



Gold Data Analytics
Gold Data Platform
Gold Cloud Platform

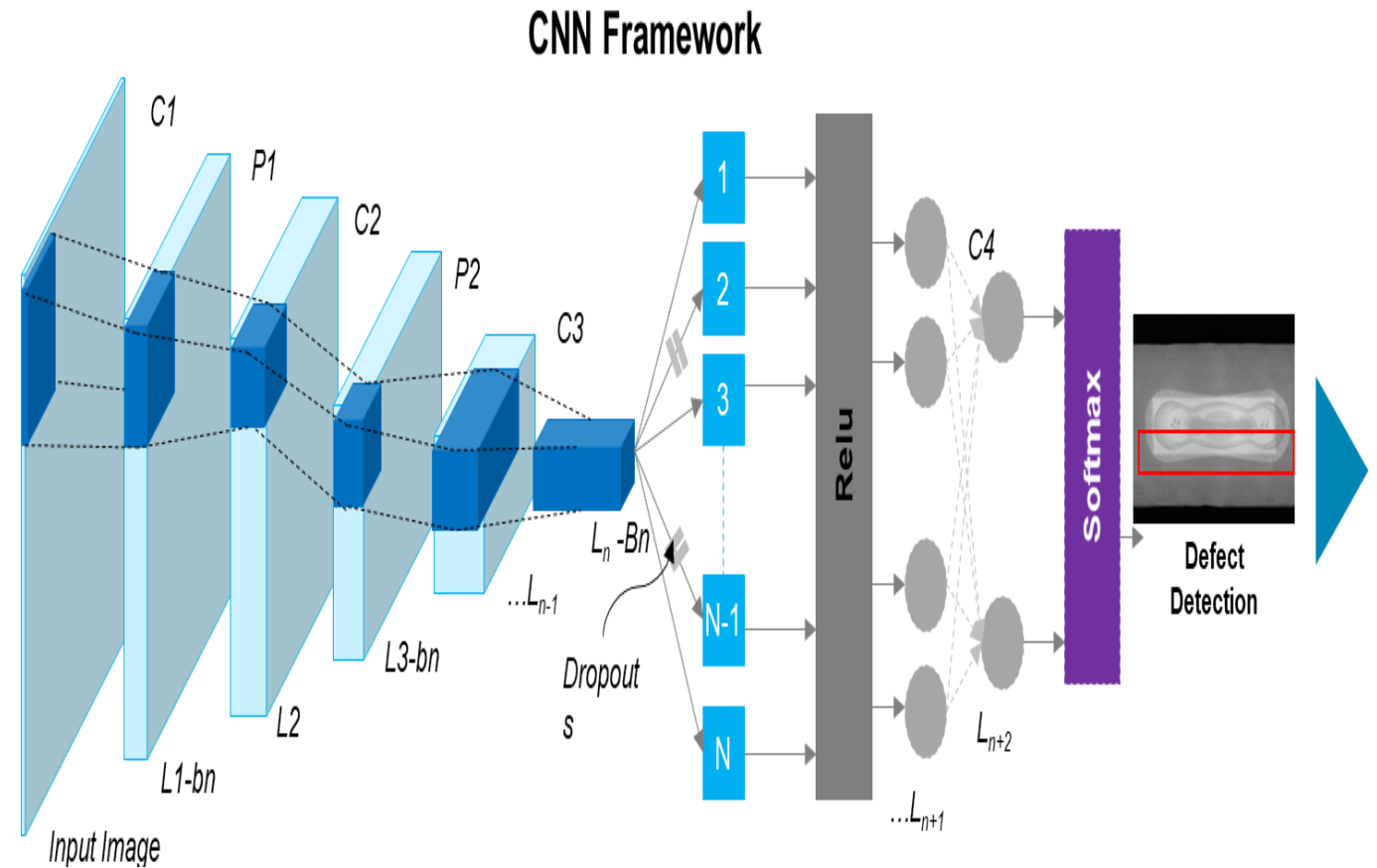


Damage Detection using Machine Vision

Consulting Solution by Affine Inc.

