



AI视觉检测解决方案集成商

AI VISUAL INSPECTION SOLUTION INTEGRATOR

应用于汽车、石油化工、粉末冶金、新能源等多种领域

IT IS APPLIED IN VARIOUS FIELDS SUCH AS AUTOMOBILES,
PETROCHEMICALS, POWDER METALLURGY, AND NEW ENERGY

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AI 光学筛选机

AI OPTICAL SORTER



产品简介

PRODUCT INTRODUCTION

AI光学筛选机采用专用转盘做为检测平台，在转盘上部、下部，侧面以及特殊角度布置检测工位，通过自主开发软件和AI算法，确保外部全方位的覆盖性检测，在大大减少检测盲区的同时也避免对产品造成损伤。

视觉工位配备常规侧视、俯视、仰视尺寸检测工位，同时还配套多相机360及外廓360工位；搭载传统+AI机器视觉算法，可以尺寸和缺陷全方位解决。

The AI optical sorter uses a dedicated turntable as the inspection platform. Inspection stations are arranged on the upper, lower, side and special angles of the turntable. Through self-developed software and AI algorithms, it ensures all-round coverage inspection externally, greatly reducing inspection blind spots while avoiding damage to the products.

The visual workstations are equipped with conventional side-view, top-down and bottom-up dimension inspection workstations, and are also provided with multi-camera 360-degree and external 360-degree workstations. Equipped with traditional and AI machine vision algorithms, it can comprehensively solve problems related to size and defects.

设备参数

EQUIPMENT PARAMETER

项目Item	500挂盘机台 500 Hanging Plate Machine	600挂盘机台 600 Hanging Plate Machine	800挂盘机台 800 Hanging Plate Machine
机台尺寸 Machine Size	1200×1200×1950mm	1200×1200×1950mm	1500×1500×1950mm
筛选精度 Screening Accuracy	±0.01mm	±0.01mm	±0.01mm
相机数量 Number Of Cameras	1-10个	1-10个	6-16个
转盘直径 Disk Diameter	500mm	600mm	800mm
玻璃盘厚度 Thickness Of The Glass Plate	3-5mm	5mm	5mm
检测速度 Detection Speed	50-1000pcs/min	50-1000pcs/min	50-1000pcs/min
气压规格 Air Pressure Specification	0.4-0.6Mpa	0.4-0.6Mpa	0.4-0.6Mpa
电压/频率 Voltage/frequency	220V/50HZ	220V/50HZ	220V/50HZ
功率 Power	3-4KW	3-4KW	3-4KW
适用产品 Applicable Product	长杆可挂工件 The Long Rod Can Be Used To Hang Workpieces	在转盘上可稳定立得住产品 The Product Can Stand Stably On The Turntable	立得住、检测项目多产品 Reliable Products With A Wide Range Of Testing Items
检测项目 Test Item	尺寸、外观缺陷 Size and appearance defects	尺寸、外观缺陷、材质混料、探伤裂纹 Dimensions, appearance defects, material mixing, flaw detection cracks	尺寸、外观缺陷、材质混料、探伤裂纹 Dimensions, appearance defects, material mixing, flaw detection cracks

备注:筛选精度可根据精度要求定制
Note: The Screening Accuracy Can Be Customized According To The Accuracy Requirements

AI 探伤视觉检测设备

Ai Flaw Detection Visual Inspection Equipment



产品简介

PRODUCT INTRODUCTION

AI探伤视觉检测设备是行业内首创突破金属产品内部缺陷检测的AI视觉无损检测设备，设备由上料系统、充磁系统、磁粉喷淋系统、AI探伤视觉检测系统、下料退磁系统组成。

AI探伤视觉检测系统布有多个360检测工位，通过自主开发紫外光学系统，自主开发软件和AI算法，对探伤后缺陷进行全方位的覆盖性检测。

The AI flaw detection visual inspection equipment is the first in the industry to break through the detection of internal defects in metal products through AI visual non-destructive testing. The equipment consists of a feeding system, a magnetization system, a magnetic powder spray system, an AI flaw detection visual inspection system, and a discharging demagnetization system.

