

Product Counting

Automate Product Tracking Process



Overview

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Brief Introduction

The term "Product Counting" refers to the systematic manner of counting goods and products that are either manufactured or arrived via transportation. It is a very common activity that is carried out in multiple industries across the globe. It's a multi-stage process that is performed both manually and mechanically.

Traditionally, Manufacturing plants and sites used labour force to perform manual registration of manufactured produce. In a similar fashion, Logistics and Supplier-based Transport companies used manual registration while delivering the goods on-site. This method was brimming with errors and took up a bulk amount of time, resources, and economy which would then go on to delay manufacturing more produce or late deliveries. Not to mention, the redundancy of the situation that workers were forced to go through.

Manual Product Counting v/s Machine-based Product Counting



In a more recent situation, industries have adapted modern technologies i.e. machines that are specially designed to count certain products and perform quality checks at the same time. The world is moving towards a more flexible and adaptable technology that can carry out the same task of product counting using vision-based solutions such as "Video Analytics". There are cameras specially made for counting products which are either installed inside the machinery or on the ceiling at a 90-degree angle.

These modern machinery and solutions can provide a much more efficient and cost-effective way to count incoming or manufactured products. On par with human vision, machine vision can register all the items at faster speeds and with much more accuracy. With zero room for errors, computer vision is sure to take over manual methods of product counting.

When & Where is Product Counting used?

Vision-based solutions such as Video Analytics can detect boxes, bottles, balls, and even things as small as caps while counting for the produced goods. Usually, a Video Analytics-based Product Counting solution is used due to two functional reasons, one is that it can be used while unloading boxes or while some products are far away and cannot be automated using heavy machinery. The second reason is that industries will find it much cheaper to just adopt a vision-based solution rather than an IoT-based solution.

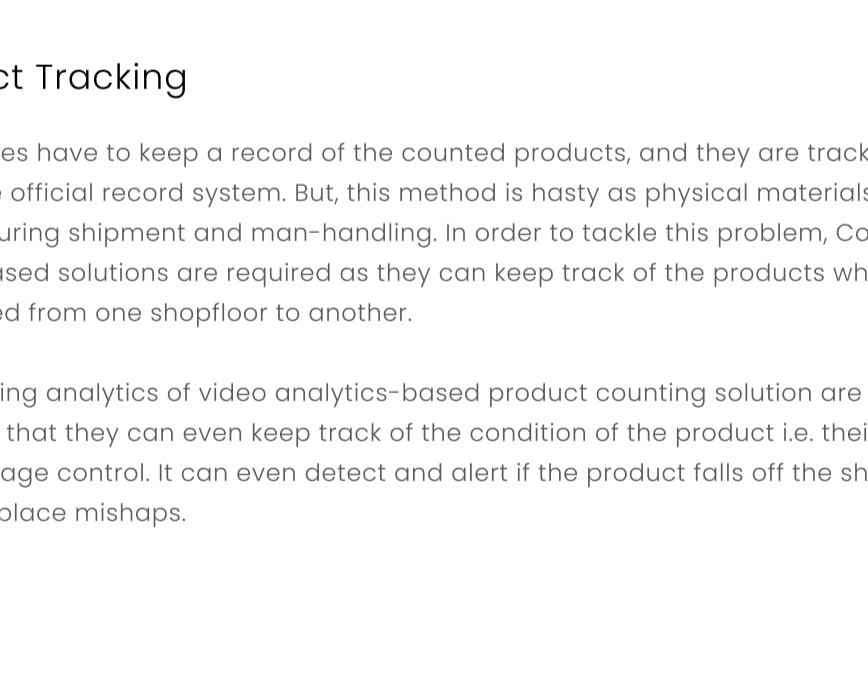


The costs for Machine-based counting solutions are relatively higher, but they are much more efficient and can be used to separate products category-wise. If any product is found to be faulty, it can be sent right back to the heat sink for revamping. The cameras and trackers on a Product Counting machinery are highly accurate and contain sensors for a sensible operation.

