

SMART ROBOTIC ARM

ABSTRACT

This project gives a smart approach for a real time inspection and selection of objects in continuous flow. Image processing in today's world grabs massive attentions as it leads to possibilities of broaden application in many fields of high technology. The real challenge is how to improve existing sorting system in the modular processing system which consists of four integrated stations of identification, processing, selection and sorting with a new image processing feature.

Image processing procedure senses the objects in an image captured in real-time by a webcam and then identifies color and information out of it. This information is processed by image processing for pick-and-place mechanism. The sorting process is based on a 2 phase operative methodology defined 1) a self-learning step where the apparatus learns to identify objects ; 2) an operative selection process where objects are detected, classified using a decisional algorithm and selected in real time. The Project deals with an automated material handling system. It aims in classifying the colored objects by colour, size, which are coming on the conveyor by picking and placing the objects in its respective pre-programmed place. Thereby eliminating the monotonous work done by human, achieving accuracy and speed in the work. The project involves sensors that senses the object's colour, size and sends the signal to the microcontroller. The microcontroller sends signal to circuit which drives the various motors of the robotic arm to grip the object and place it in the specified location. Based upon the detection, the robotic arm moves to the specified location, releases the object and comes back to the original position.

BLOCK DIAGRAM:

