

# LIGHT FARM

- 啟動生活的綠能量

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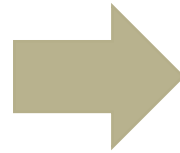


Co-operation company:  
Wieson Tech.  
<http://www.lightfarm.wieson.com/>

# The problem we are facing...



# One ongoing solution



Adding additional dimensions to agriculture!



Pretty soon, we will have most veges  
from plant factory





# LIGHT FARM

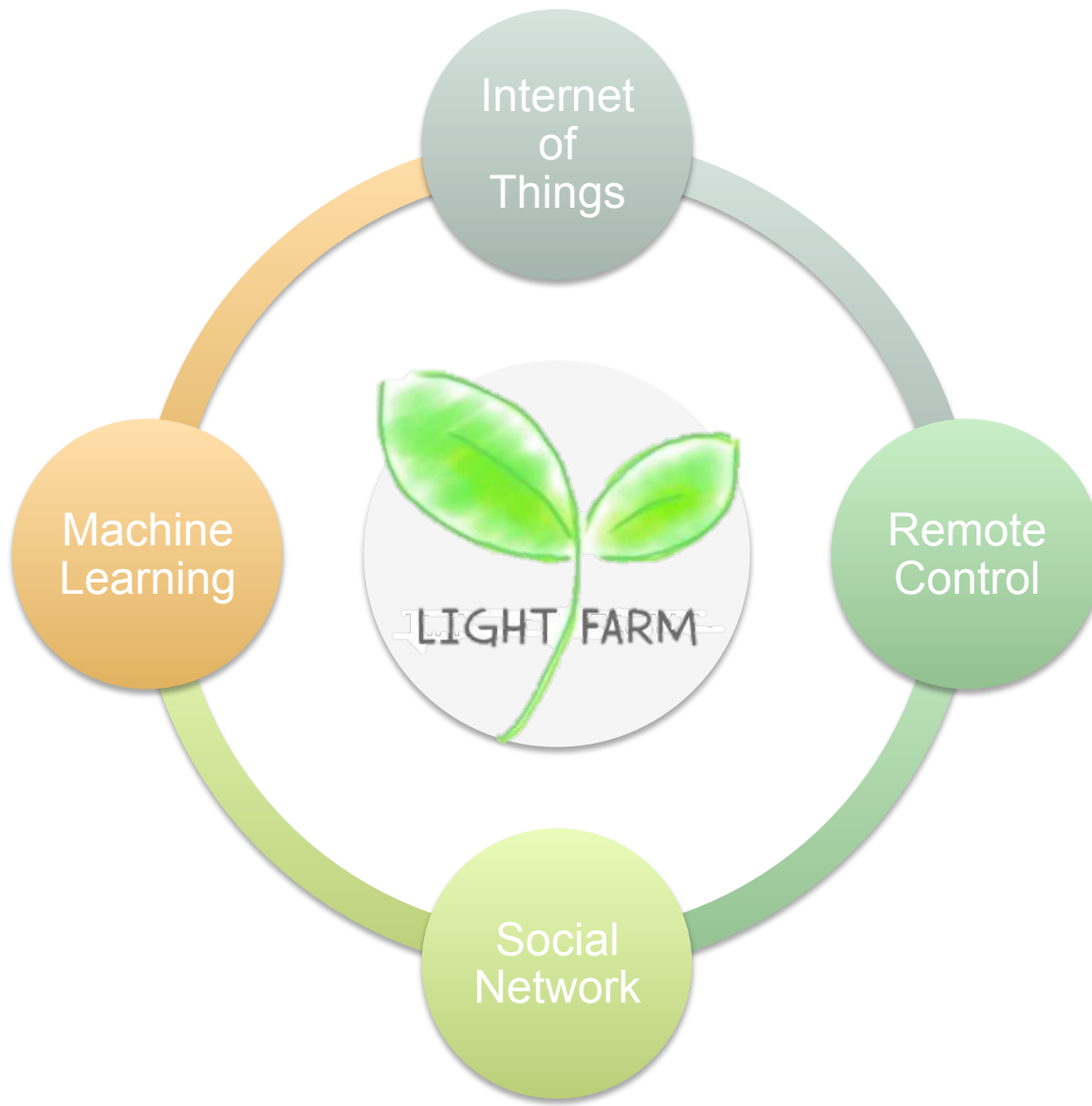
- Provides an intelligent in-house farming based on IOT!