<http://affine.ai/>

Damage Detection using Machine Vision






Femcare Product Manufacturers Face Challenge Of Faster Quality Inspection & Accurate Defect Detection

Sanitary Napkins manufacturing process faces challenge of conformance to specification while manual inspection is less accurate and takes longer time. A computer vision based automated framework can provide high speed inspection and accurate defect detection in femcare products



Defect Types

-  Mistracking
-  Trim
-  Contamination
-  Tear
-  Fold
-  Wrinkle

Challenges

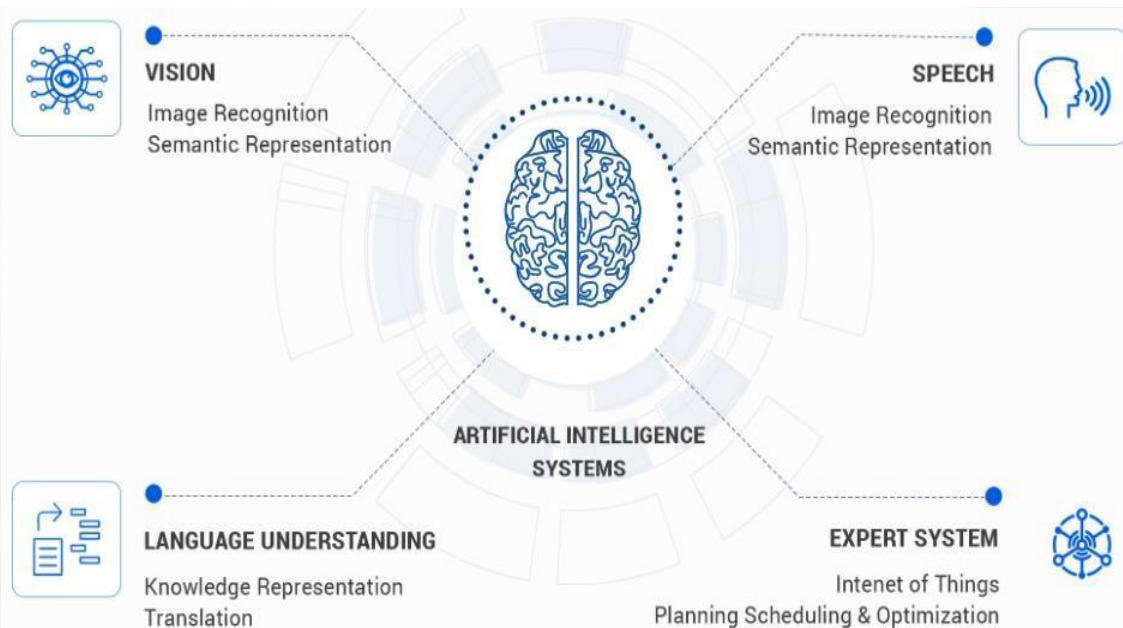
- Minimize manual intervention in identification & classification of defects in femcare products
- Faster and accurate inspection of product specifications conformance during the production process

Ideal Solution

- An Automated Machine vision detection framework using data driven intelligence to accurately identify defect types
- High performance compute environment for large volume of training images with multilevel labelling

Desired Outcomes

- Solution can detect the stains on the appearance of sanitary napkins, and correct position cotton core and wing release paper
- High speed inspection and accurate one-piece defect detection with the maximum line speed



Affine Analytics

Machine Vision Based Defect detection

- Visually identify and tag types of defects during manufacturing
- Augment and boost number of images during preprocessing to create exhaustive training set
- Train and execute multiple models and check for accuracy; select best model based on accuracy of outputs

Automated Identification Of Defects

Visual identification of all the types of defects and mismatches (alignment and direction) that can occur during manufacturing

Classification Of Defect Types

Intelligent algorithms classify defects in the napkin as:

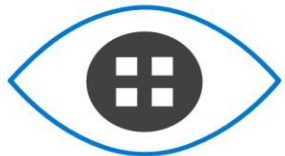
- Mis-tracking
- Trim
- Contamination
- Tear
- Fold
- Wrinkle

Integrated & Scalable Cloud Solution

Simulation of results in a pseudo production environment and assess the performance of a live prototype solution which can be integrated with other technological components

