

Overview

Harvest-Ready Tree Detection identifies and classifies oil palm trees for harvest readiness using machine learning-based computer vision. It detects the presence of loose fruitlets on the ground in the vicinity of the tree as well as indicates the tree location on a semantic map representing an actual plantation area. This aids plantation owners to deploy workers to identified trees to cut fruit bunches saving time and increasing labour productivity.

Features

palm trees.

Harvest-Ready Tree Detection provides the following features:

- Tree Detection and Tracking Using Visual Sensors
 An algorithm based on computer vision and machine learning detects and tracks oil palm trees captured by visual sensors. This ensures the right quantity of palm trees is being evaluated.
- Harvest-Ready Tree Characterisation Based on Loose Fruitlet Detection and Counting
 A module detects and counts loose fruitlets within an oil palm tree's vicinity to determine its harvest readiness.
 The minimum number of loose fruitlets for classification as harvest-ready can be configured.
- Environment Mapping with Tree Location and Harvest-Ready Status
 A module maps the environment and highlights the location and harvest readiness status of detected oil

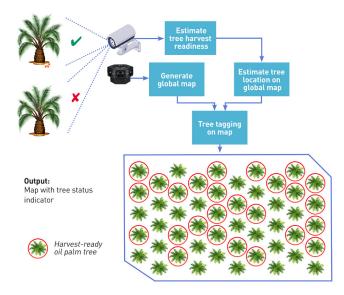
Technology Benefits

The main impacts of Harvest-Ready Tree Detection are:

- Plantation Mapping for Efficient Harvesting
 Manual processes require harvesters to locate trees for
 harvesting before cutting the fruit. This platform generates
 a semantic map locating ready-to-harvest trees—reducing
 missed trees and increasing labour productivity.
- Integrable for Mobility and Operations
 Integration is enabled for various mobility platforms for scanning of trees and be designed into a portable device. No specialised skills are needed to operate the platform—only the ability to move between trees.

Applications

Pre-Harvesting for Oil Palm Plantations



Harvest-ready tree detection for an oil palm plantation



