Harvest-Ready Tree Detection

Harvest-Ready Palm Oil Tree Detection with Fresh Fruit Bunch Detection and Counting

Harvest-Ready Tree Detection is a machine learning-based computer vision analysis platform. It analyses loose oil palm fruitlets to estimate the readiness of a tree for harvesting. The automated detection enables plantation owners to effectively manage resources for harvesting activities.

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

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 palm trees.

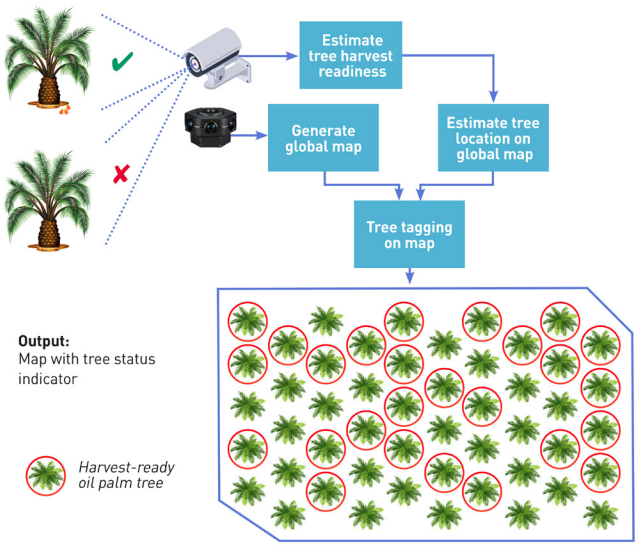
Technology Benefits

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

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