



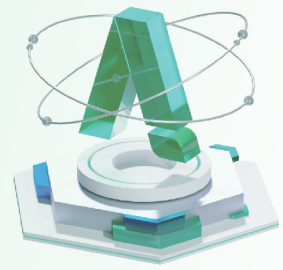
Intelligent Inspection for the Future

Vitoo Large Model Intelligent Agent

Embrace new quality productivity, innovate and create value for users

Vitoo AI Training Platform

One-stop development, benchmarked against world-class algorithm platforms



Vitoo AI Training Platform software comes with a variety of high-performance deep learning algorithms, offering capabilities such as data management, intelligent annotation, training, model evaluation, model quantization, online inference verification, and deployment, from data import to model deployment for one-stop development.

The platform features workflow-based operations, enabling the construction of complex AI tasks without programming.

Six Functional Modules



Classification

Classifying objects according to predefined attributes for carrying out inspection tasks in quality control



Semantic Segmentation

Conducting pixel-level inspection of images to precisely identify and extract the contours and categories of defects in complex scenarios



Object Detection

Performing area-level detection on images to precisely locate objects for counting or defect detection



Instance Segmentation

Incorporating the strengths of semantic segmentation and object detection to effectively differentiate unordered stacked objects



Anomaly Detection

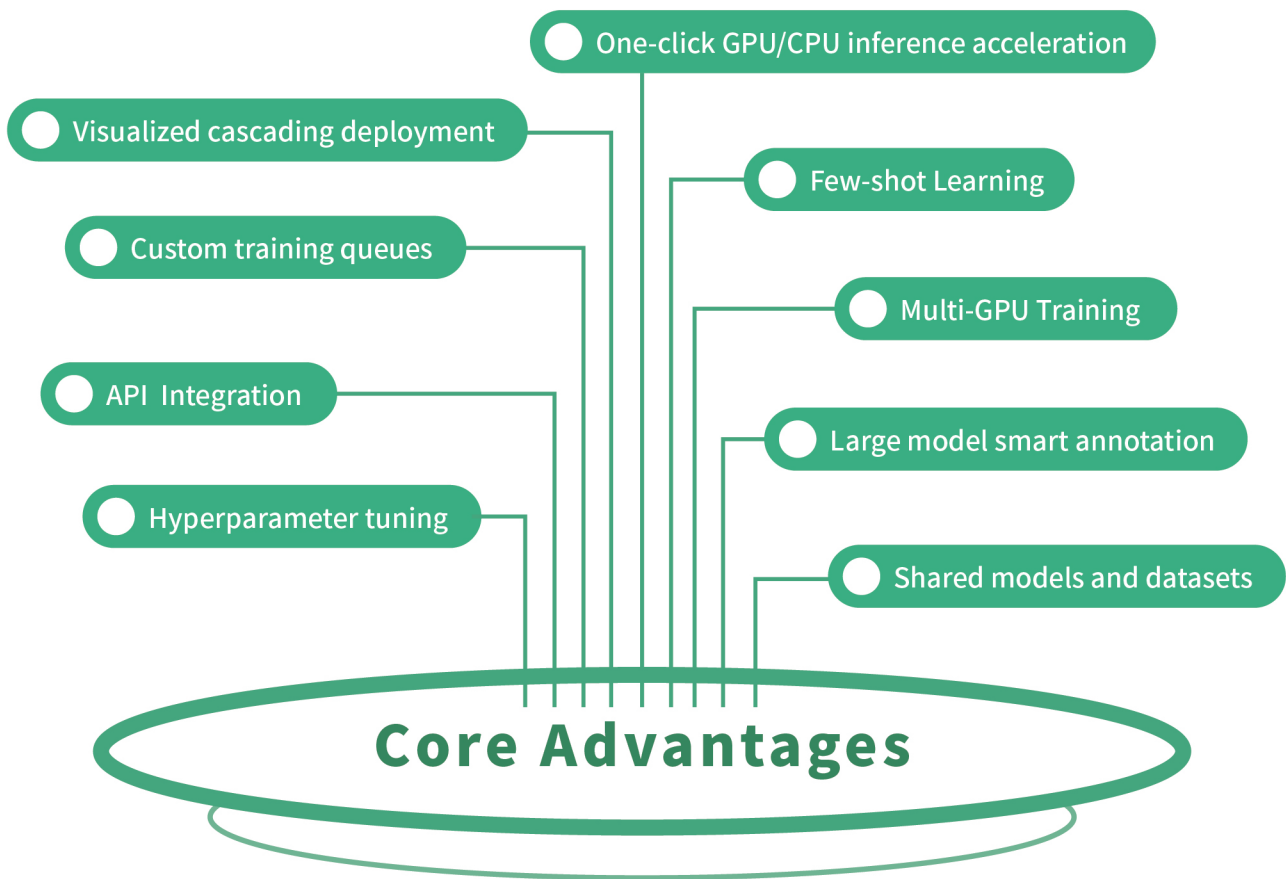
It is not necessary to label the data during model training, and the outliers in subsequent images can be accurately located



OCR

Not affected by direction, font type, or polarity, it can effectively recognize complex characters in industrial scenarios

Core Advantages



Application Value

01 Multi-industry vision inspection applications

Semiconductors, new energy, automotive, healthcare, photovoltaics, consumer electronics, and other industries have seen extensive application.