When & Where is Product Counting used?

These sensors & high-quality cameras can detect a tiny scratch caused by mishandling by transport services, or due to unchecked manufacturing lines. Similarly, there are machines that are designed for separating bottles into three different categories which are as follows:

- (a) Shape & Size
- (b) Bottle Cap Quality
- (c) Body Labels
- (d) Damages & Scratches



Product Counting solution is used in Manufacturing industries to count toy parts, metal parts, rubber pieces, wooden products, frozen goods, pharmaceuticals, diamonds, moulded components, diamonds and other precious jewellery pieces, buttons, pills and many more such items. A product counting system can keep products safer from internal thefts and for allocating the right space & location for the product.

Working of the Solution

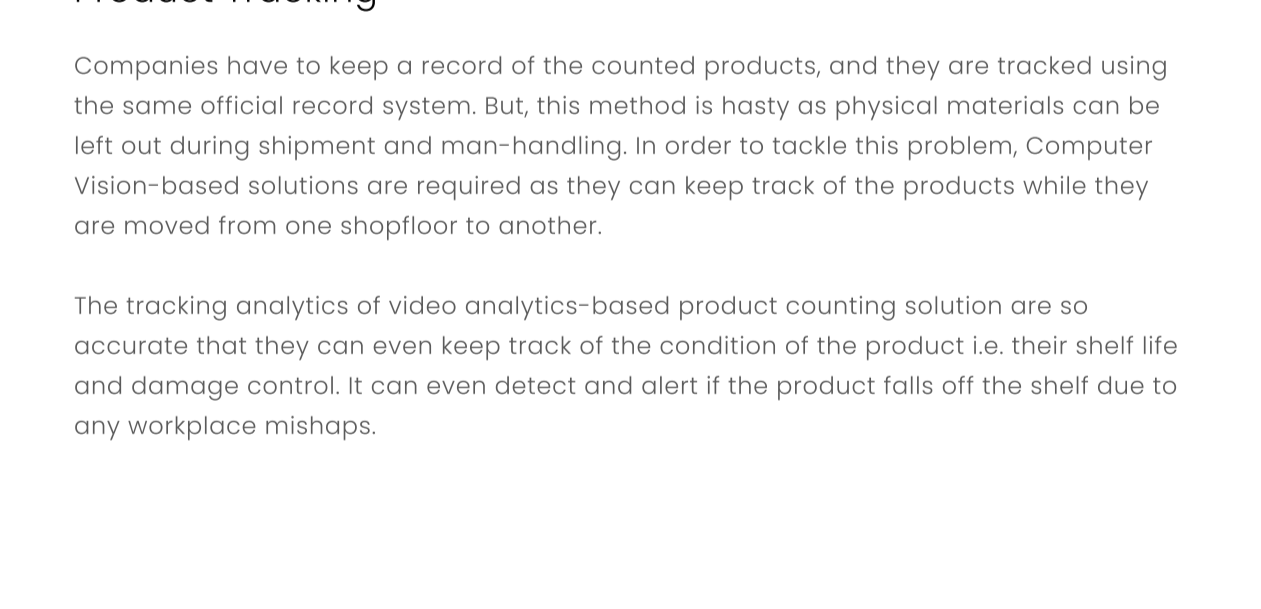
Many industries count products either mechanically or through the weight-in-tonnes method. Mechanical counting can become restricted due to the size and shape of the product and is time-consuming as one has to switch machine parts whenever there is a change in the product.

The only drawback is that the weight-based counting solution is based on the assumption that each part has the exact same weight and the total average weight is used for counting. Most sophisticated machines count weight with slight variations in size and shape and when it comes to materials like wood or rubber, the level of accuracy sometimes drops to 70%.

General Working

Camera-based counting systems are far more accurate and flexible that can count larger products as well as in bulk. These solutions require a large database of images for detecting and recognizing the products in the initial stage. Once the product has been recognized, it keeps the record or count of the products on a dedicated analytics dashboard.

