**CASE STUDY**

**TOMATO CROP CLASSIFICATION USING MACHINE LEARNING ALGORITHMS**

**BUSINESS IMPACT**

Accuracy 85%

Model File Size 3MB

**CUSTOMER KEY FACTS**

Industry: Smart Farming

Location: Bangalore, Karnataka

**PROBLEM CONTEXT**

Crop classification is a very important challenge for any farmer to give the best quality vegetable to the people. During earlier times it was manual process wherein they were looking at the color and sorting many vegetables which were either ripened or unripen. So, it was a tedious task for them to perform this activity. We wanted to vanish this manual sorting activity process and enhance the customers by providing a one stop AI solution.

**CHALLENGES**

* Limited availability of green tomato images
* Increasing unseen testing data to improve the ML model
* Model overfitting to be considered

**TECHNOLOGIES USED**

Python 3.8, sklearn library, Jupyter notebook, matplotlib, numpy, pandas, OpenCV

**SOLUTION**

TPRI developed an AI model based on machine learning classification type of algorithms to provide most accurate result of the crop. This will definitely help the horticulture departments to use model and verify if the crop is ripened or unripen. It will save the amount of work of man force and also increase the supply to the market in an effective manner.

**RESULTS**

* Model gives accuracy up to 85%
* Easy to use solution
* Greater cost savings
* Producer and consumer friendly solution
* Can be considered as POC