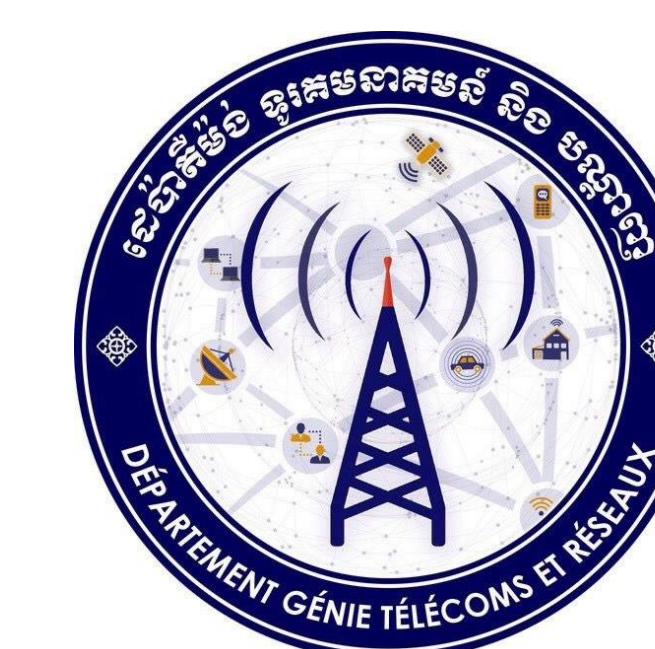


# IOT PLATFORMS FOR SMART IRRIGATIONS



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## — INTRODUCTION —

Agriculture and farming are one of the oldest and most important professions in the world. Humanity has come a long way over the millennia in how we farm and grow crops with the introduction of various technologies. Artificial intelligence (AI) is one of the most modern application that has been used all around the world in this industrial revolution 4.0. With the aid of AI in agriculture, we can build the most modern and convenience ways to apply and estimate data analytic for agricultural applications that boost more production yield.

Objective of this work is to apply AI to predict the crop yield according to environmental data and crop growing pattern.

## — SYSTEM ARCHITECTURE —

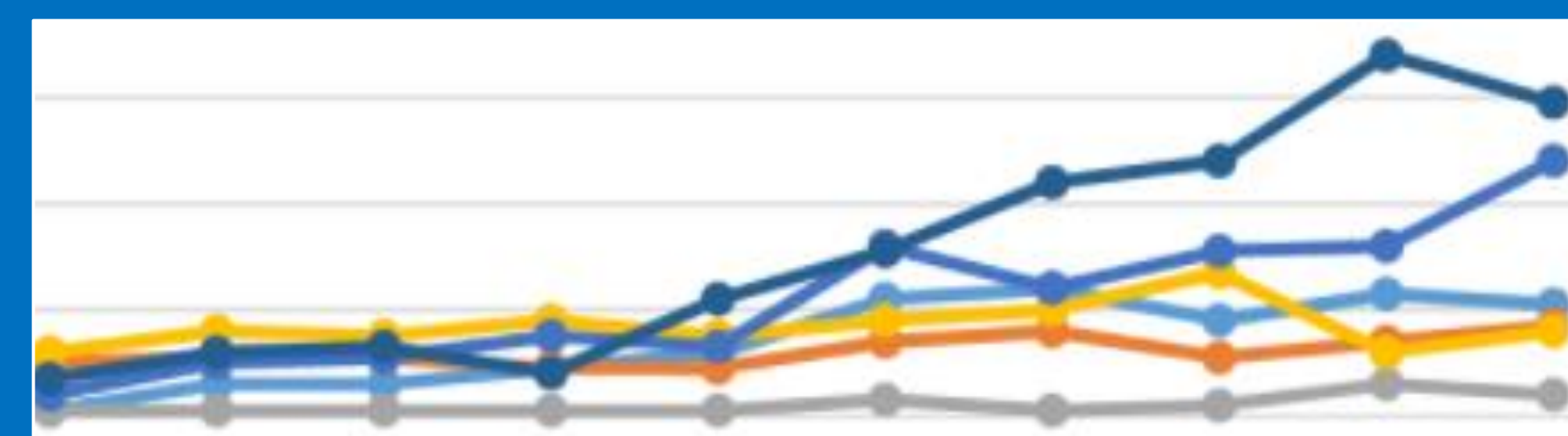


a. System Architecture

- Collect Data from Cloud Storage
- Clean and Prepare Data by collect only the study area
- Use the filtration data and apply machine learning techniques to make an analysis