# How does it work?







# Internet of Things



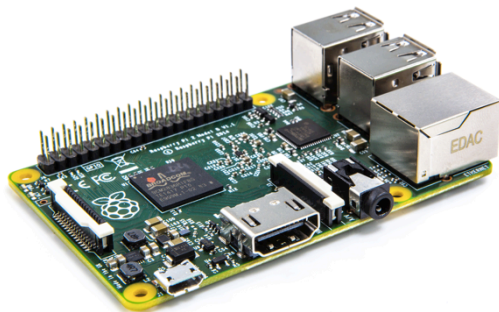
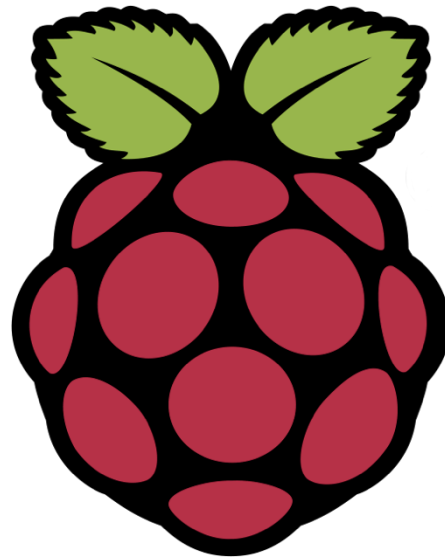


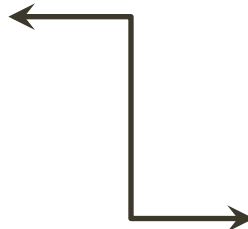
# Raspberry pi

Programmable

Expandable

Affordable!





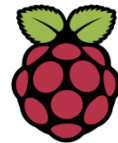
node JS™



Node.js App Server

Cloud Storage

Bluemix Platform

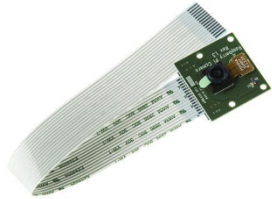


Light farm farm module



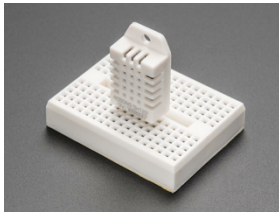


# Sensor Modules



## Camera Board Video Module

Provide live image/video stream.



