

COST EFFECTIVE INDIGINOUS ROBOT ARM FOR FRUIT HARVESTING

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OPERATING MANUAL:



github.com/puran1999/AgriBot

INTRODUCTION:

With emerging technological advancements in automation and control systems, the robotic arms are being widely used in the industry to do a variety of tasks. The majority of industrial robotic arms are designed to be very precise and feature rich. But the Agricultural domain is still struggling with robotic systems in general due to the nature of complex task and rugged usage of the machines. Also, the task may be difficult for the robot while at same time easy for the manual labour. So, the robot arms are expensive, as compared to manual task in agriculture.

The aim of this project is to build an affordable and yet usable robot for fruit harvesting task in agriculture. This is done by specifically selecting only the required features and omitting the other non-necessary expensive features and still be rugged enough to meet industrial load standards.

A special end effector can help with fruit harvesting using only 3 Axis, this also saves power and increase efficiency. Encoder feedback is not provided since the camera system can adjust for that. Real-time torque measurement at each axis is not necessary in harvesting task. These assumptions also make it possible to control the robot motion with simple microcontrollers, further reducing the cost and power requirements.