02 Improve quality and efficiency, reduce costs and inventory

Machines replace manual inspection, offering high cost-performance, enabling 24-hour uninterrupted production, which helps enterprises to expand their scale. Real-time data monitoring can quickly identify and improve production issues, enhancing inspection accuracy and ensuring the stability and reliability of products.

03 Flexible customization, rapid deployment

Provide an intuitive graphical user interface to lower the technical barrier. After a quick 3-day training, one can independently take charge of project follow-ups. Offer the capability for rapid model building and training to shorten the time from concept to product.

Vitoo Vision Platform Software

Professional Industrial Vision Platform Software



Vitoo Vision Platform is a universal algorithm platform that integrates modules such as 2D, 3D, and deep learning. It features a vast array of algorithms, supports multiple hardware devices, and offers both visual programming and SDK for secondary development. The platform is designed with a simplified approach for industrial scenarios, making it easy for even visual novices to get started.

Core Features



Guided contraposition



Defect Detection



Character Recognition



Motion Control



Dimensional Measurement



Engineering Management

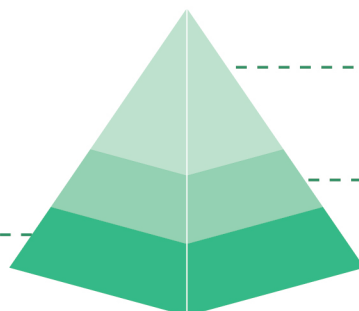
Supports Multiple Development Modes

Supports SDK for
Secondary Development

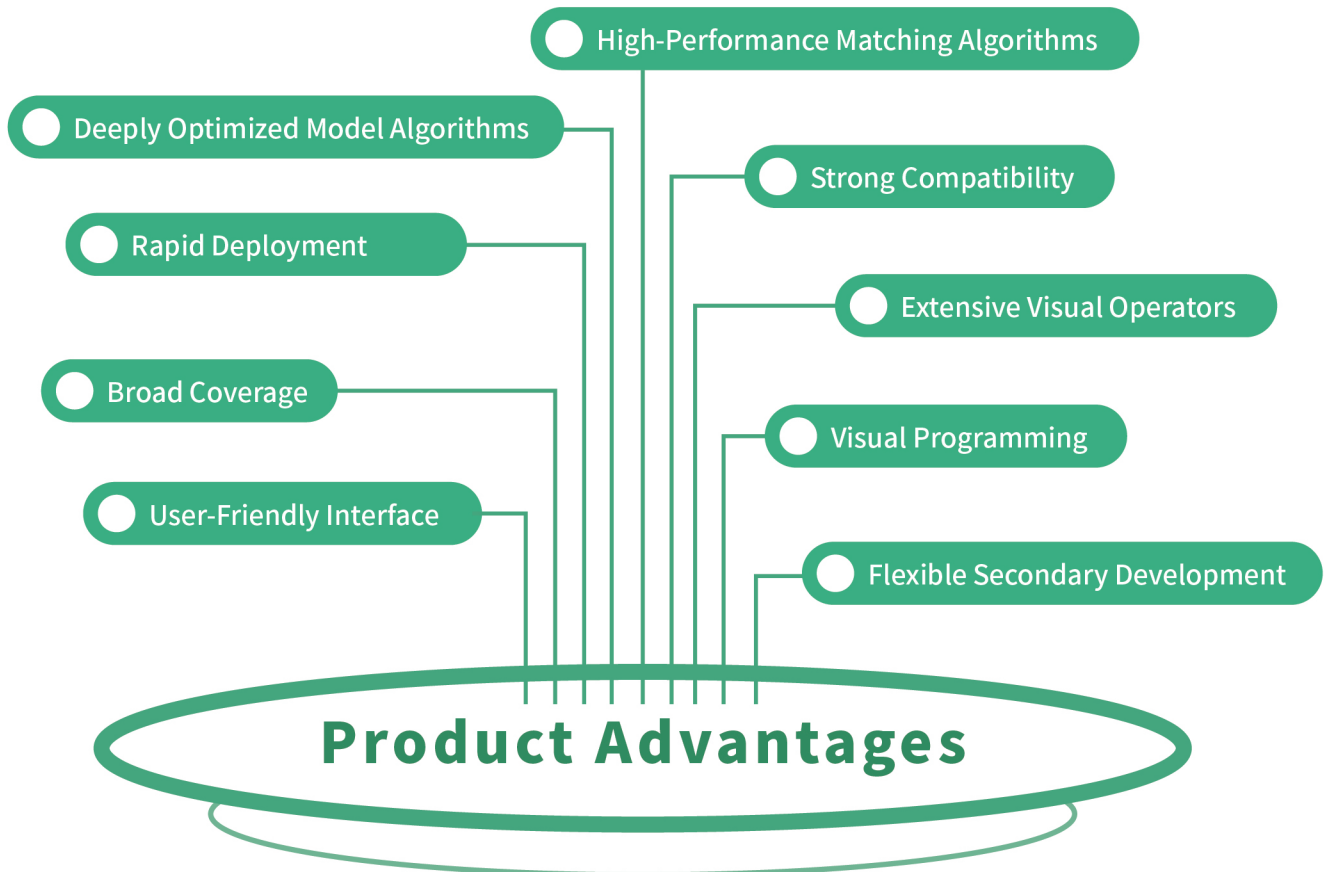