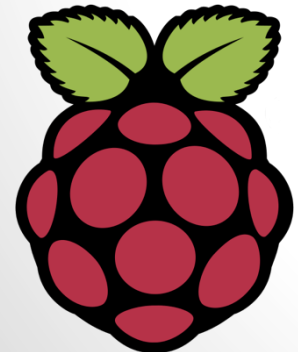
## DHT22 temperature-humidity sensor



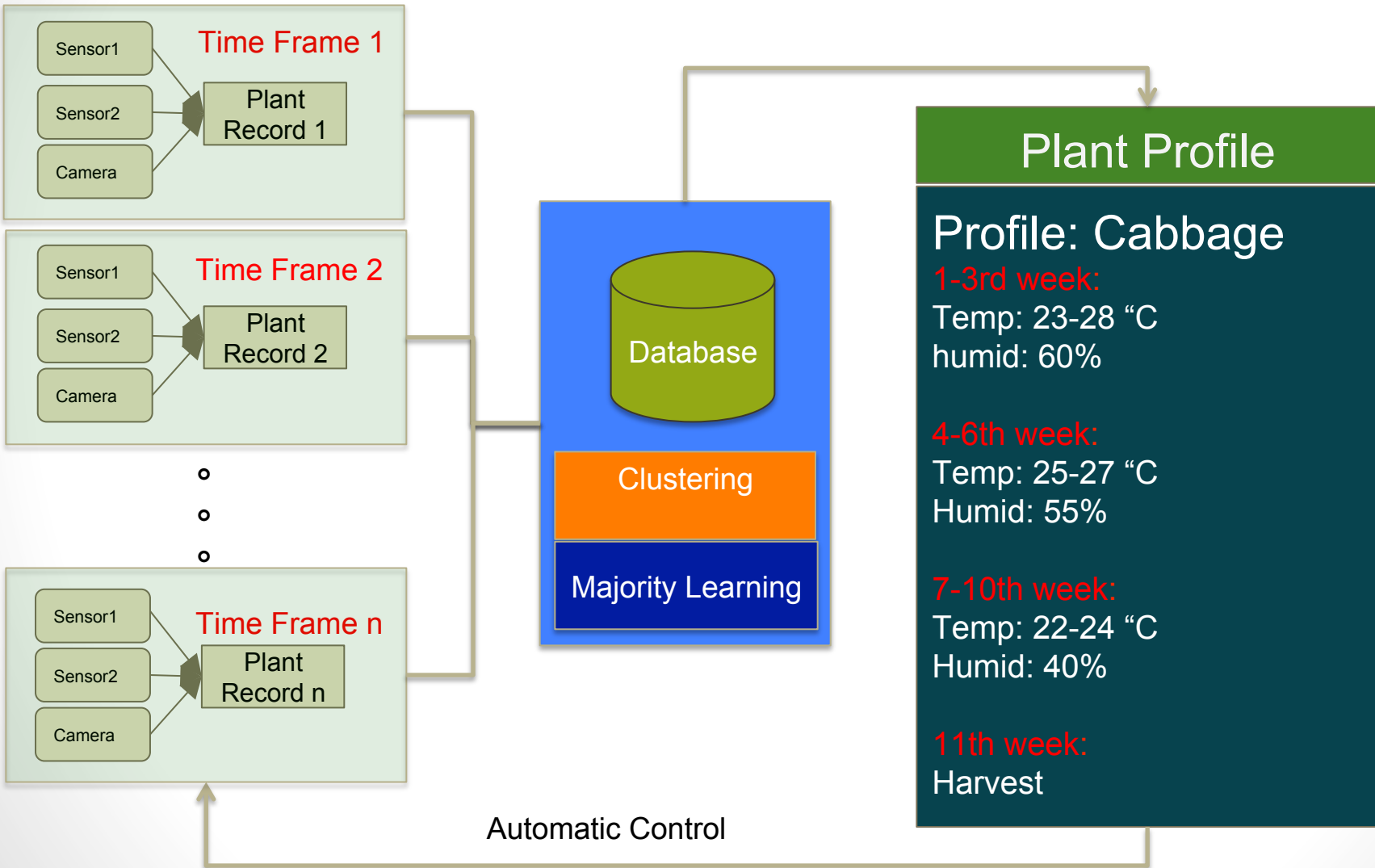
## BH1750FVI I2C Digital Light Intensity Sensor