The AI flaw detection visual inspection system is equipped with multiple 360-degree inspection stations. By independently developing the ultraviolet optical system, software and AI algorithms, it conducts all-round coverage inspection of defects after flaw detection.

设备参数

EQUIPMENT PARAMETER

项目Item	参数 Parameters		
	充磁机台 Magnetizing Machine	喷淋机台 Spray Machine	AI探伤检测机台 AI Flaw Detection Machine
机台尺寸 Machine Size	1300×800×1950mm	1200×1200×1950mm	1200×1500×1950mm
功能 Function	由上料理料机 and 充磁机台组成，对产品进行充磁 It Is Composed Of A Feeding Machine And A Magnetizing Machine To Magnetize The Products	对充磁的产品进行喷淋磁粉液，并输送到检测机台 The Magnetized Products Are Sprayed With Magnetic Powder Liquid And Then Conveyed To The Testing Machine	装载多个360工位，对磁粉喷淋后产品进行全方位AI探伤检测 Equipped With Multiple 360-degree Workstations, It Conducts All-round AI Flaw Detection On Products After Magnetic Powder Spraying
检测速度 Detection Speed	50-200pcs/min		
气压规格 Air Pressure Specification	0.4-0.6Mpa		
电压/频率 Voltage/frequency	380V/50HZ, 220V/50HZ		
功率 Power	6-8KW		
适用产品 Applicable Product	铁磁性金属零件 Ferromagnetic metal parts		
检测项目 Test Item	尺寸、材质混料、探伤裂纹 Size, Material Mixing, Flaw Detection Of Cracks		

备注：可根据工件定制AI探伤视觉检测方案，如在线检测等
Note: AI Flaw Detection Visual Inspection Solutions Can Be Customized According To The Workpiece, Such As Online Inspection, Etc

AI深度学习系统

AI DEEP LEARNING SYSTEM

AI深度学习是以深度神经网络为基础,通过无监督学习或监督式学习的一种自动化检测算法。

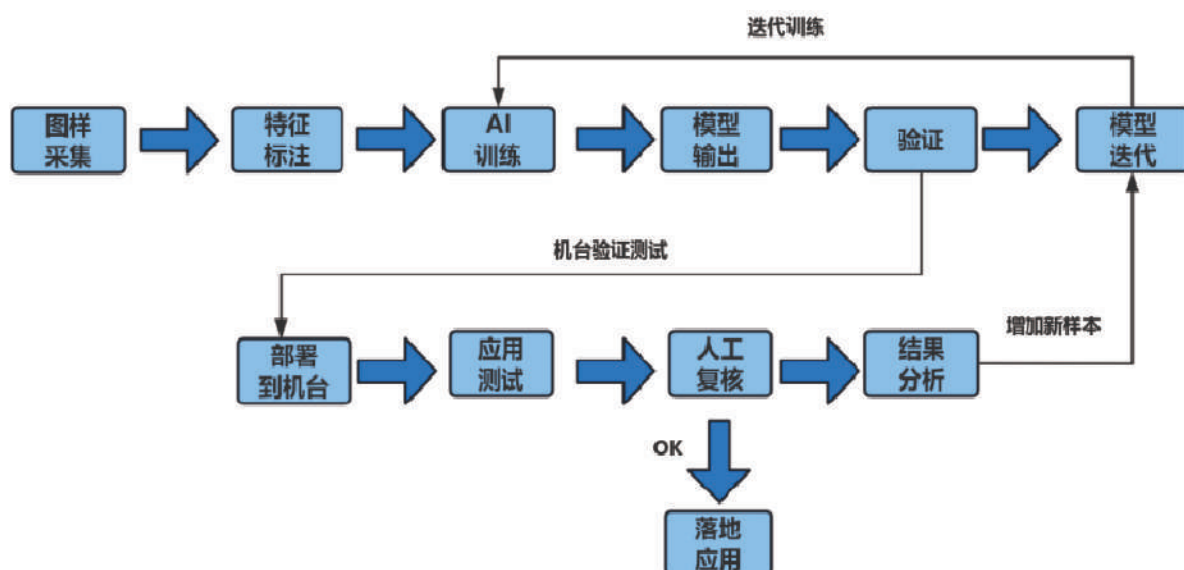
- ❗ 无监督学习主要以良品图片为集合,监督式学习以标记后的缺陷品图片和良品图片为集合,对模型进行训练和验证;然后使用训练后的数据,对未知的图片进行检测。
- ❗ 无监督学习适用于场景高度一致且干扰较少场景,如印刷品检测;监督式学习适用于不完全一致场景,如金属表面检测;
- ❗ 训练集合的图片分布和类型越全面,数量越多,模型训练效果越好,最终检测效果就会越好。