Supports Visual Image
Programming

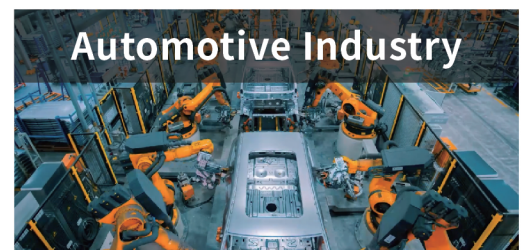
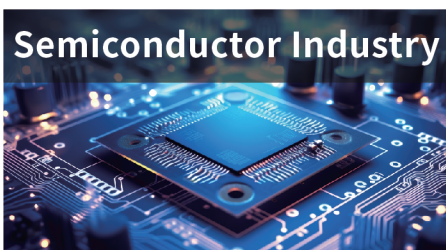
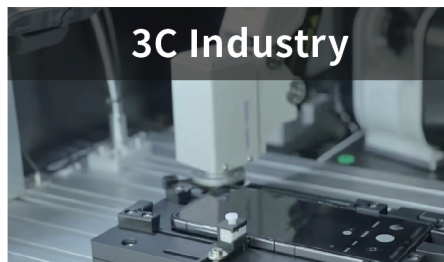
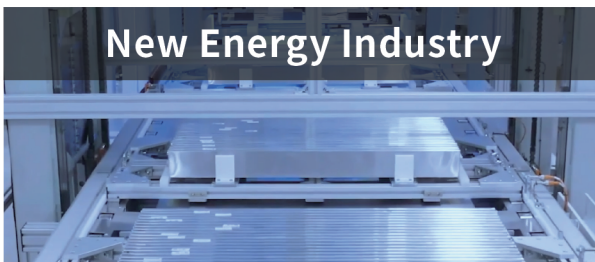
Supports Custom
User Development



Product Advantages



Application Industries



Top Cover Weld Detection

For the post-welding defect inspection scenario of the top cover of power batteries, using 3D+AI technology, it is possible to accurately identify defects such as broken welding, pits, protrusions, un-welded areas, weld spurs, edge turning, pinholes, R-corner imperfections and so on.

Scheme Advantage



Capable of detecting R-corner defects



Online High-Speed Inspection

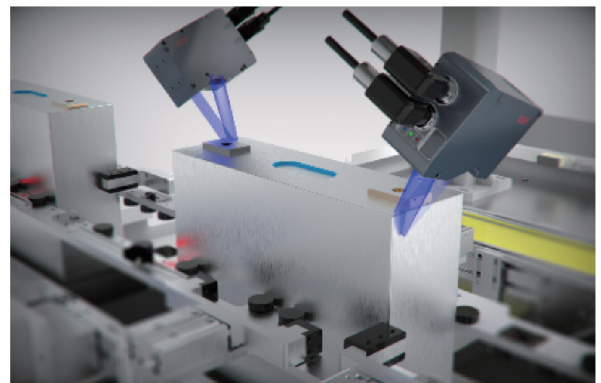


Standardized, modular design, adaptable to different product models

Scheme Introduction

3D+AI technology, using surface defect extraction and flaw detection algorithms to achieve the detection of all defects; the R-corner area has issues with abnormal reflection that makes it difficult to detect, so the approach is to first extract the weld R-corner area, and then use AI inference to detect the defect area.

- Software: Vitoo Vision Platform + Vitoo AI Platform
- Hardware: LIG-DG Series 3D Camera



Inspection Results

Customized imaging technology, with the development of dedicated firmware, fast scanning frequency, capable of mass production, enhancing inspection efficiency, improving product yield, and saving a significant amount of time and labor costs.

