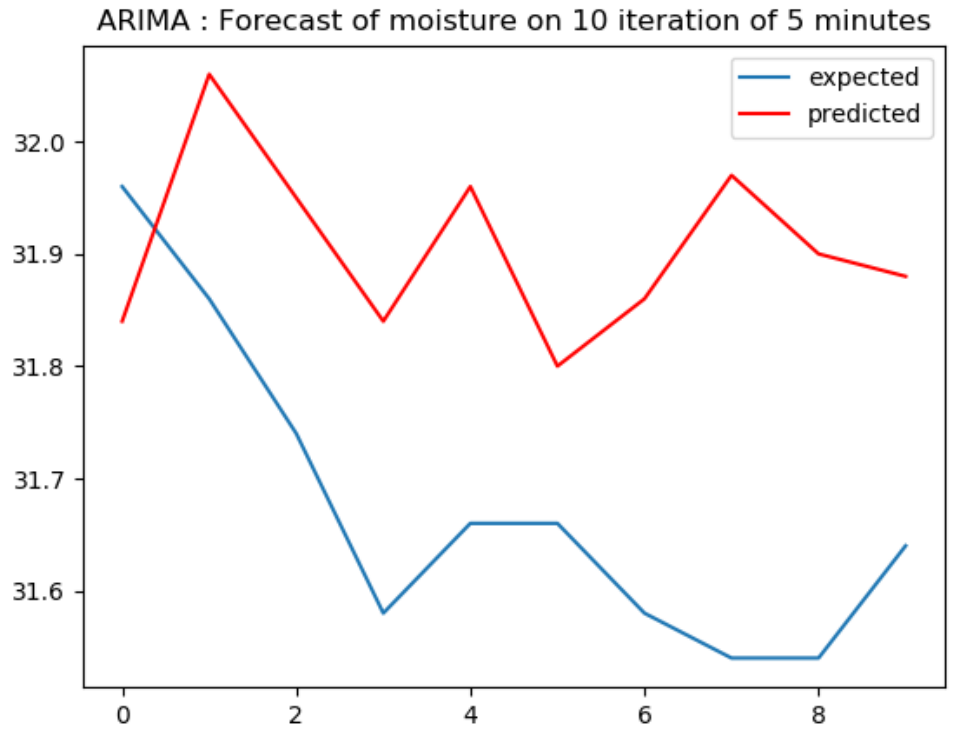


Watering Plan

Date	Ceres	Demeter	Autre
6-Mar	10 s/j	10 s/j	
13-Mar	10 s/j	10 s/j	
20-Mar	10 s/j	10 s/j	
27-Mar	20 s/j	15 s/j	
3-Apr	20 s/j	15 s/j	Full watering
10-Apr	50 s/2j	30 s/2j	
17-Apr	30 s/j	10 s/j	
24-Apr	30 s/j	10 s/j	
1-May	40 s/j	20 s/2j	Full watering
8-May	20 s/0.5j	20 s/j	
15-May			
22-May			Full watering
29-May			
5-Jun			Full watering
12-Jun			
19-Jun			Full watering
26-Jun			
3-Jul			
10-Jul			



Test_MSE : 0.017



Test_MSE : 0.073

Position of the humidity sensor

Defective Captor

Pandas and Matplotlib not working on Jupyter

Difficulty to implement ML

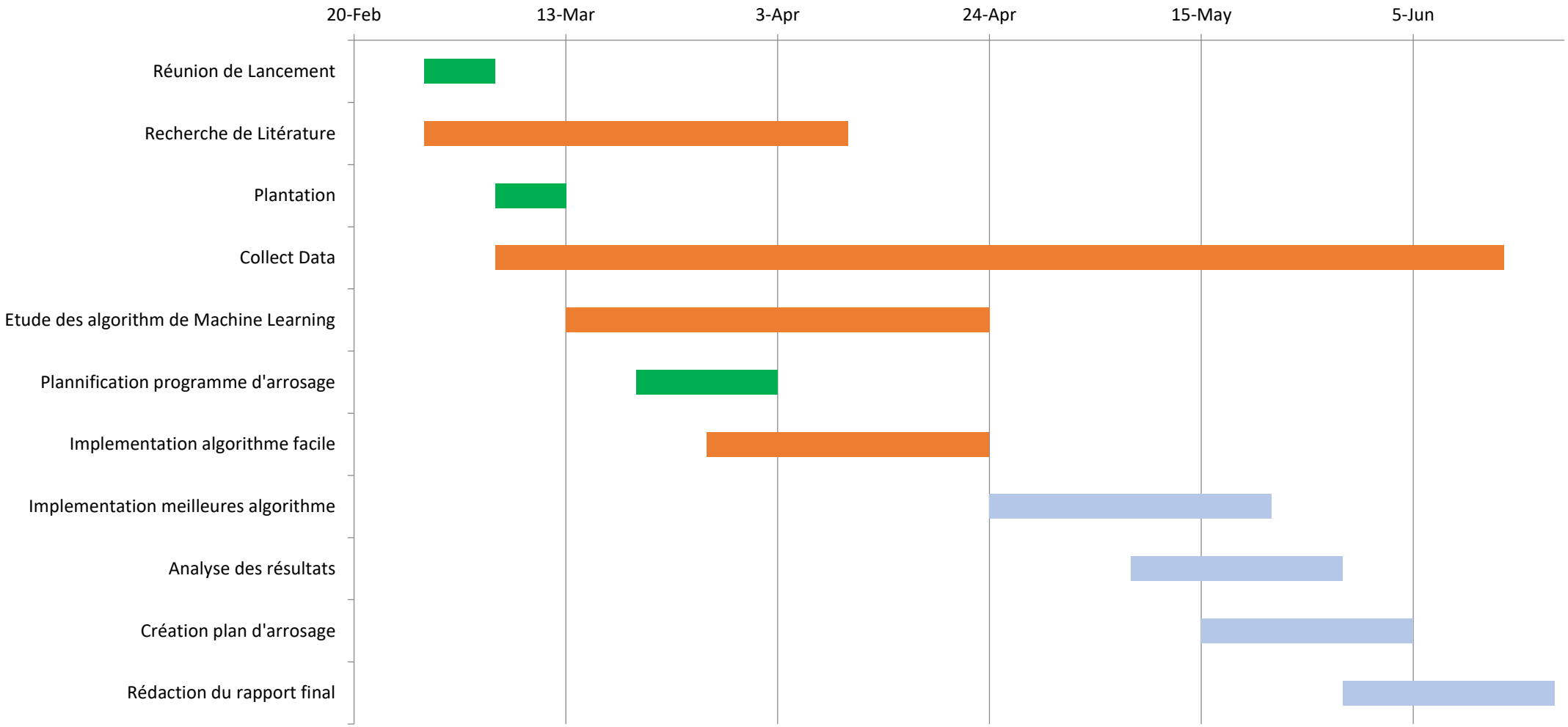
Lack of knowledge of ML

Planning for the next 3 weeks

REALLY Finish the research of Literature

Finish Research about Machine Learning algorithm

Finish Implementation of a first easy ML algorithm

- ARIMA
- Least Squares Multiple Linear Regression

Project Planning