# THE MACHINE LEARNING CANVAS Designed for: Head of product Designed by: Lyu Xinyu Date: 25/01/2023 Iteration: 1 .

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| PREDICTION TASK  * Build ML system to predict the yield with estimated time * Ingest, process, and analyze meta data to make real-time decision * Build ML system to learn different plant growth cycles | DECISIONS  * Estimated time gap with reality * Customers’ reflection for the app is 4+/5 * Data management system breakdown less than 3 times/year * Decision can be made less than 10 seconds | VALUE PROPOSITION  * 24/7 monitor * Easy to plant * Remote control * Auto-modify * Customize planting | DATA COLLECTION  * Plants’ information (1 time and update 1 time/quarter) * User settings (Each time) * Previous planting data (Everyday) * external conditions (like sunlight, temperature, humidity) and other conditions like soil nutrition and moisture (Every 10 minutes) * Weather monitor (Every hour) | DATA SOURCES  * Plants library * Mobile * Cloud * Sensors * Government dataset |
| IMPACT SIMULATION  * metrics such as accuracy, precision, recall, and F1-score * MAE or RMSE to evaluate the performance of regression models * model predicts that a certain type of plant will take longer to grow than it actually does takes low cost * Performance monitor * Not discriminate against any particular group of individuals or plants | MAKING PREDICTIONS  * Pre-trained model to make real-time predictions when new data available * Schedule mode to process batch predictions when new plant data comes * Data pre-processing, cleaning and feature engineering * Data visualization and interpretation * Local machine + cloud-based service |  | BUILDING MODELS  * feature engineering and feature selection to identify the most important factors that impact the growth of the plants. * regression or a decision tree (predict the time required to grow a certain type of plant based on historical data * clustering or anomaly detection, ( identify patterns or unusual behavior in the data that could affect the growth of the plants) | FEATURES  * Environmental data * Soil data * Plant data * User-provided data * Historical data |
|  | MONITORING  * Prediction accuracy: accuracy, precision, recall, and F1-score (estimated time gap is better than customers’ expectation) | * User engagement: Customers don’t change the settings frequently and they like to recommend it to others * Financial impact: ROI | * Yield: estimated time is accurate to plan for harvest and the quality is better than the era didn’t use this system * A/B testing to evaluate different version * Anomaly detection to detect and correct system’s issue |  |

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# [Ready for the next step? Check out the ML Project Checklist!](https://members.ownml.co/plans/126175?bundle_token=e8fb7a30ce112af6170881728e0484d8)

Lead ML implementation with confidence with the CRISP—OWNML methodology (*Cross-Industry Standard Process to create your own Machine Learning system*) and its checklist. End-to-end ML projects are broken down into **9 phases of 4-5 tasks each**.

The checklist serves as a roadmap, listing in detail what you need to do, and in which order, so you can minimize risks and **make the most efficient use of your (and your team’s) time**.

Learn more at [**ownml.co/checklist**](https://www.ownml.co/checklist)