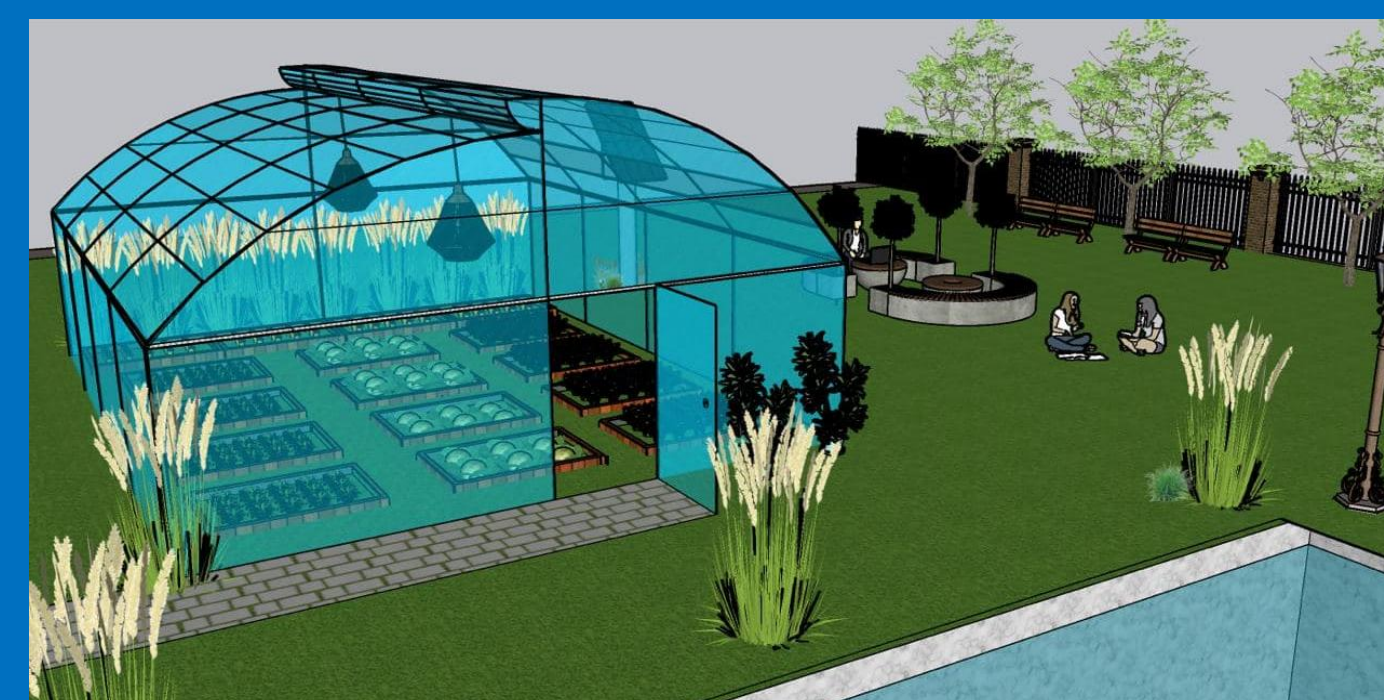
- Train Data and Test Data
- Make Prediction and Improve the Systems



Example Data Graph

## — DATA COLLECTION —

b. Smart Farm



Plant (a)

