Abstract

The main intention of this project is to elaborate and simplify how different products manufactured in a factory can be put on a single conveyer for its proper distribution and data
logging in a random sequence. To upgrade this process, images captured by the webcam can be processed with image processing techniques using software like MATLAB. This image processing technique and color detection techniques are applied for the taken image and the appropriate output is obtained in this project. The goal is to develop a conveyor belt which will play a vital role in small scale as well as large scale industries for distributing and logging the data, consequently reducing the cost of labour and multiple conveyors. The system leverages a conveyor belt with 2 motors, a mechanism to sort the products and a Webcam in proximity of the apparatus. The webcam is mounted in parallel to the assembly line focused on the products on the conveyors in order to have known the product and its sequence. The apparatus sends image processed readings and measurements over wires to a microcontroller for further processing. Code running on the microcontroller in conjunction with a code in MATLAB generates an output on the appropriate pins configured by user by a program, which controls the speed and direction of the conveyor belt. This quality in MATLAB image processing toolbox and Arduino has made it possible. This research thus implements an industrial assembly line with methodology in image processing.

References

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**Index Terms**

Computer Science  
Automation

**Keywords**

Arduino Board  
Image Acquisition  
Image Processing  
Matlab  
Conveyor Belt.