Affine's Defect Detection & Classification Solution Using Microsoft Cognitive Services

Defect Detection solution powered by Microsoft Azure is an easily implementable, rapid time-to-value, QA solution that can reduce costs associated with product defects and increase customer satisfaction



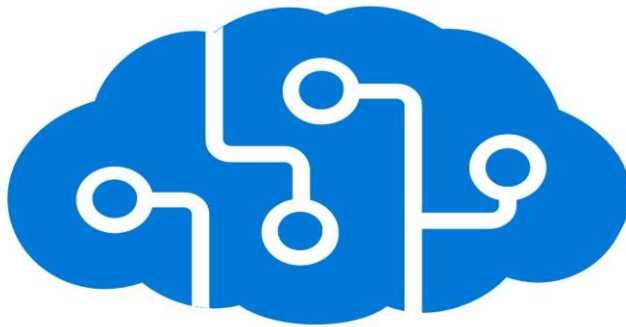
Vision



Speech



Language



**Microsoft Azure
Cognitive Services**



Knowledge

Lean Approach To Implementation

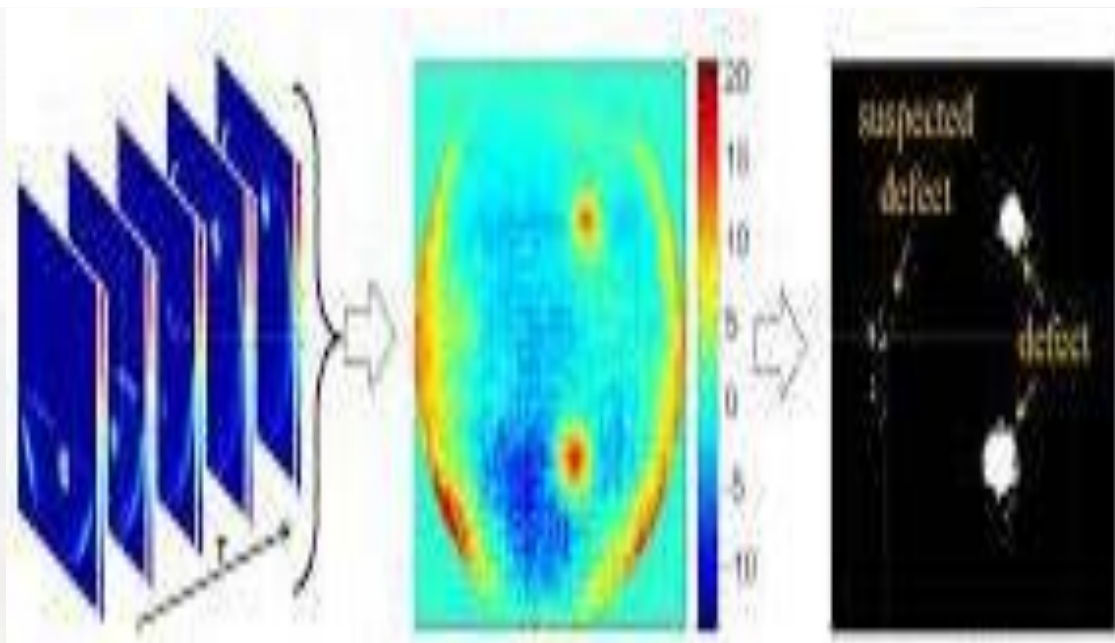
Manufacturers working with images from any vision system can leverage them to integrate with new and emerging technologies like Cognitive AI, and computer vision

Managing Volume At Scale

Defect detection in high volume of images moving at high speed, the solution uses AI from Azure to achieve visibility over the entire line

Champion Model With High Precision

AI-based defect detection models exhibits higher precision level to accurately identify even small flaws that may have a large impact on customer satisfaction



Fortune 500, CPG Manufacturing Company

“Affine Team is very much capable and delivering the high quality of work. The technical approach team takes, almost matches the level of PHDs in such field. The business users want to enhance the solution to add more defects to be detected automatically”

Faster Quality Inspection

Trained AI models with multilevel labelled dataset enables quicker defect detection and faster quality inspection process

Higher Accuracy

Model validation is performed for checking desired accuracy which can predict exact location of defect

Improved Throughput

Automated defect detection and removal of parts from production line saves resources required for rework and improves overall manufacturing throughout



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Want to know more?