AI deep learning is an automated detection algorithm based on deep neural networks and through unsupervised learning or supervised learning.

- ❗ Unsupervised learning mainly takes good product images as the set, while supervised learning takes the labeled defective product images and good product images as the set to train and verify the model. Then, the trained data is used to detect the unknown pictures.
- ❗ Unsupervised learning is applicable to scenarios with highly consistent scenes and less interference, such as printed matter detection; Supervised learning is applicable to inconsistent scenarios, such as metal surface inspection;
- ❗ The more comprehensive and diverse the image distribution and types in the training set are, and the greater the quantity, the better the model training effect will be, and the final detection effect will be better.

AI深度学习部署流程

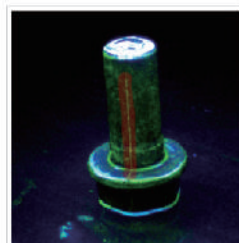
DEPLOYMENT PROCESS OF AI DEEP LEARNING



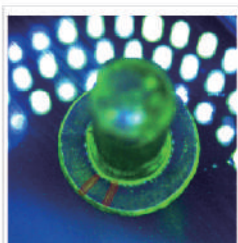
AI检测案例

AI DETECTION CASE

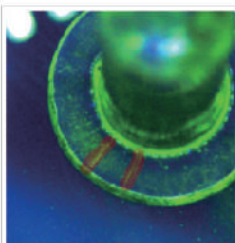
Ai探伤裂纹检测 Ai Flaw Detection And Crack Inspection



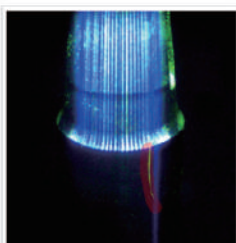
探伤裂纹1
Flaw Detection Cracks 1



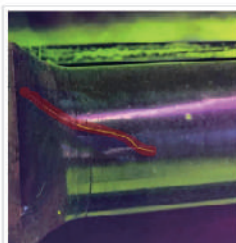
探伤裂纹2
Flaw Detection Cracks 2



探伤裂纹3
Flaw Detection Cracks 3



探伤裂纹4
Flaw Detection Cracks 4

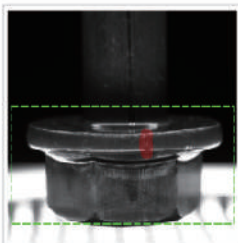


探伤裂纹5
Flaw Detection Cracks 5

螺栓螺母开裂 The bolts and nuts are cracked



头部裂纹
Bottom Crack



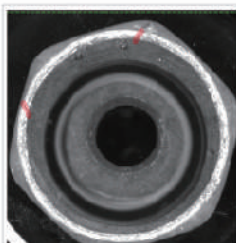
法兰开裂
Flange Cracking



顶面裂纹
Top Surface Crack

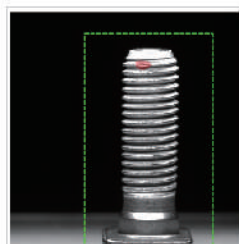


侧面开裂
Side Cracking

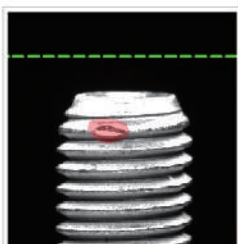


法兰开裂
Flange Cracking

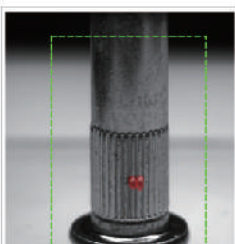
螺牙磕伤积液 The Screw Thread Is Injured And Accumulates Fluid