200mm/s

Scanning speed

<0.2%

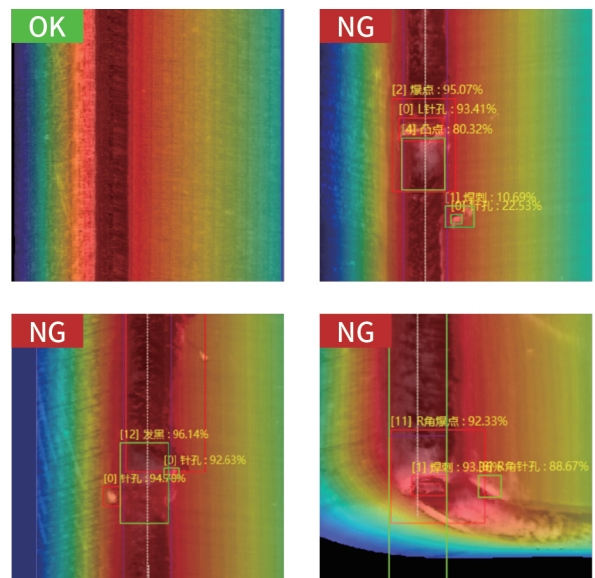
The Overkill Rate

0%

The Underkill Rate

≥0.2mm

Minimum Detectable Defect Diameter



Seal Nail Welding Detection

In the scenario of post-welding defect detection for sealing nails in power batteries, we utilize the technology of 2D+3D+AI, which enables precise identification of defects such as pinholes, bursts, pits, discoloration, welding ash, incomplete weld, and welding slag.

Scheme Advantage



Capable of detecting cracks and pinholes



Solve the image wavy pattern problem

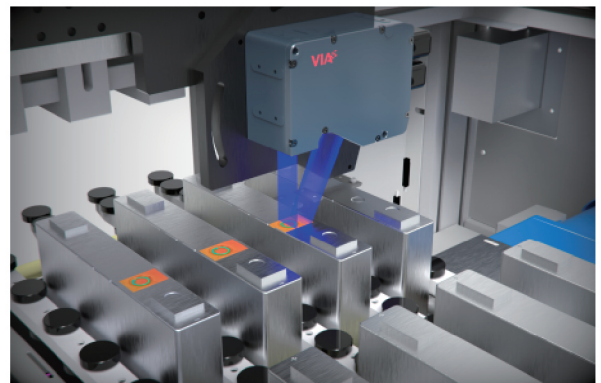


Ultra-high precision vision system

Scheme Introduction

Utilizing a 3D camera, coupled with AI inspection algorithms that are deeply optimized for welding processes, enhances the detection capabilities for minute defects such as pinholes. By incorporating a special wavy pattern correction algorithm, it is possible to correct wavy patterns caused by machine vibrations without affecting other defect forms.

- Software: Vitoo Vision Platform + Vitoo AI Platform
- Hardware: LIG-DG Series 3D Camera + 2D Camera



Inspection Results

Increase noise filtering algorithms, enhance the accuracy of positioning detection areas, and reduce the detection time of the positioning defect algorithm; improve inspection efficiency, increase product yield, and save a significant amount of time and labor costs.

20PPM

Detection Speed

<0.5%

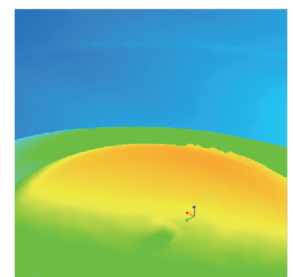
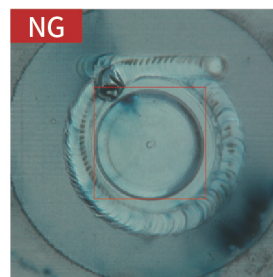
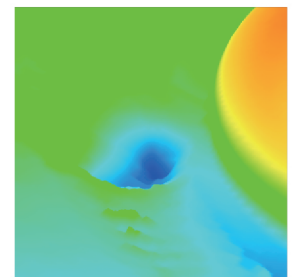
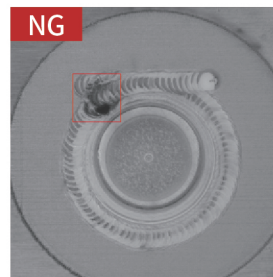
The Overkill Rate

0%

The Underkill Rate

≥0.2mm

Minimum Detectable Defect Diameter





Xiamen Weitu Software Technology Co., Ltd

Website: <https://weiyaauto.com/>

Address: Room 804, Jinfeng Building, No.1 Linhou West Road,
Huli District, Xiamen City, Fujian Province

SpecAlvision Ltd.

Metelinrinne 16

FIN-90420 OULU

+358 50 413 8839

timo.jauhainen@specalvision.com

www.specalvision.com