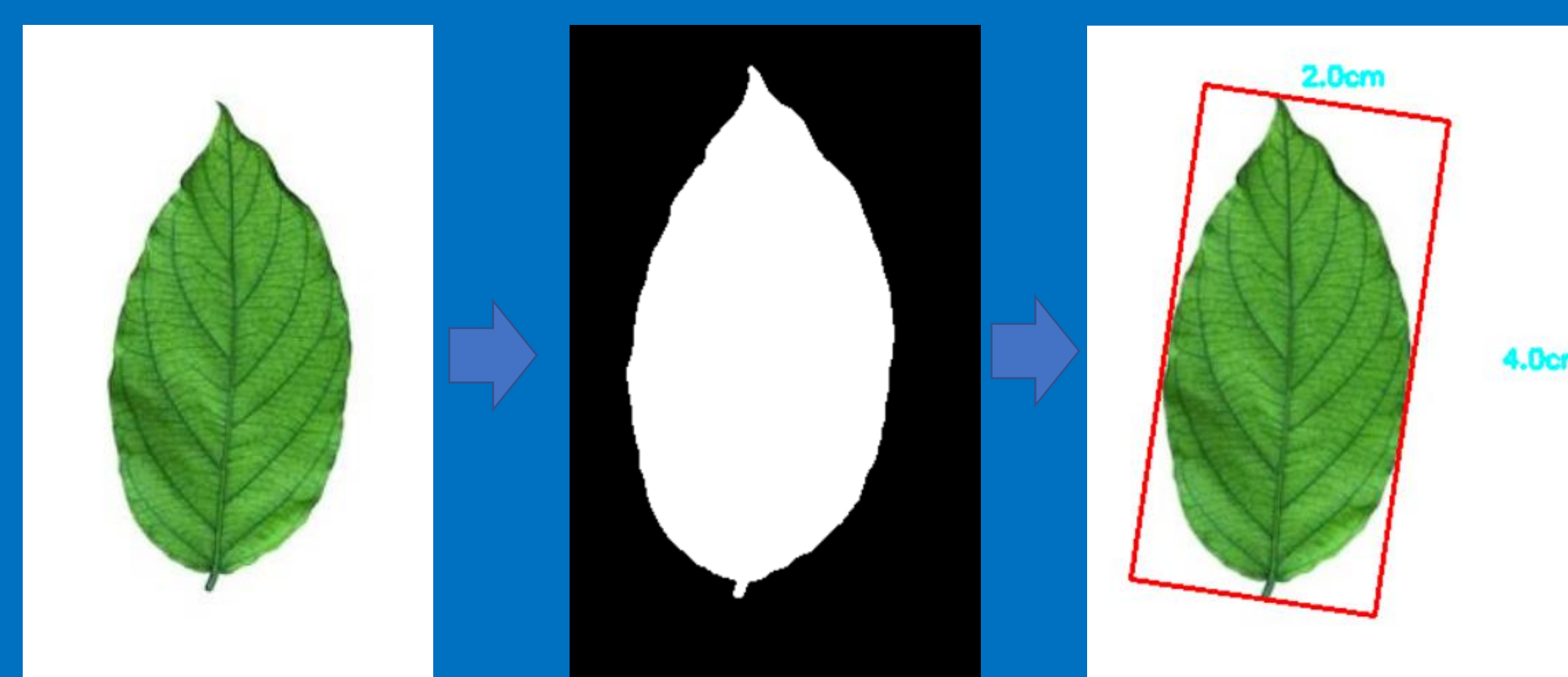


Plant (b)

Necessary information such as environmental data, crop pattern images, crop yield will be collected from the farm and stored in the cloud.

## — PRE PROCESSING —

Before getting started into Machine Learning ( AI ) , We need to pre-processing the data/image that we had been collected to make it convenient for next step.



c. Sample leaf

d. Leaf after filter

e. Detected size leaf

## — MODELING —

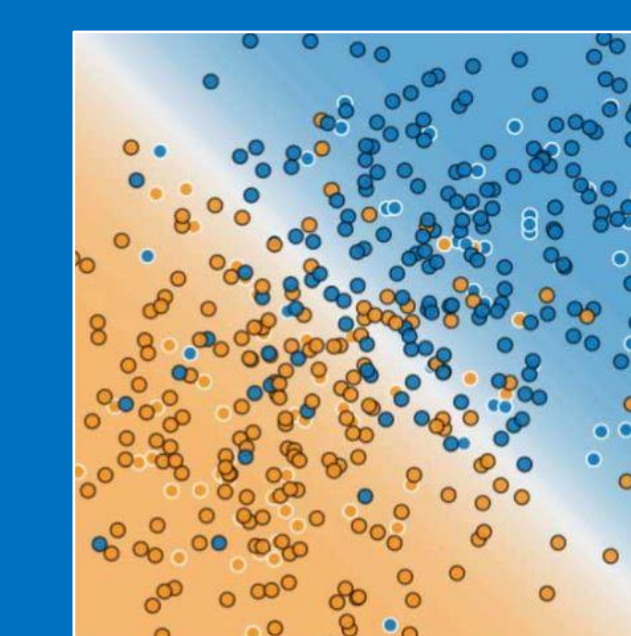
From the data/image that had been pre-processed, The data(s) will be applied to ML techniques depend on its specific needed.



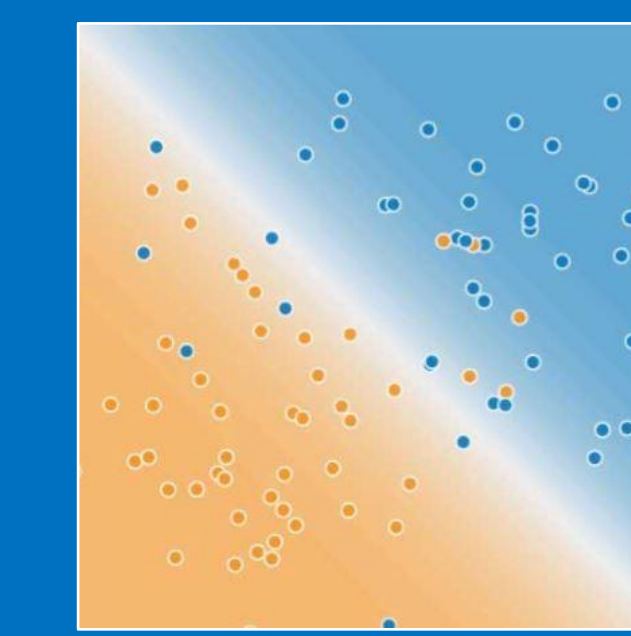
## — TRAIN & TEST —

Before proceed into the results ,The data(s) will be processed into training and testing for detect its accuracies and its errors.

For the testing parts , new data(s) will be used to test by comparing with the trained data(s).



h. Training Data



i. Test Data

## — RESULTS —

By applying the AI into the agriculture applications we get :

- Convenience to control the data
- Emphasis on checking defective crops and improving the potential for healthy crop production.