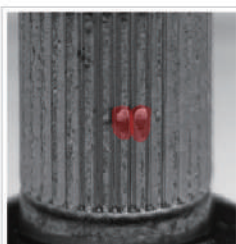
螺牙磕伤1
Screw Thread Injury 1



螺牙磕伤2
Screw Thread Injury 2



直纹磕伤1
Straight Line Scratch 1

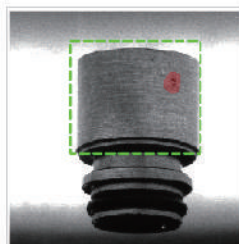


直纹磕伤2
Straight Line Scratch 2

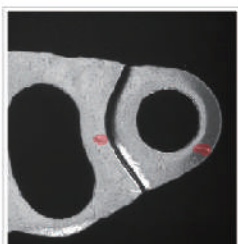


螺纹积液
Thread Fluid Accumulation

汽车零部件压伤/划伤/磕伤 Crush/scratch/knock On Automotive Parts



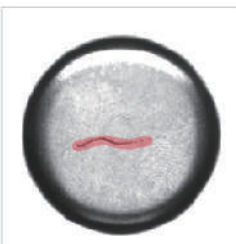
外壁压伤
External Wall Crush Injury



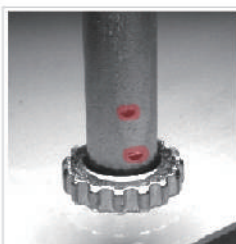
冲压件压伤
The Stamping Part Is Crushed



侧面压伤
Side Crush Injury



顶面划伤
The Top Surface Is Scratched

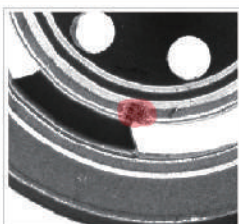


杆部磕伤
The Pole Is Injured

粉末冶金件缺料/碰伤 Powder Metallurgy Parts Are Short Of Materials/damaged



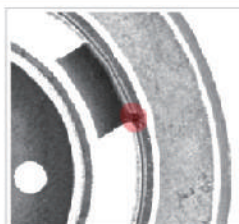
缺料1
Shortage Of Materials 1



缺料2
Shortage Of Materials 2



缺料3
Shortage Of Materials 3

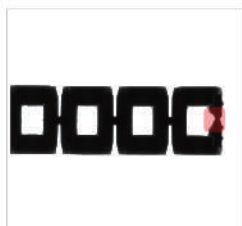


缺料4
Shortage Of Materials 4

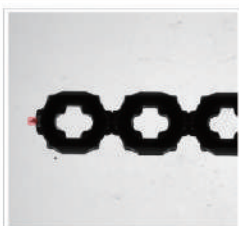


缺料5
Shortage Of Materials 5

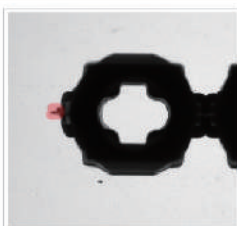
塑料件缺料/毛边/划伤 Plastic Parts Are Short Of Material/burrs/scratches



缺料
Shortage Of Materials



毛边1
Rough Selvedge 1



毛边2
Rough Selvedge 2



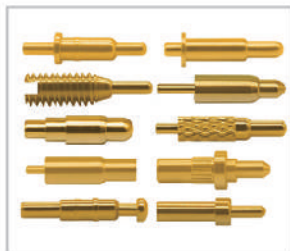
划伤1
Scratch 1



划伤2
Scratch 2

可选检测产品

OPTIONAL DETECTION PRODUCTS



可检测各种材质, 不同形状的外观和尺寸
IT CAN DETECT THE APPEARANCE AND SIZE

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