MANIPULATOR MECHANISM WITH OBJECT DETECTION USING MACHINE VISION SYSTEM

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ABSTRACT

One picture worth more than 10,000 words. In recent increasing need of Automation, Machine vision is supposed to be pioneer future technology. As a part of fully autonomous system, machine vision gives flexibity to identify and manipulate any surrounding object. Ensuring reliability and reducing per unit cost are two fundamental objectives of process automation in manufacturing industry. For pick and place application accurate positioning is essential in assuring product quality and also fast and stable operating speed enables high production rate to be achieve. Positioning accuracy and speed are often two conflicting requirement which are not so easy to attain together.

In this study include, machine vision, image processing and Cartesian manipulator that integrally identify the basic object like rectangle, circle, square and triangle and manipulate as per requirement. Main goal of this paper is to design autonomous system for pick and place application with machine vision support, GUI and analyze performance of system.

KEYWORDS: Cartesian Manipulator, Machine Vision, Pick and Place Manipulator