

# A Survey Paper on Automatic parcel sorting and delievery to section

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## ABSTRACT—

In manufacturing industries, there arises a need to sort parcel. The parcels may be of similar or different types. The system should be able to detect the parcel and then differentiate the parcel from each other based on their sections. Thus, different parcels and different conditions require different type of processing. Our aim is to scan the QR code attached to parcels using QR code scanner. The input QR code will be processed for detecting the given sections. This automated system does not requires any special human intervention and thus reduces the probability of human made errors. The result of the system are completely reliable which can be further used with huge working systems.

This project is about scanning a QR code of a parcel and sorting as per their sections. In manufacturing industries, there arises a need to sort parcel. The parcels may be of similar or different types. The system should be able to detect the parcel and then differentiate the parcel from each other based on their sections. Thus, different parcels and different conditions require different type of processing. Our aim is to scan the QR code attached to parcels using QR code scanner. The input QR code will be processed for detecting the given sections. The results of the system are completely reliable which can be further linked with large working systems.

**Keywords:** Raspberry Pi 3b, web camera, SD card, Arduino Uno, Servo motor.

## I INTRODUCTION



Img:existing system in industry

## II LITERATURE SURVEY

In order to know in detail about this survey the previous research work done in this direction. The literature survey is done in chronological order from 2000 to 2015. Several studies dedicated the topic were referred.

P. A. Viola and M.J. Jones, has stated that they have worked to develop a method for detecting QR codes in arbitrarily acquired images. Once the QR code is detected, the camera holder can be used to correctly frame the QR code. They are interested not only in detecting the code, but also in determining the size and position of a QR code in an image. In addition, they detected the QR code to allow real-time applications.

Prof.. Vishal dunawade, Omkarjakate, Prasad .V. Yadav, Maqsood Ahamadghori, Vaibhav Kattikar has discovered a system that can be deployed in the organization that requires necessary verification of a stock. This process requires assets scanning either using RFID or BARCODE. But they proposed system which verifies 1 parcel/ sec. Similarly upon

calculation it is found that it takes just 1 and half hr for verifying.

Stephen hehir and Ruud pikaar has invested a new parcel network, including new sorting system. With safety as a key culture pillar of the corporation,safety was comprehensively consider from a initial scope of the future parcel network.

They worked on validation, verification, design and implementation of new parcel sorting system. Their case study states speed of a action and focuses on human factors ergonomics to reduce manual handling risk.

Sanjay Prakash Dabade, Rohan Prakash Chumble designed automated sorting machine using conveyor belt which they in need manufacturing industries in many fields which shows the concept of normal conveyor belt with some intelligence, as it as ability to sort the objects of a different size. They used field programmable gate array(FPGA). The object of different sizes are passed through the sensor and the object having specified size is sorted. By developing such a sorting system the production rate of the manufacturing industry has been increased since thus sorting system replaced the human resource. Also the accidents in manufacturing factories can be prevented because the uses of operator in manufacturing floor had been reduced.

## III IMAGE PROCESSING TECHNIQUES:

- **Image Editing**, which means altering digital images i.e graphic software tools.

• **Image Restoration** • **Comparison between image processing techniques**

Techniques	Advantages	Disadvantages
<b>1. Image editing</b>	<ul style="list-style-type: none"> <li>• It gives best possible look for the image and improves quality.</li> <li>• It removes unwanted elements such as dust specks and scratches.</li> </ul>	<ul style="list-style-type: none"> <li>• It is repetitive and need intense processing.</li> <li>• It is expensive and requires time for become familiarized with its feature.</li> </ul>
<b>2. Image Restoration</b>	<ul style="list-style-type: none"> <li>• It “undo” defects which degrades an image.</li> <li>• It undo the blur and noise to restore the original image.</li> </ul>	<ul style="list-style-type: none"> <li>• It is not applicable in many applications.</li> <li>• It is invariant.</li> </ul>
<b>3. Linear Filtering</b>	<ul style="list-style-type: none"> <li>• It produces output signals that are subject to the constraint of linearity.</li> <li>• It used Gaussian filter which has fast speed.</li> </ul>	<ul style="list-style-type: none"> <li>• Fixed Filter will be expensive computationally.</li> <li>• It also be Immune to estimation variance.</li> </ul>
<b>4. Anisotropic Diffusion</b>	<ul style="list-style-type: none"> <li>• It reduces flat regions.</li> <li>• It preserves edges to higher extend.</li> </ul>	<ul style="list-style-type: none"> <li>• Adjusting parameters is a difficult job.</li> <li>• It degrades the fine structure.</li> </ul>
<b>5. Neural Networks</b>	<ul style="list-style-type: none"> <li>• It lies in their ability to outperform nearly every algorithm.</li> <li>• It has a high Performance.</li> </ul>	<ul style="list-style-type: none"> <li>• It requires much more data than traditional algorithms.</li> <li>• It depends heavily on the size of your data and it makes complex your network.</li> </ul>

clean original image out of the corrupt image taken in order to get back the data lost.

- **Neural Networks**, which are computational models used in machine learning for solving problem.

- **Independent Component Analysis**, which separates a variate signal computationally into additional subcomponents
- **Anisotropic Diffusion**, which is known as Perona-Malik Diffusion, makes it possible to reduce image noise without having to remove useful parts of the image.
- **Pixelation**, which refers to turn printed images into digitized ones.
- **Principal Components Analysis**, a digital image processing technique which can be used for feature extraction.
- **Partial Differential Equations**, which deals with effectively de-noising images.
- **Linear Filtering**. It's another digital image processing technique, which refers to processing input signals and producing output signals.
- **Wavelets**, which stands for a mathematical function which is used in image compression

#### IV CONCLUSION

Hence the automatic QR code scanning and parcel sorting machine should be developed which will reduce time and human intervention and which will be useful in manufacturing industry, courier service etc.

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