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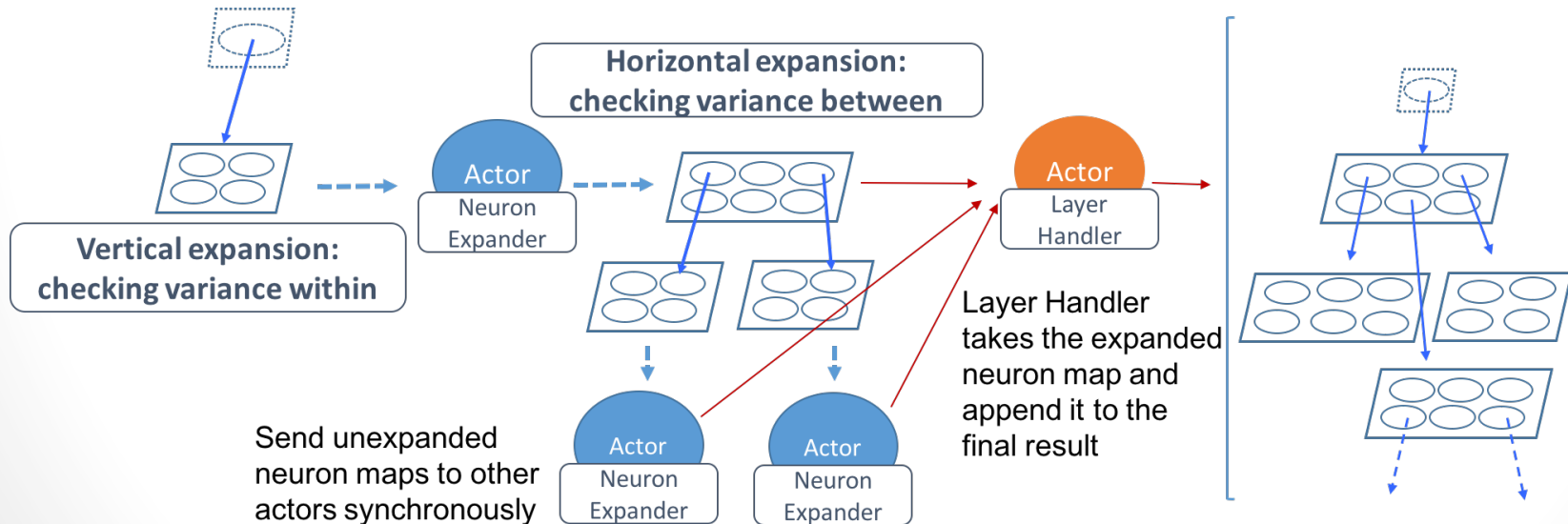
# Profile/Control Synthesis



# Clustering: Identify and Extracting Features of Plant Profiles

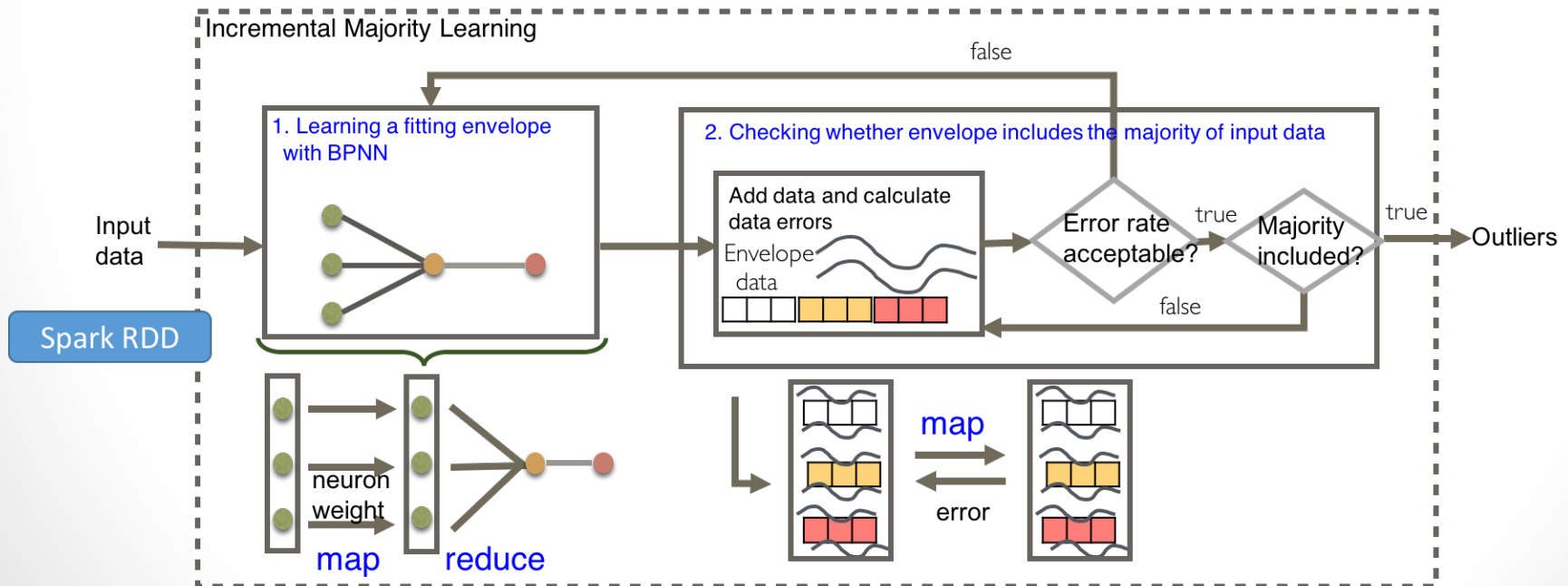
## The Growing-Hierarchical Self-Organizing Maps with Actor Models