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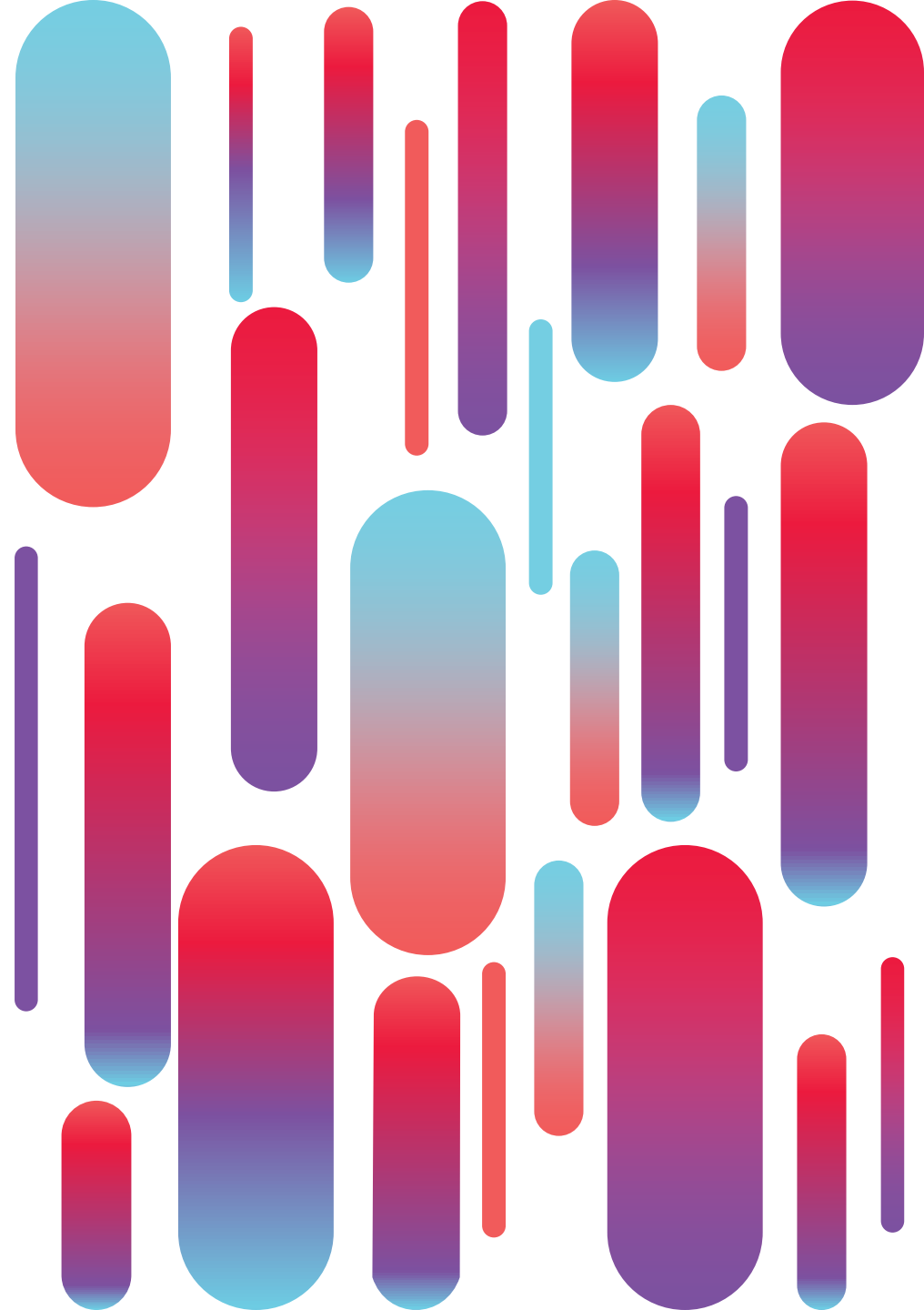
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THANK YOU



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