Automated FFB Collection

A High-tech Harvesting Solution for Palm Oil Industry

The Automated FFB Collection System is a high-tech harvesting solution designed to improve efficiency in collecting Fresh Fruit Bunches (FFB) in the palm oil industry. Integrating automation and vision technologies into the Mechanical Buffalo Grabber (MBG) creates an autonomous FFB harvesting solution that streamlines palm oil operations, reduces the need for manual labour and skilled operators. Simultaneously, it increases productivity, accuracy, and overall performance.

Overview

The Automated FFB Collection System is an innovative advancement upgrading the existing Mechanical Buffalo Grabber (MBG) through automation technology. It is designed to autonomously collect Fresh Fruit Bunches (FFB) by integrating cutting-edge vision technology that enables accurate identification, counting, and gathering. This smart system helps to reduce the need for specialised manpower and minimise physical labour, while significantly improving operational efficiency. This leads to a notable increase in productivity within palm oil production, offering a more streamlined and cost-effective harvesting process.

Key Features

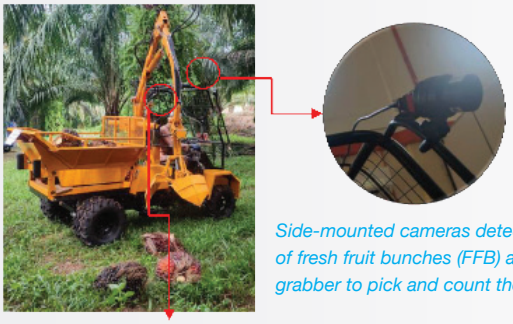
- **Advanced FFB Detection and Tracking with Vision Technology**
  Real-time, multi-angle vision system accurately detects and tracks fresh fruit bunches (FFB) for precise identification and positioning.
- **FFB Counting and Positioning**
  Efficiently counts and locates FFB within the collection area, ensuring accurate grasping and bin placement by the MBG arm.
- **Autonomous FFB Collection and Grasping**
  Combines vision data with MBG control to enable fully autonomous, precise FFB collection, minimising the need for manual input.

Technology Benefits

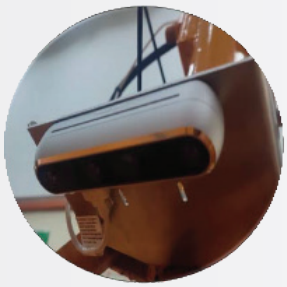
- **Enhanced Operational Efficiency**
  Automates the detection, counting, and collection of Fresh Fruit Bunches (FFBs), significantly reducing manual labour and boosting overall harvesting productivity.
- **Precision in FFB Detection and Collection:**
  Leverages advanced vision technology to ensure accurate FFB identification and positioning, resulting in precise collection and reduced error rates.
- **Scalable and Easy Integration:**
  Designed for seamless integration with various mobility platforms, the system is user-friendly and requires no specialised skills, making it ideal for diverse plantation setups and rapid deployment.

Applications

- FFB Collection for Oil Palm Plantations



Side-mounted cameras detect the presence of fresh fruit bunches (FFB) and triggers the grabber to pick and count them accurately.



A depth camera mounted above the grabber's arm detects fresh fruit bunches (FFB) on the ground and estimates their distance from the arm. This information guides the movement of the grabber to pick up the FFB.

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