- Clustering data within tolerable differences in a growing hierarchical neuron map
- Vertical expansion for reducing sample variance and horizontal expansion for reducing cluster variance
- Expanding the map with actors in a distributed fashion



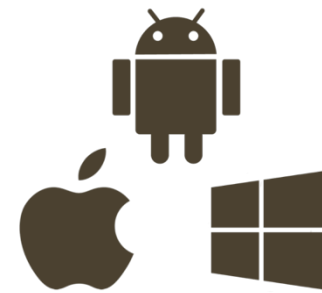
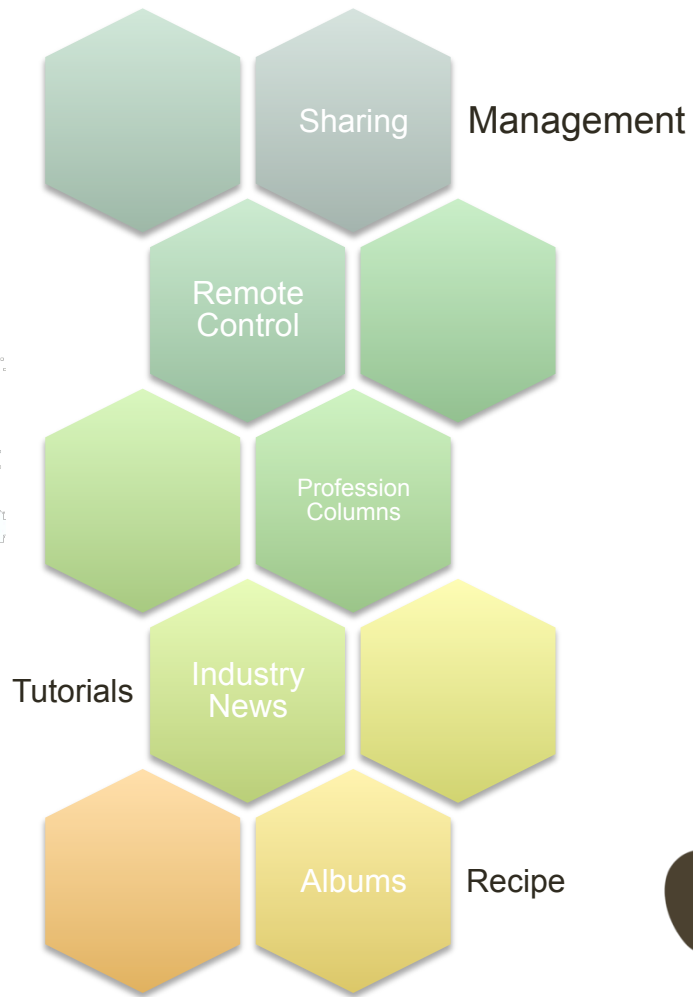
# Majority Learning: Deriving the Growth Functions from Collected Plant Profiles

- Evolves a nonlinear fitting envelope to include the majority of input data by employing backward propagation neural networks (BPNNs)
- Both the learning process and the checking process are accelerated with Spark in a distributed fashion





# A Light Farm Platform for Information Sharing



# Mobile Application Development



# Q & A