If there is any error or non-functional machinery then there will be an alert generated on the dashboard for the same. Similar notifications can also be opted for by smartphone and Email by Quality Inspection and Assurance Managers.



Working of the Solution

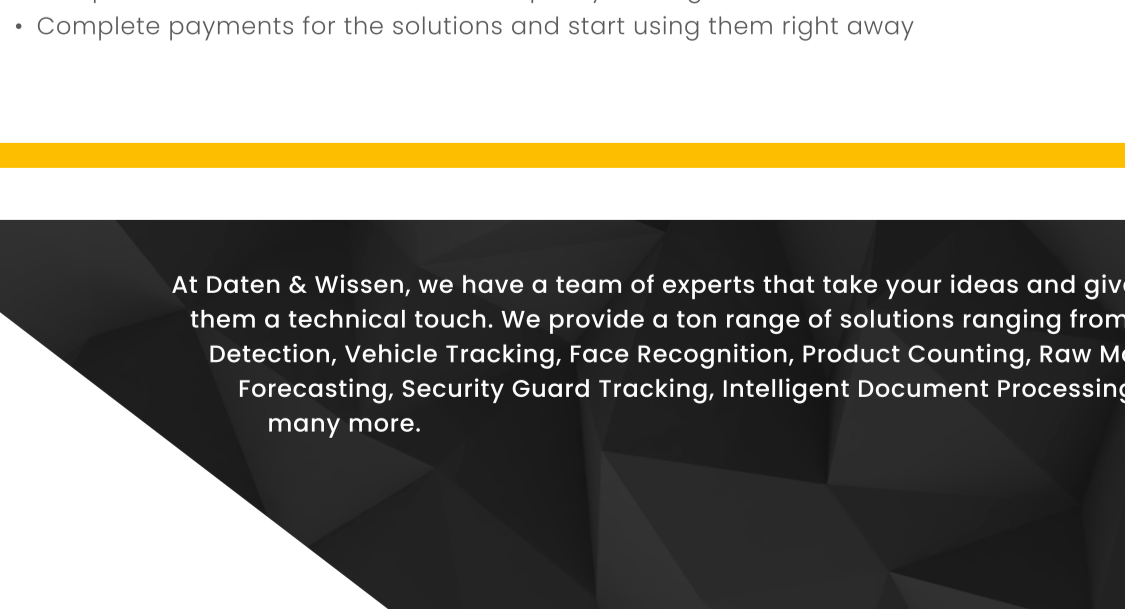
Product Tracking

Companies have to keep a record of the counted products, and they are tracked using the same official record system. But, this method is hasty as physical materials can be left out during shipment and man-handling. In order to tackle this problem, Computer Vision-based solutions are required as they can keep track of the products while they are moved from one shopfloor to another.

The tracking analytics of video analytics-based product counting solution are so accurate that they can even keep track of the condition of the product i.e. their shelf life and damage control. It can even detect and alert if the product falls off the shelf due to any workplace mishaps.

Setting up of Product Solution

In order to set up a product counting solution in your facility, you need to decide whether machine-based counting or vision-based counting is better for your product. If you are looking to keep a record of degraded products and separate them from the main product, then it is better for you to opt for a Machine-based counting solution.



If you want overall detection, count and tracking of all the products with real-time alerts for any incidents, then a vision-based solution might be a much more viable option for your organization.

Let's see how would you set up a camera-based product counting solution in the next following steps.

- Get in touch with Camera Suppliers/Vendors that provide Product Counting Solution
- Alternatively, You can also collaborate with AI/ML companies that provide Computer Vision solutions
- Capture 100s of images of the product, place and location for the solution to study from
- Get the most user-friendly dashboard from your AI-partnered company
- Setup account of the technicians and quality managers
- Complete payments for the solutions and start using them right away

At Daten & Wissen, we have a team of experts that take your ideas and give them a technical touch. We provide a ton range of solutions ranging from PPE Detection, Vehicle Tracking, Face Recognition, Product Counting, Raw Materials Forecasting, Security Guard Tracking, Intelligent Document Processing and many more.



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