SOLOMON

Vision with Intelligence

# Solvision

## AI Solution for One-Stop Visual Inspections

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### AI Solution for Advanced Defect Recognition

As a leading manufacturer of AI and 3D vision solutions, SOLOMON has provided services to wide-ranging industries across the world, assisting manufacturers to optimize production processes and improve yield.

SOLOMON has innovatively launched the "Solvision" intelligent inspection solution that integrates AI technology with comprehensive functions of recognition, positioning, grouping/classification, optical character recognition, and counting.

## Seven Product Advantages

### Superior Recognition

With comprehensive interface functions, Solvision adopts an advanced neural network that can continuously accumulate learning experience and modify the AI detection model to improve detection rates over time.

### Few Learning Samples Required

Solvision's built-in "Data Augmentation" tool is used to increase the AI training database, implementing training functions such as rotation, scaling, resolution reduction, or brightness adjustments to enhance the stability and recognition capability of the AI model—requiring just a few image samples for learning.

### User-Friendly Interface

A programming-free AI vision software, Solvision provides an intuitive, graphical interface with built-in tools of "Auto Labeling", "Data Augmentation" and "Data Analysis" that can easily perform feature search, extraction, and classification. The Auto Labeling tool allows users to mark complex features and shapes efficiently.

### Comprehensive Functions

Solvision provides four supervised and unsupervised detection tools—Feature Detection, Instance Segmentation, Classification, and Anomaly Detection—that enable the AI to learn from labeled image samples to perform defect recognition, feature positioning, object classification, optical character recognition, and measurement.

### High Detection Speed

Under the same graphics card standard, Solvision improves the detection speed of unrecognizable fonts by AOI at a high speed of 10ms, which is better than the average industrial speed of 30ms. Solvision uses multiple GPUs and graphics cards to disperse the AI computing load, accelerating the recognition speed of small defects in a large visual field and maintaining the detection consistency.

### Complete Report

Solvision has an interactive Confusion Matrix, a two-dimensional array that analyzes the AI model's inspection capabilities, and provides an interactive interface that can speed up the time searching for wrong images, greatly improving operational convenience.

### Easy Integration

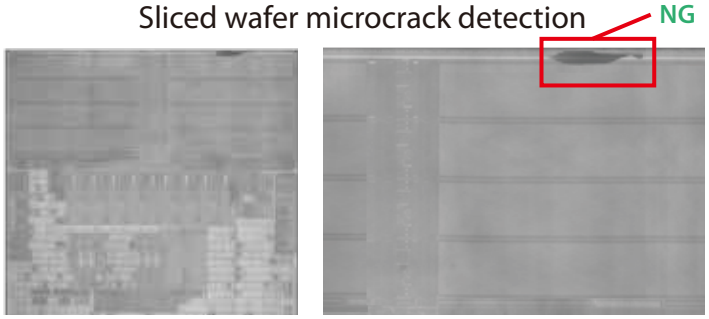
Solvision can be quickly connected to a system or device without extensive manual effort. The inspection results and object positions are output through the TCP/IP communication interface, which can be sent to PLC or various branded arm controllers in real-time. Concurrently, it integrates third-party programs such as LabView, Visual Studio C#, C++, etc., to achieve data acquisition and production line operation upgrades.

## Why Solvision over traditional vision systems?

1. Significantly shorter hardware evaluation and design time
2. Saves time from developing algorithms
3. More flexible and advanced detection capabilities
4. Eliminate the need for manual re-inspection
5. Substantially reduce costs of inspection hardware
6. Save costs from algorithm development

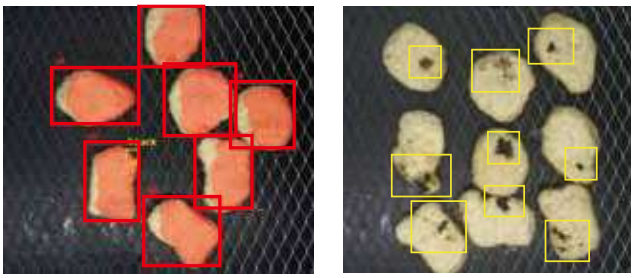
### Semiconductor Industry Applications

Sliced wafer microcrack detection



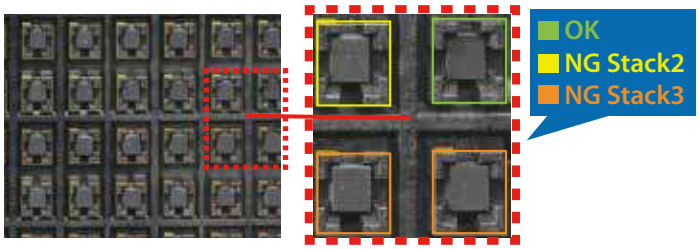

### Food Industry Applications

Chicken nugget defect detection



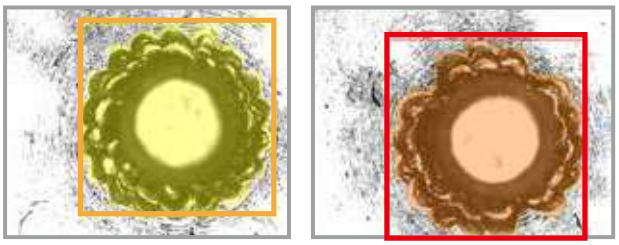

### Semiconductor Industry Applications

IC bouncing and stacking detection




### Traditional Applications

Laser welding quality classification

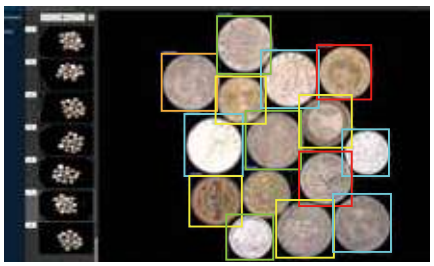



### Manufacturing Applications

Background interference and deformed letters OCR

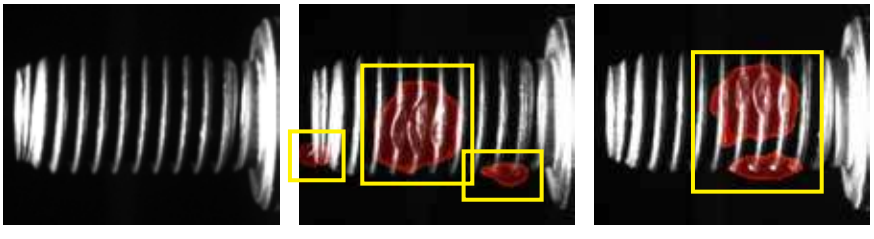
### Accurate Detection of Reflective Surfaces

Coin sorting and counting



Push-through-packages inspection

### Unsupervised Learning



# Hardware Requirements

| | |
|---|---|
| Module Name | SLM VISAI-S100 |
| Operating System | Windows 10 (64bit) |
| CPU | Minimum : Intel Core i5 / Recommended : Intel Core i7 |
| GPU | Minimum : Nvidia RTX 1070 (RAM : 8GB) / Recommended : Nvidia RTX 3080 Ti |
| RAM | Minimum : 16GB / Recommended : 32GB |
| Output Interface | TCP / IP, Modbus TCP |
| Coding Interface | Minimum : .Net framework 4.5.2 |
| Coding Language | Microsfot Visual Studio C #, C ++, VB.NET |
| Compatible With | NI LabVIEW 64 bits, Label Me |
| Language | English |
| Image Format | PNG, BMP, JPG, JPEG, JPE, JFIF, TIF, TIFF |

- Specifications subjects to change without notice.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